

National Park Service
U.S. Department of the Interior



Gros Ventre Campground Rehabilitation Environmental Assessment/Assessment of Effect

Grand Teton National Park
Wyoming



May 2009

Environmental Assessment/Assessment of Effect

Gros Ventre Campground Rehabilitation
Grand Teton National Park
Moose, WY

EXECUTIVE SUMMARY

The National Park Service proposes to rehabilitate the Gros Ventre Campground with infrastructure and facility improvements that would benefit the visiting public, park employees, park operations and wildlife. The purpose of the project is to address health and safety concerns related to aging campground infrastructure, enhance the experience of park visitors, meet current and future visitor demands, reduce impervious surface and restore natural vegetation and wildlife habitat. The project is also needed to provide for additional seasonal National Park Service, concessioner, and partner RV administrative sites.

This Environmental Assessment/Assessment of Effect evaluates two alternatives for rehabilitation of the Gros Ventre Campground.

Alternative 1—No Action Alternative: Under this alternative, the Gros Ventre Campground would not be rehabilitated. There would be no new improvements and all existing infrastructure and facilities would remain in place including: the outdated water system; the existing water treatment building; the existing undersized dump station; and existing campground office/contact station and associated parking. The campground would remain non-compliant with the Architectural Barriers Act of 1968 and the lack of visitor amenities and administrative RV sites would continue.

Alternative 2—Preferred Alternative: This alternative proposes to upgrade and/or replace critical campground infrastructure, including: a new water and waste water system; install up to 50 visitor electric hook ups sites; expand of existing administrative campsites; upgrade comfort stations to meet current accessibility standards; construct new shower and laundry facilities for visitor and administrative use; and permanently close two existing campground loops. The campground entry area, including the office, parking area, and dump station, would be realigned and expanded to meet current visitor needs. This alternative also proposes to reduce the existing campground footprint by up to eight acres and revegetate and restore valuable wildlife habitat.

The two alternatives were evaluated for impacts to archaeological and ethnographic resources, soils, vegetation, water resources (surface, groundwater, and floodplains), wildlife, park operations, and visitor use and experience. There would be no major, adverse impacts to these resources.

This Environmental Assessment/Assessment of Effect will be on public review for 30 days. If you wish to comment, you may mail comments to the address below or post comments online at <http://parkplanning.nps.gov/grte>.

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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 I: PURPOSE AND NEED

1.1 INTRODUCTION

Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway are located in the northwest corner of Wyoming, just south of Yellowstone National Park. Grand Teton National Park encompasses approximately 310,000 acres (125,550 ha) and the Parkway comprises about 23,700 acres (9,591 ha) of land between the northern boundary of Grand Teton National Park and the southern boundary of Yellowstone National Park. For the purposes of this document, references to “Grand Teton National Park” or the “Park” hereafter refer to both Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway.

The 1963 *Gros Ventre Campground Master Plan* (Revised 1965) proposed the conversion of an old cow pasture along the Gros Ventre River to the present-day Gros Ventre Campground. The plan projected full development to accommodate 520 campsites. The 750-seat amphitheater with its 80-car parking lot could be expanded to 160-car capacity. In 1964, during the first phase of construction, 220 campsites and six comfort stations were installed. In 1965, the second phase of construction added 165 campsites and eight more comfort stations. The Gros Ventre Campground is located in the park’s south district, bordering the north edge of the National Elk Refuge (Figure 1.1). The 170-acre campground is the largest of the six campgrounds in Grand Teton National Park¹. Within eight loops there are 365 visitor sites, 20 administrative sites, 14 comfort stations, a two-stall RV dump station, amphitheater, and a small administrative area. The campground infrastructure and subsequent impervious surface consists of over 4.5 miles (11 acres) of pavement in the road system, parking, and amphitheater.

In 2003, Grand Teton National Park determined that the most efficient and cost-effective method to manage its campgrounds would be through its concessioners. A financial feasibility and market analysis that was prepared to support the concessions contracting process showed that in the private sector, most campgrounds have at least some campsites with hookups in order to improve public service and utilization. Research conducted by the park showed that converting 25 percent of sites to electric hook up sites would be a reasonable balance between meeting visitor demand and maintaining the rustic nature of the campground. This study also identified several maintenance and improvement projects necessary to improve park campground standards.

In 2007, the Grand Teton Lodge Company was awarded the new concessions contract, which required a capital investment to improve campgrounds. For Gros Ventre Campground, the contract included: replacement of utility systems; campsite improvements such as utility hookups, new picnic tables and fire rings to enhance visitor experience and increase occupancy; improved and accessible comfort stations; and an updated and improved dump station facility.

Although Gros Ventre Campground is a concessioner managed campground, the operation and maintenance of utilities is the responsibility of the National Park Service

¹ Other park campgrounds are Jenny Lake (51 visitor sites, 1 employee site), Signal Mountain (80 visitor sites, 1 employee site), Colter Bay (352 sites), Flagg Ranch (175), and Lizard Creek (61 visitor sites, 2 employee sites).

and closure of the dump station, water system or other utilities/ infrastructure due to system malfunction, would result in the National Park Service not meeting its contractual obligations. The National Park Service retains responsibility for the operation and maintenance of the water and wastewater systems

This Environmental Assessment/ Assessment of Effect (hereafter referred to as Environmental Assessment or EA) provides the framework for the National Park Service and concessioner to conduct rehabilitation work aimed at improving overall campground services and facilities. This document also discloses the potential effects to the human environment from the proposed rehabilitation of the Gros Ventre Campground. The human environment is defined as the natural and physical environment and the relationship of the people with that environment.

1.2 PURPOSE & NEED FOR ACTION

The purpose of rehabilitating the Gros Ventre Campground is to enhance the experience of park visitors; meet current and future visitor demands; address health and safety concerns related to aging campground infrastructure; reduce impervious surface and restore natural vegetation and wildlife habitat in the project area by reducing the overall campground footprint; address seasonal employee housing shortfalls, upgrade comfort stations to meet current accessibility standards; remove infrastructure from flood prone areas of the campground; expand existing administrative camping facilities, and provide visitor utility hook up sites.

The primary reason the National Park Service is proposing to rehabilitate the Gros Ventre Campground is because the aging facilities and infrastructure have not been upgraded or changed since the campground first opened 45 years ago. The design and services do not meet the need of today's visitors. Additionally, the failing infrastructure requires emergency repairs 3-5 times a year. If infrastructure should fail, public health and safety, as well as the quality of the Gros Ventre River and the Snake River aquifer could be threatened.

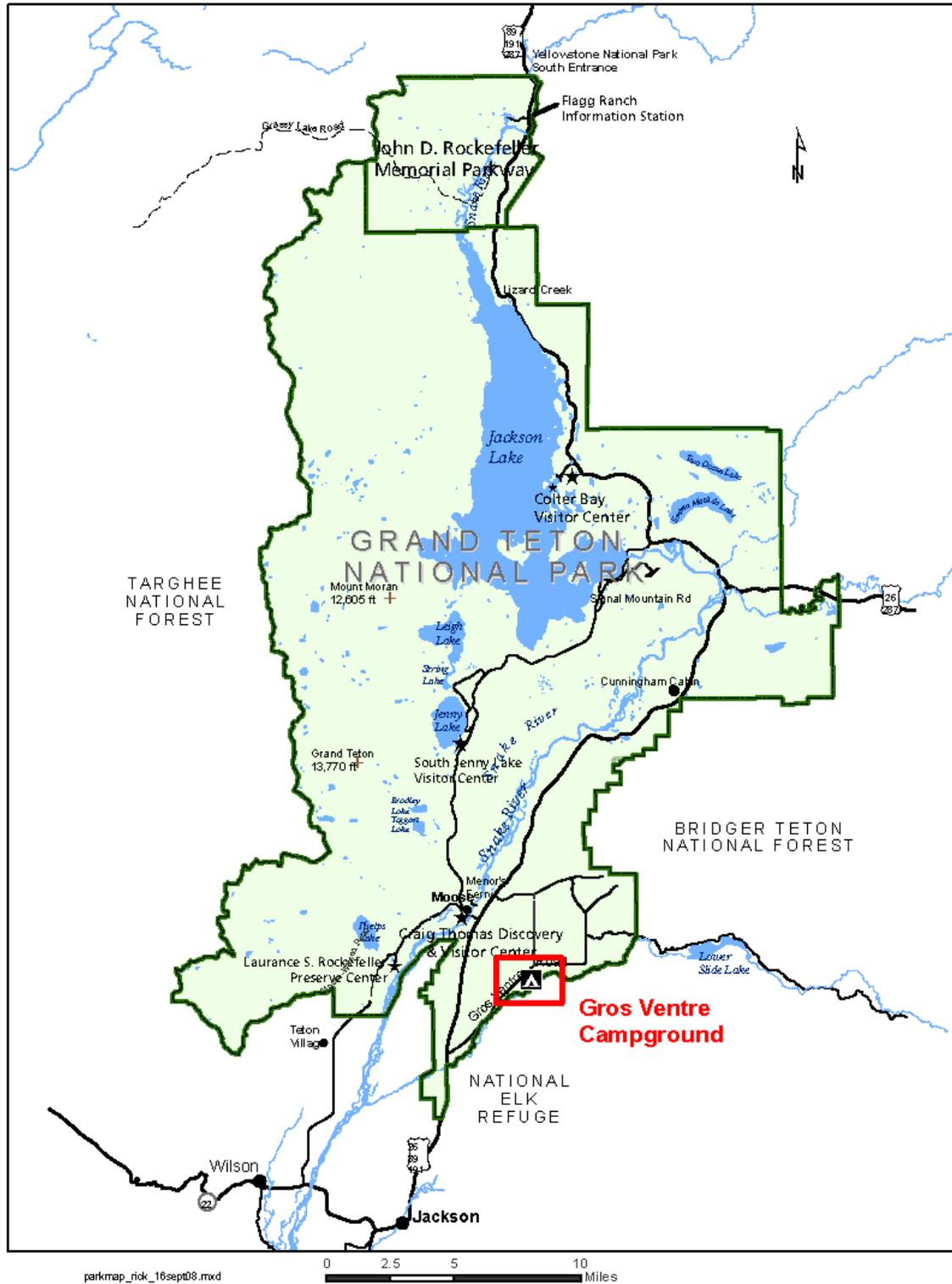
The project is also needed to provide for additional seasonal National Park Service, concessioner, and partner RV administrative sites. The conversion of a number of underutilized visitor sites to administrative RV campsites also provides necessary housing for effective campground and park operations.

Additional conditions that have led the National Park Service to propose rehabilitation actions within the project area are described as follows:

Campground Footprint

In the last 10 years, the campground has filled to capacity only once - in 2003. Additionally, there have been only 68 visitor nights filling more than 250 campsites in the last ten years. The large footprint of the campground, with its relatively low occupancy rates, not only results in an unnecessarily large number of facilities and area to be managed, but also displaces wildlife from potentially prime habitat.

Figure 1.1 Project Vicinity Map



Water System

Located on the north side of loop A, the 1964 water system consists of a well, a 1,500-gallon hydropneumatic pressure tank and a chlorine dose system for treating water. Although the treated water from the well meets Environmental Protection Agency and Wyoming Department of Environmental Quality standards, the pressure tank is rusting and cracking, which has created excessive operational costs and disruption of services.

The well and water supply system serves the entire campground. The 8-inch well is 150 ft-deep and the depth to the water level is approximately 11 ft. A 1,200 ft² water treatment building was built around the well making repair or replacement of the well extremely difficult. The electric service and controls for the pump are outdated and in poor condition.²

The water distribution system consists of 2–4 inch galvanized cast iron pipes. Lines are often root bound, obstructing flow and frequently requiring emergency repair when lines are broken or completely obstructed. The uninsulated lines are buried 2–4 ft deep, limiting the use during shoulder seasons because of the threat of freezing.

There is no back-up well or pump system in the campground; therefore, failure of the system or interruption of service would result in lack of sanitary services, threatening the health and safety of visitors and employees.

Dump Station

The dump station and contact station share a waste water system and leach field that was constructed in 1965. Park staff has been responding to regular system failures since 1995, preventing them from addressing other maintenance needs throughout the park.

Although visitor use of the Gros Ventre Campground has declined in recent years, RV use and size has increased. This has put an added burden on the dump station leach field where it can no longer properly treat the waste. RV dump waste is more concentrated than typical wastewater and contains chemicals to control odors. Active ingredients in these chemicals often include formaldehyde or quaternary ammonium chloride (Comey 1998). The entry of these harmful and concentrated chemicals into the groundwater without proper treatment poses a public health risk. The tank capacity of 3,000 gallons is undersized for current demand and therefore requires frequent pumping. On several occasions when pumping was not prompt enough, the sewage flowed onto the ground near the septic tank causing a public health hazard.

The leach field is located on a bench approximately 1,300 ft from the Gros Ventre River and the predominant vegetation is sagebrush. The field, which consists of three leach lines, each 75 ft-long, is undersized for increased demand on the dump station. The concrete pipe drain fields have roots which are growing into weak areas and connections. System failure during peak visitation may create an adverse health and safety situation for visitors and employees, and could lead to potentially harmful environmental effects.³

² An additional well exists 200 ft southwest of the existing leachfield. This well was drilled in 1975 and was used as a monitoring well, along with four others drilled in 1996. (Comey 1998).

³ RV dump waste is more concentrated than typical wastewater and contains chemicals to control odors. The chemicals may include formaldehyde or quaternary ammonium chloride. (Comey 1998)

Comfort Stations

There are 14 comfort stations located within the campground and currently, none meet Architectural Barriers Act of 1968⁴ accessibility standards.

The comfort stations located in loops E, F, G and Group utilize a collection system and lift station to pump effluent to a larger septic tank and leach field on the bench at the west end of the campground. The four comfort stations and their associated infrastructure located in loops G and F are within flood prone areas. These areas have flooded several times during the spring melt, when water levels are at their highest. Such high water events require closure of these loops and special attention to prevent overloading the system or contaminating the Gros Ventre River.

Visitor Campsites

Currently, the Gros Ventre Campground has 365 visitor RV/ tent campsites. There are no visitor utility hookup sites or Architectural Barriers Act compliant campsites.

Administrative Sites

There are 43 administrative campsites in the park, 20 of which are located in Gros Ventre Campground. Administrative RV sites are used by park, partner, and concessioner employees and volunteers who are critical to park operations. In 2006, the Gros Ventre Campground Interdisciplinary Team identified the current need of over 70 administrative RV campsites for seasonal employees and volunteers, and this number is expected to grow in the near future. This estimated need includes the 2007 displacement of 12 seasonal RV sites in the Beaver Creek area by cabins that were donated to the park for use as employee housing--.

Amphitheater

The 1960s vintage, 750-seat amphitheater has a half-acre parking lot able to accommodate 80 vehicles. The parking lot is used primarily for excess and oversized vehicle parking. The amphitheater facility is oversized and underutilized, as the numbers of visitors attending evening programs is relatively low compared to the size of the amphitheater. Of Grand Teton National Park amphitheaters, the Gros Ventre Campground amphitheater has the lowest attendance. On average, 50 visitors attend programs at the Gros Ventre Campground amphitheater during peak season. By comparison, on average, 150 visitors attend amphitheater programs at Colter Bay.

OBJECTIVES

- Upgrade and rehabilitate critical infrastructure and utilities, thereby providing for safe and sustainable operations of the water, electric, and wastewater systems (*NPS Management Policies 2006*, §9.1.5.1 Water Supply Systems; §9.1.5.1 Wastewater Treatment Systems).
- Provide electric only RV hookup sites in the campground to meet visitor demand and provide a wider variety of experiences (*NPS Management Policies 2006*, §9.3.2.1 Campgrounds).

⁴ Architectural Barriers Act of 1968 (ABA) compliant. The ABA requires access to all facilities designed, built, altered, or leased with Federal funds.

- Increase the park's ability to meet National Park Service and partner demands for employee housing by providing full hookup RV sites for administrative use (*NPS Management Policies 2006*, §7.6.1 Volunteers in Parks; §7.6.2 Cooperating Associations; §9.4.3 Employee Housing).
- Improve service to all visitors including those with disabilities by providing campsites and comfort stations that meet current accessibility standards (*NPS Management Policies 2006*, §9.1.2 Accessibility for Persons with Disabilities; §9.3.3 Comfort Stations).
- Remove comfort stations and utilities from flood prone areas (*NPS Management Policies 2006*, §4.4.2.4 Natural Landscapes; §9.3.3 Comfort Stations).
- Decrease campground impervious surface and overall footprint to improve critical wildlife winter range and provide overall natural resource benefits (*NPS Management Policies 2006*, §4.4.2.4 Natural Landscapes).

1.3 APPROPRIATE USE

Sections 1.4 and 1.5 of *NPS Management Policies 2006* directs the National Park Service to ensure that allowed park uses would not cause impairment of, or unacceptable impacts on, park resources and values. A new form of park use may be allowed within a park only after a determination has been made in the professional judgment of the park manager that it will not result in unacceptable impacts.

Section 8.1.2 of *Management Policies 2006*, Process for Determining Appropriate Uses, provides evaluation factors for determining appropriate uses. All proposals for park uses are evaluated for:

- consistency with applicable laws, executive orders, regulations, and policies;
- consistency with existing plans for public use and resource management;
- actual and potential effects on park resources and values;
- total costs to the service; and
- whether the public interest will be served.

Park managers must continually monitor all park uses to prevent unanticipated and unacceptable impacts. If unanticipated and unacceptable impacts emerge, the park manager must engage in a thoughtful, deliberate process to further manage or constrain the use, or discontinue it. More information on the definition of unacceptable impacts as cited in §1.4.7.1 of *NPS Management Policies 2006* can be found in the beginning of Chapter 3 of this document.

Campgrounds are common and vital facilities in most park units. Proper location of infrastructure, materials and methods would ensure that unacceptable impacts to park resources and values would not occur. The proposed campground improvements are consistent with the Grand Teton National Park Master Plan (1976) and other related park plans. With this in mind, the National Park Service finds that the campground improvements are an acceptable use at Grand Teton National Park.

1.4 IMPAIRMENT AND CONSERVATION OF PARK RESOURCES AND VALUES

National Park Service *Management Policies 2006* require analysis of potential effects to determine whether or not actions would impair park resources. The fundamental purpose of the national park system, established by the Organic Act (16 USC 1, Sec. 1-4) and reaffirmed by the General Authorities Act (16 USC 1a-1 through 1a-8), as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws to give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within the park, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values. An impact to any park resource or value may, but does not necessarily, constitute impairment, but an impact would be more likely to constitute impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. A determination on impairment is made in Chapter 3 for natural and cultural resource impact topics.

In addition to mandating the prevention of impairment, the Organic Act requires that the National Park Service prioritize conservation over use whenever the two are found to be in conflict. The National Park Service complies with this mandate by ensuring that a proposed use of the park will not result in unacceptable impacts to park resources and values.

1.5 RELATIONSHIP OF THE PROPOSED ACTION TO PREVIOUS PLANNING EFFORTS, LAWS, AND POLICIES

The following laws and executive orders guide National Park Service management of facilities, visitor services, and natural and cultural resources and have relevance to project: the National Environmental Policy Act of 1969; the Endangered Species Act of

1973; the National Historic Preservation Act of 1966; the Clean Water Act of 1972; the Clean Air Act of 1977; and the NPS Organic Act of 1916; Americans with Disability Act; Executive Order 11988: Floodplain Management; Executive Order 11990: Protection of Wetlands.

Policies are guiding principles or procedures that help managers make day-to-day decisions. The primary source of guidance is the *NPS Management Policies 2006*. Policy topics that are relevant to the Gros Ventre Campground Rehabilitation Environmental Assessment include cultural resource management; interpretation and education; and park facilities including campgrounds and commercial visitor services.

Another source of National Park Service policies are Director's Orders, contained in the NPS Directives System. Director's Orders are posted online at <http://data2.itc.nps.gov/npspolicy/DOrders.cfm>. Director's Orders with relevance to this project are: DO-2: Park Planning; DO-6: Interpretation and Education; DO-12: Environmental Impact Analysis; and DO-77: Natural Resource Protection.

Other planning and National Environmental Planning documents with relevance to the Gros Ventre Campground Rehabilitation Environmental Assessment are:

Bison and Elk Management Plan Final Environmental Impact Statement (February 2007) and Record of Decision (April 2007)

The US Fish and Wildlife Service and the National Park Service developed a plan for managing bison and elk in the National Elk Refuge and Grand Teton National Park. The plan addressed elk and bison threshold numbers, population control measures, forage management, winter feeding, disease management, restoration of habitat, and management of other species of wildlife. These management decisions are important, as the National Elk Refuge and Gros Ventre Campground share a common boundary, and the campground and nearby Gros Ventre River are migration corridors and excellent habitat for elk, bison, and other wildlife.

Grand Teton National Park Transportation Plan Final Environmental Impact Statement (September 2006) and Record of Decision (March 2007)

This plan includes a mix of separated multi-use pathways, improved roadway shoulders, re-alignment of the Moose-Wilson Road and calls for a feasibility study of potential transit options. The plan addresses a future phase of a widened shoulder on the Gros Ventre Road from the junction of 287/191/89, to the town of Kelly.

Grand Teton National Park Fire Management Plan EA (October 2004) and Finding of No Significant Impact (December 2004)

This plan allows fire management staff to use multiple tools available (i.e. prescribed fire, mechanical treatments, wildland fire use, and suppression) to manage fire throughout the park.

Grand Teton National Park Master Plan (1976)

The 1976 Master Plan addresses the park's purposes, its resource values, its relationship to the regional environs, and the means by which its resources may best be managed. The Master Plan for Grand Teton National Park employs a land classification system that categorizes land within the national park in six ways:

- Class I: High-Density Recreation (Colter Bay and Jackson Lake Lodge).
- Class II: General Outdoor Recreation (roads, campgrounds, low-density lodging, and residential and operation sites).
- Class III: Natural Environment (valley lands committed to special uses as defined by legislation such as grazing, stock driveways, and life estates) . These lands serve as a buffer or transition zone, with low-density use and collectively, they provide the setting for park's Class IV lands.
- Class IV: Outstanding Natural (sections of the Teton Range and the Potholes).
- Class V: Primitive (undeveloped lands with no roads that preserve the backcountry experience).
- Class VI: Historical (remains of prehistoric settlement and historic utilization, which are significant parts of the park interpretive story).

The Gros Ventre Campground is an example of a Class II land classification surrounded by Class III (Natural Environment) land.

Foundation for Planning and Management, Grand Teton National Park and John D. Rockefeller , Jr. Memorial Parkway (2006)

Gros Ventre Campground rehabilitation objectives are consistent with the mission statements for Grand Teton National Park and John D. Rockefeller, Jr., Memorial Parkway. Grand Teton National Park preserves and protects the spectacular and geologically unique landscape of the Teton Range, a diversified array of wildlife, and variety cultural resources symbolic of the American West. The park maintains the inherent integrity of the natural resources, processes and systems, and recognizes the dynamic geological processes that continue to influence the land and environment. The park also provides visitors an opportunity to understand, enjoy and be inspired by the wonders of the park in many different ways in a manner that does not diminish its fundamental resources and values. Grand Teton National Park provides a rare combination of outdoor and educational activities and outstanding opportunities to experience natural sounds, dark night skies, solitude, appreciation, and stewardship.

The John D. Rockefeller, Jr., Memorial Parkway protects many of the same natural and cultural resources and provides similar visitor opportunities as the two neighboring parks (Grand Teton and Yellowstone National Parks) to which it seamlessly connects. The Parkway also commemorates the national importance of John D. Rockefeller, Jr.'s contributions to the cause of conservation.

Jackson/Teton County Comprehensive Plan

The comprehensive plan prepared by the Town of Jackson and Teton County indicates in the natural and scenic resources and conservation chapter that the Gros Ventre Campground borders a Conservation Focus Area.

1.6 SCOPING AND RELEVANT ISSUES

Scoping is an early and open process to determine the breadth of environmental issues and alternatives to be addressed in an environmental assessment. Grand Teton National

Park conducted both internal scoping with appropriate National Park Service staff and external scoping with interested and affected groups and agencies.

Internal scoping was conducted by the staff at Grand Teton National Park. An interdisciplinary team was formed in May 2005, to define the purpose and need, identify a range of potential action alternatives to address the need, determine what the likely issues and impact topics would be, and to identify the relationship of the proposed action to other planning efforts in the park.

Public Scoping for the Gros Ventre Campground Rehabilitation Environmental Assessment began June 15, 2005, with a press release, a public scoping brochure sent to the core mailing list, and a posting on Planning, Environment, and Public Comment website. On July 1, a scoping poster was posted in the five Grand Teton National Park campgrounds and the Kelly and Moose Post Offices. More than 200 scoping brochures were sent to the campgrounds and the Moose Visitor Center. The public comment period was from June 15-July 31, 2005, although posters provided the park email for comments outside of the official comment period. Forty-two comments were received from agencies, organizations, and individuals.

The park initiated consultation with the US Fish and Wildlife Service, the Wyoming Game and Fish Department and the State Historic Preservation Office by sending a scoping statement to each agency. The US Fish and Wildlife Service provided a written response to the scoping statement in which the agency provided a list of threatened, endangered, and candidate species that have the potential to occur on or adjacent to the Gros Ventre Campground. The letter suggests protective measures and recommends that projected impacts to these species be considered in this Environmental Assessment, along with migratory birds and wetlands. The Wyoming Game and Fish Department also provided a written response to the scoping statement in which they expressed concern about impacts to elk, moose, bald eagles and trumpeter swans should the campground expands in size or seasonal window of operation be expanded, although neither of these actions is being proposed in this EA. Comments and recommendations from both agencies have been addressed and incorporated into the Chapter 3 wildlife sections of this document. It should be noted that while expansion of the campground and of the seasonal of operation were both considered during the development of alternatives, both options were ultimately dismissed from analysis (see section 2.5 Alternatives Considered but Dismissed). The State Historic Preservation Officer did not provide a written response to the scoping statement. Copies of agency correspondence letters are provided in Appendix A (Agency Correspondence).

RELEVANT SCOPING ISSUES

Public comments were organized into 5 separate issues: visitor campsites and amenities, administrative sites, utilities, the natural environment, and park operations. Each issue is summarized below.

The majority of public comments (55) pertained to visitor sites, including RV hookup sites, general campsites, group sites, and visitor amenities. Although several commenters stated their preference to keep the campground as is by not adding any additional amenities, most recommend some improvements ranging from expanding to a full facility RV park to keeping the area more rustic with limited amenities. Larger improvements suggested, included the need for larger restrooms and dump station, a

central kitchen and laundry facilities, a small store, and a pavilion for groups. Smaller improvements recommended included such things as enlarging the campsites, repair or replace fire pits and picnic tables, and better signage. Additional substantive comments pertained to the relocation of flood prone campsites.

The second issue addressed administrative sites, such as the types of utilities and whether the administrative sites should be separated from visitor sites. Thirteen comments were assigned to this category and they were unanimously in favor of locating administrative and volunteer sites separately from visitor sites.

The third issue addressed utilities, roads, and facilities (i.e., restrooms, laundry and shower facilities, dump station, general store, picnic areas, and amphitheater). A total of 52 comments were grouped into this category, with the majority of comments expressing favor for laundry, shower facilities, restroom improvements, including accessibility upgrades, and dump station and other infrastructure upgrades. One comment expressed favor for widening the main access road, and two comments were in favor of a general store while three were not. Two comments expressed favor for the development of a picnic area, one suggested refraining from addressing the amphitheater issue until after other rehabilitation actions are implemented, and another comment suggested turning the amphitheater parking area into a designated activity area.

The fourth issue addressed public concern about vegetation, water, and wildlife resource management. Specific comments included the need for a vegetation survey of the project area, revegetation of the area, consideration of adverse effects to the Gros Ventre River and associated wetlands due to increased wastewater and sewage, an analysis of wildlife use of the project area, a floodplain analysis, and the effect of the project on the eligibility of a section of the Gros Ventre River as Wild and Scenic.

The fifth and last issue addressed campground and park operations and management concerns. Some comments pertained to the need to compare seasonal and year round use options, consideration of alternative campground locations, and reducing the size of the existing campground. Other comments pertained to user-fee issues, the need to document seasonal housing demands and use/ occupancy trends, and safety concerns such as signage, speed, and quiet hours free of generator noise.

1.7 IMPACT TOPICS

In this section, the National Park Service provides an evaluation and explanation as to why impact topics either are or are not evaluated in further detail. A summary of impact topics retained or dismissed is provided in Table 1.7. Some impacts were dismissed from detailed study after discussions with park specialists and/ or input from federal and state agencies, and after internal and public scoping was completed. Impact topics were dismissed from further evaluation in this EA if:

- impact topic resources do not exist in the project area;
- impact topic resources would not be affected by the proposal, or the likelihood of impacts are not reasonably expected; or
- there would be minor or less effects (i.e., no measurable effects) from the proposal, and there is little controversy on the subject or reasons to otherwise

include the topic.

The National Park Service defines “measurable” impacts as moderate or greater effects. It equates “no measurable effects” as minor or less effects. “No measurable effect” is used by the National Park Service in determining if a categorical exclusion applies or if impact topics may be dismissed from further evaluation in an Environmental Assessment or Environmental Impact Statement. The use of “no measurable effects” in this Environmental Assessment pertains to whether the National Park Service dismisses an impact topic from further detailed evaluation in the Environmental Assessment. The reason the National Park Service uses “no measurable effects” to determine whether impact topics are dismissed from further evaluation is to concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail as required by CEQ regulations at 1500.1(b).

IMPACT TOPICS RETAINED FOR FURTHER ANALYSIS

Archaeological Resources

The National Park Service, as steward of many of America's most important cultural resources, is charged to preserve cultural resources for the enjoyment of present and future generations. Management decisions and activities throughout the National Park System must reflect awareness of the irreplaceable nature of these resources. The National Park Service will protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the *NPS Management Policies 2006* and the appropriate Director's Orders.

The National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.), the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), the NPS DO-28: Cultural Resource Management Guideline, *NPS Management Policies 2006*, and DO-12, Conservation Planning, Environmental Impact Analysis, and Decision Making and Handbook require the consideration of impacts on archaeological resources listed in or eligible for listing in the National Register of Historic Places. In addition, the *Native American Graves Protection and Repatriation Act* of 1990 (25 USC 3001) requires specific actions when Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony are excavated or discovered on federal lands.

The National Park Service's DO-28B: Archeology, affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of archeological resources inside units of the National Park Service. As one of the principal stewards of America's heritage, the National Park Service is charged with the preservation of the commemorative, educational, scientific, and traditional cultural values of archeological resources for the benefit and enjoyment of present and future generations. Archeological resources are nonrenewable and irreplaceable, so it is important that all management decisions and activities throughout the NPS reflect a commitment to the conservation of archeological resources as elements of our national heritage.

A variety of archeological resources are found in Grand Teton National Park. Construction may result in impacts to archeological resources, as well as visitation in areas of known archeological sites; therefore, this topic was retained for further analysis.

Ethnographic resources

National Park Service's DO-28: Cultural Resource Management defines ethnographic resources as any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. According to DO-28 and Executive Order 13007 on sacred sites, the National Park Service should try to preserve and protect ethnographic resources.

While locations of specific ethnographic resources are not known within the project area, it is known that American Indian people utilized the Grand Teton area over thousands of years for hunting and gathering subsistence and occupation. Grand Teton National Park holds many resources important to these tribes including, but not limited to, wildlife, plants, and water. These resources do not always have a defined boundary and may occur within the project area.

The American Indian tribes traditionally associated with the lands in Grand Teton National Park are being apprised by letter of the proposed action (Appendix A).

Because many of these resources have not been identified, the National Park Service will continue to consult with the Blackfoot, Nez Perce, Crow, Northern Arapaho, Northern Cheyenne, Eastern Shoshone, and Shoshone-Bannock tribes. Due to continued consultation, this impact topic is included for analysis in this EA.

Soils

According to the *NPS Management Policies 2006*, the National Park Service will preserve and protect geologic resources and features from adverse effects of human activity, while allowing natural processes to continue. These policies also state that the National Park Service will strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources.

Soils may be impacted due to construction activities associated with new utilities, parking, grading, and site access. Although there would be mitigation measures designed for the project that would minimize soil loss during and after construction, the action alternative would result in new ground disturbance and have the potential to impact soils; therefore, this topic was retained for further analysis.

Vegetation

The National Park Service is directed by the Organic Act to conserve the scenery and the natural objects unimpaired for future generations. *NPS Management Policies 2006* define the general principles for managing biological resources as maintaining all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity and ecological integrity of plant communities. When National Park Service management actions cause native vegetation to be removed, the National Park Service will seek to ensure that such removals will not cause unacceptable impacts to native resources, natural processes, or other park resources.

Non-native species, also referred to as exotic or invasive, are not a natural component of the ecosystem. Management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten park resources or public health and when control is prudent and feasible. Executive Order 13122 states

that federal agencies are to prevent the introduction of invasive species, provide for their control, provide for restoration of native species and habitat conditions in ecosystems that have been invaded, and minimize the economic, ecological, and human health impacts that invasive species cause.

The spread of non-native invasive species is a tremendous, on-going problem throughout the highly visited and occupied portions of the park. Many of these are designated by the state or county as noxious weeds that thrive in newly or highly disturbed areas. Several exotic species are present at the site. Four of these are on the State of Wyoming noxious weed list, and three of the four have proven very difficult to control or contain in Grand Teton National Park by biological, chemical or mechanical means. Ground disturbance and increases in light availability through overstory removal are factors that increase the probability of invasion of new terrain.

Vegetation may be impacted due to construction activities associated with new utilities, parking, grading, and site access. Although there would be mitigation measures designed for the project that would minimize vegetation loss and spread of exotic species during and after construction, the action alternative will result in new ground disturbance and have the potential to impact vegetation; therefore, this topic was retained for further analysis.

Water Resources

Surface and Groundwater

The Clean Water Act (33 U.S.C §§ 1251-1387) strives to restore and maintain the chemical, physical and biological integrity of the nation's waters. The act sets up a system of water quality standards, discharge limitations and permit requirements for any actions or proposed actions that may affect the quality of the nation's waters.

Executive Order 11988: Floodplain Management (42 Fed. Reg. 26951), DO-77-2 Procedural Manual 77-2: Floodplain Management, and other guidance documents all maintain the National Park Service policy of preserving floodplain values and minimizing potentially hazardous conditions associated with flooding. In the procedural manual, proposed actions are classified as fitting into one of three classes. Depending upon the action class, one of the three "regulatory floodplains" applies (100-yr, 500-yr, Extreme). If a proposed action is found to be in the applicable regulatory floodplain and relocating the action to a non-floodplain site is considered not to be a viable alternative, then flood conditions and associated hazards must be quantified as a basis for management decision making, and appropriate prescribed actions must be taken and a Statement of Findings prepared.

Wastewater systems are planned as part of the action alternative. All wastewater would be adequately treated so that, on its return as groundwater, it meets or exceeds applicable state and federal water quality standards. Mitigation measures stipulated in the permit would mitigate any effects to groundwater resources such that changes in water quality or hydrology would not be detectable.

Water resources may be impacted due to construction activities associated with new utilities, parking, grading, and site access. Although there would be mitigation measures designed for the project that will affect water quality during and after construction, the action alternative would result in new ground disturbance and have the potential to impact water quality; therefore, this topic was retained for further analysis.

Floodplains

The project area falls within the Gros Ventre River 100-year floodplain. Executive Order 11988, Floodplain Management, and NPS DO-77-2, Floodplain Management Guidelines requires examination of potential impacts to floodplains and avoidance of adverse impacts associated with their direct and indirect development. Because this project area is located in the Gros Ventre River 100 year floodplain this topic will be addressing in this EA. A Statement of Findings is attached (Appendix C).

Wildlife, Including Threatened and Endangered Species

The National Environmental Policy Act of 1969 (42 USC 4321 et seq.) calls for an examination of the impacts on all components of affected ecosystems. National Park Service policy is to maintain all the components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of plants and animals. The Gros Ventre Campground is used by a wide variety of wildlife

The Endangered Species Act (1973) requires an examination of impacts on all federally listed, threatened or endangered species. National Park Service policy requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species. Canada lynx and gray wolves are the only listed species within Grand Teton National Park. This project is not within or near a Lynx Analysis Unit and the habitat within the Gros Ventre Campground does not generally support the lynx and as a result, would not be affected by the project.

Park Operations and Partnerships

The campground utility and infrastructure systems are now in need of major rehabilitation work and require frequent emergency repair work to keep them operating and the campground open. Much of the utilities and other infrastructure systems within the campground are over 40 years old and have exceeded their serviceable life and are in need of replacement. The actions proposed in this EA have a potential to impact these aspects of park operations.

The No Action Alternative may affect maintenance operations with increased maintenance and clean-up operations required by dump station malfunction, wastewater leaks, and spills. Emergency response by park crews to wastewater spills is hazardous work which impacts park operations. Under the Preferred Alternative, construction of a replacement lift station and trenching for utility lines may necessitate the temporary closing of bathroom and dump station facilities.

The Gros Ventre Campground is managed by and provides housing for the Grand Teton Lodge Company, a park concessioner. Existing administrative sites within the campground also provide housing for volunteers, the Grand Teton Association, and other partners. There is a need within Grand Teton National Park for additional full – hookup RV accommodations for employees. Partners are being consulted with regard to the impact the alternatives would have on their operations and the potential for partner funding of portions of the proposed action. Therefore, this impact topic is retained for analysis in this document.

Visitor Use and Experience (Including Public Health and Safety)

Providing for the safe enjoyment of national park resources is one of the foundations of

the National Park Service Organic Act. The rehabilitation of Gros Ventre Campground will address safety concerns imposed by failing infrastructure. Additionally, rehabilitation may change the visitor use and experience of the site due to reductions in available campsites, additional activity, interpretation, and amenities. Therefore, visitor use and experience, including public health and safety, is retained for analysis in this document

IMPACT TOPICS DISMISSED FROM DETAILED ANALYSIS

Historic Structures and Cultural Landscapes

The National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.); the National Environmental Policy Act of 1969 (42 USC 4321 et seq.); and the NPS DO-28: Cultural Resource Management Guidelines, *NPS Management Policies 2006*, and DO-12: Conservation Planning, Environmental Impact Analysis, and Decision Making and Handbook require the consideration of impacts on historic structures and cultural landscapes listed in or eligible for listing in the National Register of Historic Places. This topic was dismissed from further analysis because there are no historic structures within the project area and the campground has not been designated a Cultural Landscape.

Museum collections

The National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.), the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), *NPS Management Policies 2006*, DO-28: Cultural Resource Management Guidelines require the consideration of impacts on museum collections (archaeology, ethnology, history, biology, paleontology, geology, and archives). No museum collection items are currently stored or exhibited in the Gros Ventre Campground; therefore this topic was dismissed from further analysis.

Air quality

The Clean Air Act of 1963 (42 U.S.C. 7401 et seq.) was established to promote the public health and welfare by protecting and enhancing the nation's air quality. The act establishes specific programs that provide special protection for air resources and air quality related values associated with National Park Service units. Section 118 of the Clean Air Act requires a park unit to meet all federal, state, and local air pollution standards. Grand Teton National Park is designated as a Class I air quality area under the Clean Air Act. A Class I designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter as specified in §163 of the Clean Air Act. Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts.

Construction activities such as hauling materials and operating heavy equipment could result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Any exhaust, emissions, and fugitive dust generated from construction activities would be temporary and localized and would likely dissipate rapidly because air stagnation at Grand Teton National Park is rare. Overall, the project could result in a negligible degradation of local air quality, and such effects would be temporary, lasting only as long as construction. The Class I air quality designation for

Grand Teton National Park would not be affected by the proposal. Because there would not be any long-term effects on air quality and overall impacts would not exceed negligible/ minor, this topic was dismissed from further analysis in the EA.

Lightscape Management

In accordance with *NPS Management Policies 2006*, the National Park Service strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human caused light. Grand Teton National Park strives to limit the use of artificial outdoor lighting to that which is necessary for basic safety requirements. The park also strives to ensure that all outdoor lighting is shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky.

The rehabilitation of Gros Ventre Campground would not measurably increase artificial light sources into the environment beyond historic levels, thus preserving the ability to see the stars, planets, and earth's moon and other natural features that are visible during clear nights around the area as well as support park interpretive programs that focus on Night Skies and Astronomy. Any new buildings or campground lighting would be mitigated by employing lighting techniques such as using reflective shields on outdoor lights that minimize the amount of light directed up at the sky, the use of low-emitting light fixtures and motion-activated sensors, and lowest wattage light fixtures possible. These measures would help preserve the natural lightscape and save energy. Because these effects are minor or less in degree and would not result in any unacceptable impacts, this topic was dismissed from further analysis in the EA.

Soundscape Management

In accordance with *NPS Management Policies 2006* and *DO-47: Sound Preservation and Noise Management*, an important component of the National Park Service's mission is the 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 National Park Service units as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

All construction activity would occur in what can be considered the developed zone of Grand Teton National Park. Existing sounds in this area are most often generated from vehicular traffic (visitors and employees entering/leaving the campground), people, and climate controls on the buildings and RVs.

During construction, human-caused sounds would likely increase due to construction activities, equipment, vehicular traffic, and construction crews. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds, and would have a negligible to minor adverse impact on visitors and employees.

Sound generated by the long-term operation after rehabilitation is complete, would most likely be beneficial, as fewer campers would use generators and the appropriate design of the campground would separate user types. Because these effects are minor or less in

degree and would not result in any unacceptable impacts, this topic was dismissed from further analysis in the EA.

Prime and Unique Agricultural Lands

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the US Department of Agriculture's Natural Resources Conservation Service, and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resources Conservation Service, the project area does not contain prime or unique farmlands. Because there would be no effects on prime and unique farmlands, this topic was dismissed from further analysis in this document.

Wetlands

Executive Order 11990 Protection of Wetlands requires federal agencies to avoid, where possible, adversely impacting wetlands. Further, §404 of the Clean Water Act authorizes the US Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge or dredged or fill material or excavation within waters of the United States. National Park Service policies for wetlands as stated in *NPS Management Policies 2006* and DO-77-1: Wetlands Protection, strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO-77-1, proposed actions that have the potential to adversely impact wetlands must be addressed in a statement of findings for wetlands.

National Wetland Inventory program shows no wetlands exist in the project area. A vegetation survey of the project area was also conducted in 2005. While the survey identified the presence of three facultative native wetland species, other wetland indicators were not present, confirming that there are no wetlands present within the project area. As such, wetlands were dismissed as an impact topic.

Wild and Scenic Rivers

Approximately 12.2 miles of the Gros Ventre River have been determined eligible for designation under the Wild and Scenic Rivers Act. Reaches of the Gros Ventre River below the Highlands Loop in Kelly do not have any Wild and Scenic River designation. The project area is therefore not within or adjacent to the corridor in question and none of the proposed actions would change the character of the river corridor in a manner that would affect its eligibility for future designation. Consequently, this topic was dismissed from further analysis.

Wilderness

According to *NPS Management Policies 2006*, proposals having the potential to impact wilderness values must be evaluated in accordance with the Wilderness Act of 1964 (16 U.S.C. 1131) and the National Park Service procedures for implementing the National Environmental Policy Act.

Gros Ventre Campground is not located within recommended or potential wilderness areas; therefore, this topic was dismissed from further analysis.

Environmental Justice

Executive Order 12898: General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the campground would continue to be available for use by all park staff and visitors regardless of race or income, and the construction workforces would not be hired based on their race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities. Thus, this topic was dismissed from further analysis in this document.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes.

There are no Indian trust resources at Grand Teton National Park. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians; therefore, this topic was dismissed from further analysis in this document.

Socioeconomic Environment

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementation of the proposed action could provide a negligible beneficial impact to the economies of Teton County, Wyoming and Idaho, due to minimal increases in employment opportunities for the construction workforce and revenues for local businesses and governments generated from these additional construction activities and workers. Any increase in workforce and revenue, however, would be temporary and negligible, lasting only as long as construction. Because impacts to the socioeconomic environment would be negligible, this topic was dismissed.

Additional National Environmental Policy Act Analysis

The alternatives include all reasonably foreseeable connected actions. Environmental effects estimated for this project consider the site-specific effects of all foreseeable actions and mitigation measures. Monitoring during and following implementation of the project would occur to verify effectiveness of mitigation measures and predictions of impact. This Environmental Assessment will guide any subsequent project implementation. If new information or unforeseen and unanalyzed actions become necessary in the future, additional site-specific environmental analysis will be conducted before implementation.

Table 1.7 Impact Topics Retained or Dismissed from Detailed Analysis

Impact Topic	Retain or Dismiss	Relevant Regulations or Policies
Cultural Resources		
Archaeological Resources	Retain	<i>National Park Service Organic Act; National Historic Preservation Act of 1966, as amended; Executive Order 11593: Protection and Enhancement of the Cultural Environment (1971); Archeological and Historic Preservation Act of 1974, as amended; Archeological Resources Protection Act of 1979, as amended; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Programmatic Memorandum of Agreement (MOA) Among the NPS, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); Protection of Archeological Resources, 43 CFR 7; Protection of Historic Properties, 36 CFR 800; NPS Management Policies (2001); Cultural Resources Management Guidelines, DO-28 (1998)</i>
Historic Structures and Cultural Landscapes	Dismiss	<i>National Park Service Organic Act; National Historic Preservation Act of 1966, as amended; Executive Order 11593: Protection and Enhancement of the Cultural Environment (1971); Archeological and Historic Preservation Act of 1974, as amended; the Secretary of the Interior's Standards for the Treatment of Historic Properties; Programmatic MOA among the NPS, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS Management Policies (2001); Protection of Historic Properties, 36 CFR 800; the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996); Cultural Resources Management Guidelines, DO-28 (1998)</i>
Ethnographic Resources	Retain	<i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; NPS Management Policies (2001); Protection of Historic Properties, 36 CFR 800; Cultural Resources Management Guidelines, DO-28 (1998)</i>
Museum Collections	Dismiss	<i>National Historic Preservation Act of 1966, as amended; National Environmental Policy Act of 1969, as amended; Museum Properties Management Act of 1955; NPS Management Policies (2001); Protection of Historic Properties, 36 CFR 800; Cultural Resources Management Guidelines, DO-28 (1998)</i>
Natural Resources		
Air quality	Dismiss	<i>NPS Organic Act; Federal Clean Air Act (CAA); CAA Amendments of 1990 (CAAA); NPS Management Policies 2001</i>
Lightscape Management	Dismiss	<i>NPS Management Policies 2001</i>
Soundscape Management	Dismiss	<i>NPS Organic Act; NPS Management Policies 2001, § 4.9 Soundscape Management, Director's Order #47: Soundscape Preservation and Noise Management</i>
Prime and unique agricultural lands	Dismiss	<i>Council on Environmental Quality 1980 memorandum on prime and unique farmlands</i>
Soils	Retain	<i>NPS Management Policies 2001; NPS Natural Resource Management Guidelines for Soil Resources Management</i>

Impact Topic	Retain or Dismiss	Relevant Regulations or Policies
Vegetation	Retain	<i>NPS Organic Act; NPS Management Policies 2001; DO-77, Natural Resource Protection; Executive Order 13112, Invasive Species</i>
Water Resources (Surface, Groundwater & Floodplains)	Dismiss	<i>Clean Water Act; Executive Order 12088; NPS Management Policies 2001 Executive Order 11988; Executive Order 11990; Clean Water Act; NPS Management Policies 2001</i>
Wetlands	Dismiss	<i>Executive Order 11988; Executive Order 11990; Clean Water Act; NPS Management Policies 2001</i>
Wild & Scenic Rivers	Dismiss	<i>Wild and Scenic Rivers Act</i>
Wilderness	Dismiss	<i>Director's Order 41; NPS Management Policies 2001; Wilderness Act of 1964</i>
Wildlife, including Threatened, Endangered and Special Concern Species	Retain	<i>Endangered Species Act; NPS Management Policies 2001; National Environmental Policy Act; Executive Order 13112, Invasive Species</i> (For GTNP – Bald Eagle, Canada Lynx, Grizzly Bear, Gray Wolf)
Social Resources		
Environmental justice	Dismiss	<i>Executive Order 12898</i>
Indian trust resources	Dismiss	<i>Department of the Interior Secretarial Order No. 3206, Interior Departmental Manual Part 512, Chapter 2</i>
Park operations and Partnerships	Retain	<i>NPS Management Policies 2001</i>
Socioeconomic environment	Dismiss	<i>40 CFR 1500 Regulations for Implementing NATIONAL ENVIRONMENTAL POLICY ACT</i>
Visitor use and experience (including public health and safety)	Retain	<i>NPS Organic Act; NPS Management Policies 2001</i>

CHAPTER 2: ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

In April of 2005, Grand Teton National Park began the scoping process with a meeting of park interdisciplinary specialists, representing interpretation, planning, visitor and resource protection, natural resource management, cultural resource management, professional services (engineering and landscape architecture), buildings and utilities, and park management. The National Environmental Policy Act mandated planning process continued until summer 2006. During internal scoping, several alternatives were developed which projected large-scale disturbance and high associated costs, both of which were undesirable. In the fall of 2007, the interdisciplinary specialists reconvened to look at the project once again. At this time, it was decided to scale the project back to reduce impacts and to be consistent with available funding.

This chapter describes the No Action alternative (Alternative 1), the National Park Service Preferred Alternative (Alternative 2) and any alternatives considered but dismissed from analysis. Alternative 2 was developed in response to issues identified during the internal and external scoping process described in Chapter 1. Alternative 2 meets the Purpose and Need (section 1.1) and is the park's preferred alternative as well as the environmentally preferred alternative. This chapter also provides a description of mitigation measures for the action alternative (2.6), a comparison of the alternatives in relation to project objectives (Table 2.7a.), and a comparison of impacts by alternatives (Table 2.7b.)

Alternative 2: Gros Ventre Campground Improvements & Restoration, the preferred alternative is based on preliminary designs and best information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are only estimates and could change during final site design. If changes during final site design are not consistent with the intent and effects of the selected alternative, then additional compliance will be needed as appropriate.

2.2 ELEMENTS COMMON TO ALL ALTERNATIVES

As a part of routine operations, the concessioner and the National Park Service would continue to repair and maintain existing utilities and other infrastructure not specifically identified in this EA. Any proposed changes which are not consistent with scope of actions and impacts covered under this document would require an additional and separate environmental and cultural compliance process.

- Wastewater facilities for comfort stations in loops A-D would remain unchanged, continuing to use separate septic tanks and leach fields for treatment.
- The existing water distribution system would remain.
- Existing administrative sites outside of loop E (10 total) would remain unchanged.
- Entry station building and parking would remain unchanged.
- As electric power lines are replaced or added, placement underground would be the preferred option.

- The park's concessioner would be responsible for replacing campfire rings, picnic tables, signage, benches and other furnishings as necessary.
- Campground would remain a seasonal campground, operating from April through October and closing for the winter season.
- Park amphitheater will remain (amphitheater and associated parking lot size will be determined later).

2.3 ALTERNATIVE 1 – NO ACTION

While this alternative does not meet the purpose and need for the project, the No Action Alternative provides a basis for comparing the management direction and environmental consequences of the proposed action and must always be considered in every Environmental Assessment. Should the No Action Alternative be selected, the National Park Service would respond to future needs associated with the Gros Ventre Campground without major actions or changes in course as proposed in this EA. It describes the action of continuing the present management operation and condition; it does not imply or direct discontinuing the present action or removing existing facilities.

Under the No Action Alternative, the 385 site campground covering 170 acres, including over 4.5 miles of roads, office and amphitheater parking areas (11 acres) and a 750-seat amphitheater, would remain unchanged.

Under the No Action Alternative the campground would continue to be managed with roughly the same configuration of site types that currently exists with 20 administrative use sites and 365 visitor use sites (Figure 2.3a.):

- loop A (46 sites): RV& tent campsites with no hookups.
- loop B (33 sites): RV& tent campsites with no hookups. Full hookups one administrative site.
- loop C (43 sites): RV & tent visitor campsites, with no hookups provided and no generators allowed.
- loop D (40 sites): RV & tent visitor campsites, with no hookups provided.
- loop E (44 visitor and 10 administrative sites): RV & tent visitor campsites, with no hookups provided and no generators allowed.
- loop F (50 sites): RV & tent visitor campsites, with no hookups provided and no generators allowed.
- loop G (36 sites): tent only, visitor campsites, with no hookups provided and no generators allowed.
- Group loop (five sites): five group sites for visitor and administrative use, having a combined capacity of 205 people.
- West Corridor Road (25 sites): RV & tent visitor campsites, with no hookups provided and no generators allowed.
- Behind the campground entry station (8 administrative sites): RV sites with full hookups.

- East Corridor (43 visitor sites, one administrative site): RV& tent campsites with no hookups. Full hookups one administrative site.

The four comfort stations located in loops F and G would continue to be located in the flood prone area, often precluding the availability of these sites in the early season. The campground was built prior to the enactment of the Architectural Barriers Act of 1968 and is therefore not legally required to provide accessible facilities. The campground would therefore continue to lack accessible campsites and comfort stations to meet the needs of visitors with disabilities.

The Gros Ventre Campground would not provide any utility hookups for visitors. A large percentage of the 365 RV and tent campsites available for visitors would remain underutilized. Administrative use for employee housing would be limited to the existing 20 full hookup RV sites.

Under the No Action Alternative all utilities would remain in place and in the current condition (Figure 2.3b.). The 45 year old water system consisting of the well, hydropneumatic pressure tank, and outdated chlorine dose system for treating water would remain in place. The existing water treatment building constructed around the well would remain in place. The existing undersized dump station, campground office/contact station and associated parking would remain in place and continue to share a waste water system and leach field. All power lines would remain above ground.

Figure 2.3a. Alternative 1 – Current Gros Ventre Campground Configuration

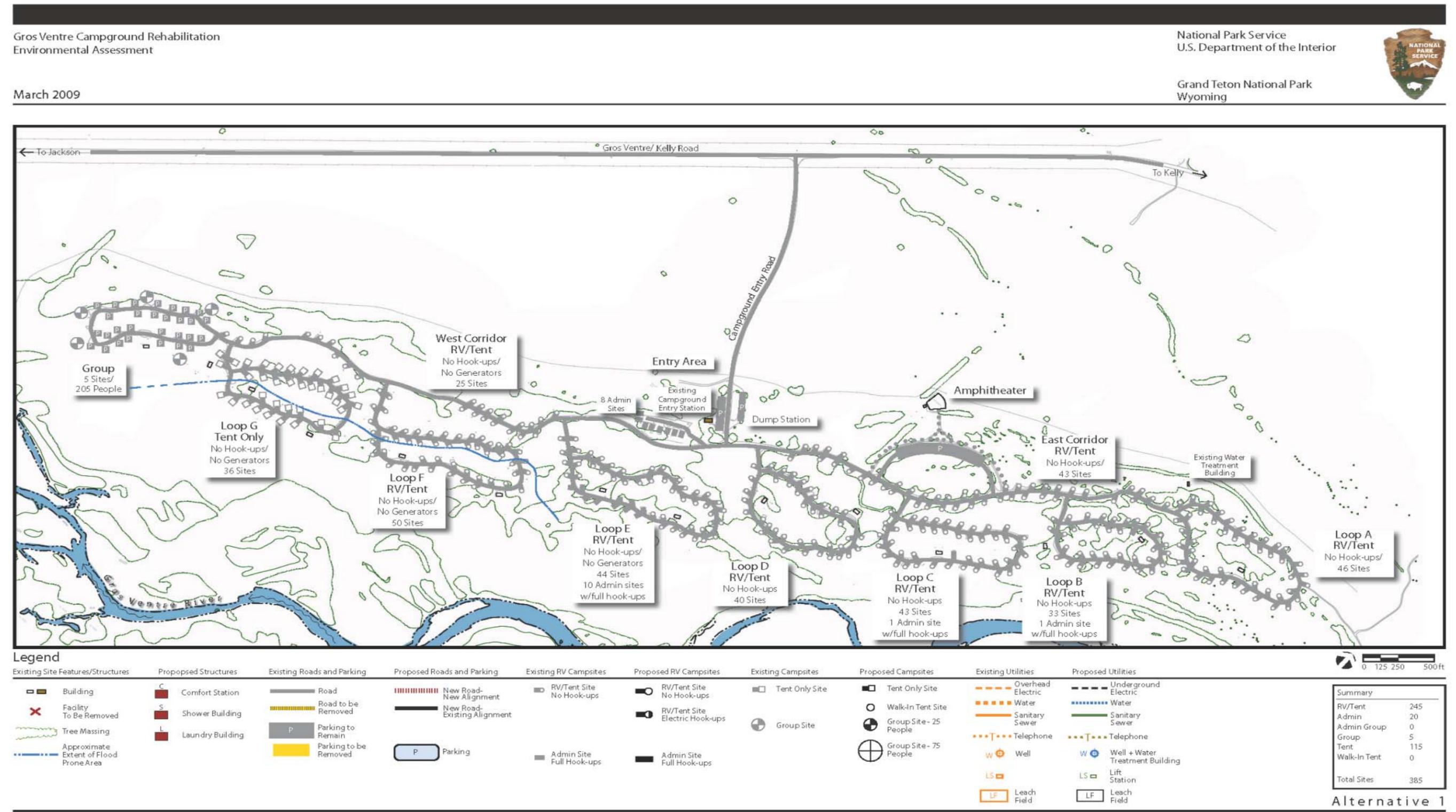
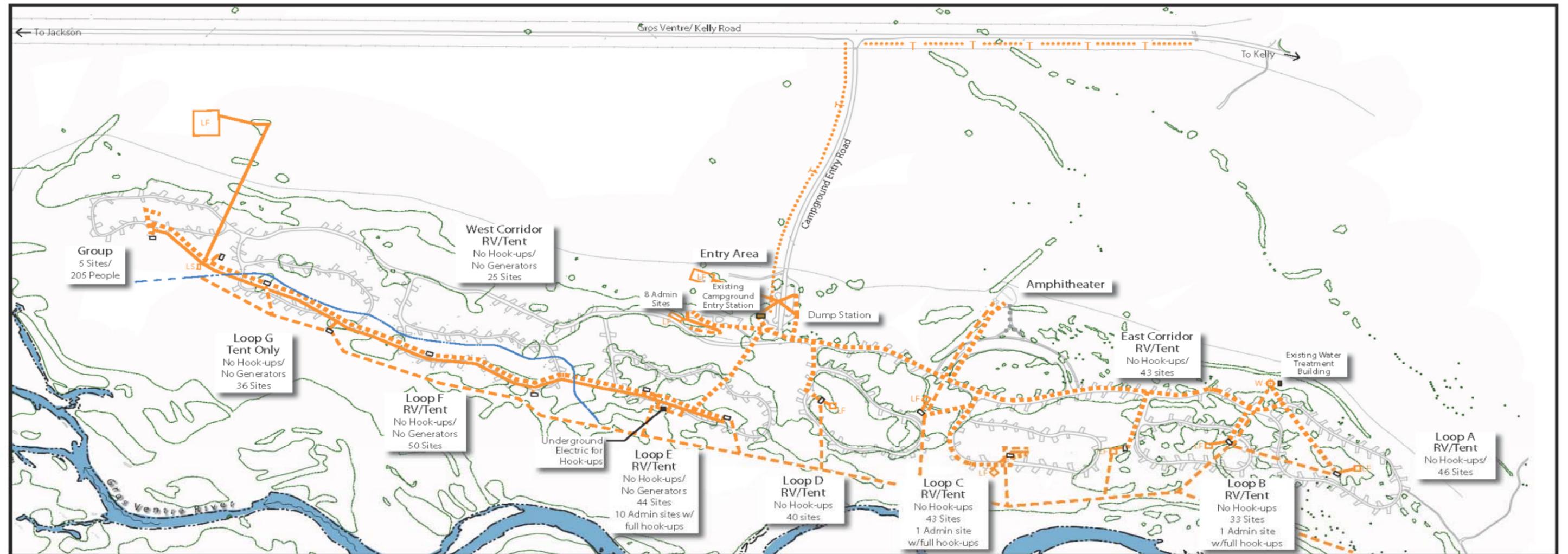


Figure 2.3b. Alternative 1 – Location of Current Utilities throughout Gros Ventre Campground



Legend		Proposed Structures		Existing Roads and Parking		Proposed Roads and Parking		Existing RV Campsites		Proposed RV Campsites		Existing Campsites		Proposed Campsites		Existing Utilities		Proposed Utilities	
	Building		Comfort Station		Road		New Road - New Alignment		RV/Tent Site No Hook-ups		RV/Tent Site No Hook-ups		Tent Only Site		Tent Only Site		Overhead Electric		Underground Electric
	Facility To Be Removed		Shower Building		Road to be Removed		New Road - Existing Alignment		RV/Tent Site Electric Hook-ups		RV/Tent Site Electric Hook-ups		Group Site		Group Site - 25 People		Water		Water
	Tree Massing		Laundry Building		Parking to Remain		Parking		Admin Site Full Hook-ups		Admin Site Full Hook-ups		Group Site - 75 People		Group Site - 75 People		Sanitary Sewer		Sanitary Sewer
	Approximate Extent of Flood Prone Area				Parking to be Removed				Well		Well		Well + Water Treatment Building		Well + Water Treatment Building		Telephone		Telephone
									Leach Field		Leach Field		Lift Station		Lift Station		Well		Well
													Leach Field		Leach Field				

Alternative 1 - Utilities

2.4 ALTERNATIVE 2: GROS VENTRE CAMPGROUND IMPROVEMENTS & RESTORATION (PREFERRED ALTERNATIVE)

Alternative 2 would involve infrastructure and facility improvements throughout the campground (Figure 2.4a.). Alternative 2 proposes a total of 308 sites: 54 for administrative use and 254 for visitor use, which would reduce the total number of sites within the campground by 77. The total number of visitor use campsites would be reduced by 111: 44 would be converted to administrative sites and 67 would be permanently closed. Campground layout and management would be based primarily on a segregation of administrative and visitor use areas. Up to 50 visitor campsites would be converted to electric hookup sites. Up to 34 additional campsites in loop E would be converted to full hookup, administrative use sites (water, sewer, electric), which would result in a total of up to 44 administrative sites. This reconfiguration would expand the footprint of each site; therefore, lowering the overall number of sites. The entirety of sites within loop E would be for administrative use only by National Park Service and concessioners or other partner employees. The administrative sites outside of loop E would remain as currently constructed.

The four comfort stations located in loops F and G would be demolished and new accessible comfort stations would be constructed out of the flood prone zone to serve loop F and the new group sites. All above ground facilities and roadways serving the Group loop (5 sites), loop G (36 sites), and 10 sites on the West Corridor Road west of loop F would be closed permanently, man-made features would be removed, and the area revegetated. Additionally, accessible shower facilities for visitor use would be constructed in loop F and shower and laundry facilities would be constructed for administrative use in loop E. The group camp would be relocated further east on the West Corridor Road adjacent to loop F, replacing individual sites on the collector road with new group sites. The group sites would be designed to serve diverse group types and sizes and would feature adequate tent pads, gathering, cooking, eating, parking and camping facilities and would provide a new shower station to better serve visitors. In addition to improved and modern group sites, the parking area for the group sites would better accommodate the size of groups using the campsites. The current amphitheater size would remain the same; the amphitheater parking lot would be reduced by 25-50 percent and the parking lot area would be revegetated. Under this alternative, the overall campground footprint would be reduced and related revegetation and enhancement efforts would result in eight additional acres of available habitat.

Under Alternative 2, a large portion of the 45 year old infrastructure would be repaired or replaced (Figure 2.4b.). The water treatment facility would be replaced and include the installation of a new source well, water treatment building, pressure tank, pump, chlorination equipment/controls, and waterline to reconnect to the existing distribution system.

An improved wastewater system would be constructed to serve loops E and F, the relocated group sites, campground office, the administrative sites behind the office, and the dump station would be expanded. New sewer line, septic tanks, manholes, and lift stations would be constructed along with a new leach field. The dump station area would be upgraded and enlarged to accommodate multiple full length RVs at the same time.

Access may be realigned to facilitate traffic flow. Additionally, new state required monitoring wells would be constructed to monitor the new leach field.

The existing wastewater systems serving loops A-D would remain. Existing wastewater lines, lift station, and leach field servicing loops E, F and Group would be abandoned and left in place. As electric lines directly serving the campground are replaced or added, when possible, new lines would be placed underground.

Figure 2.4a. Alternative 2 – Proposed Gros Ventre Campground Configuration

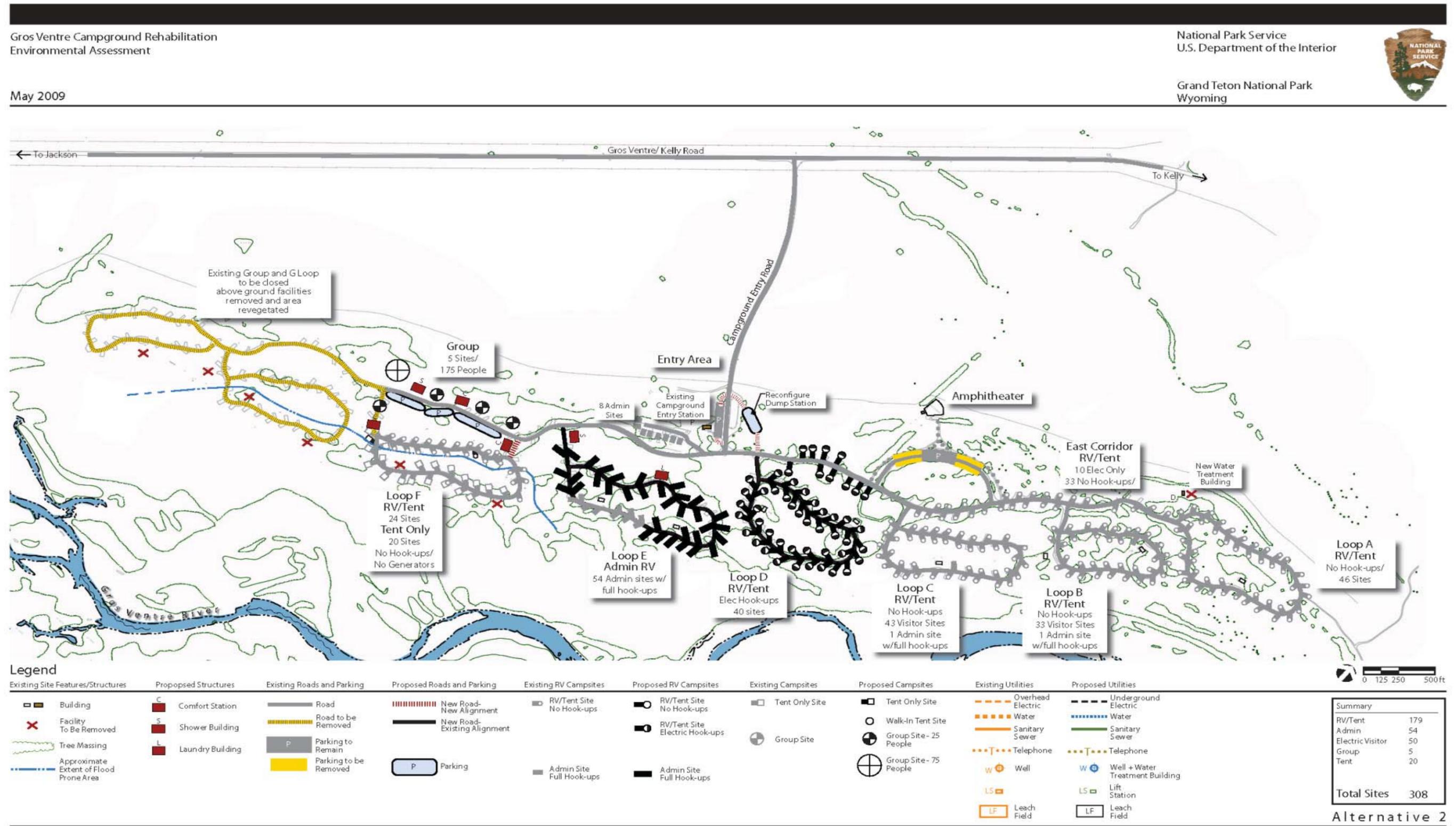
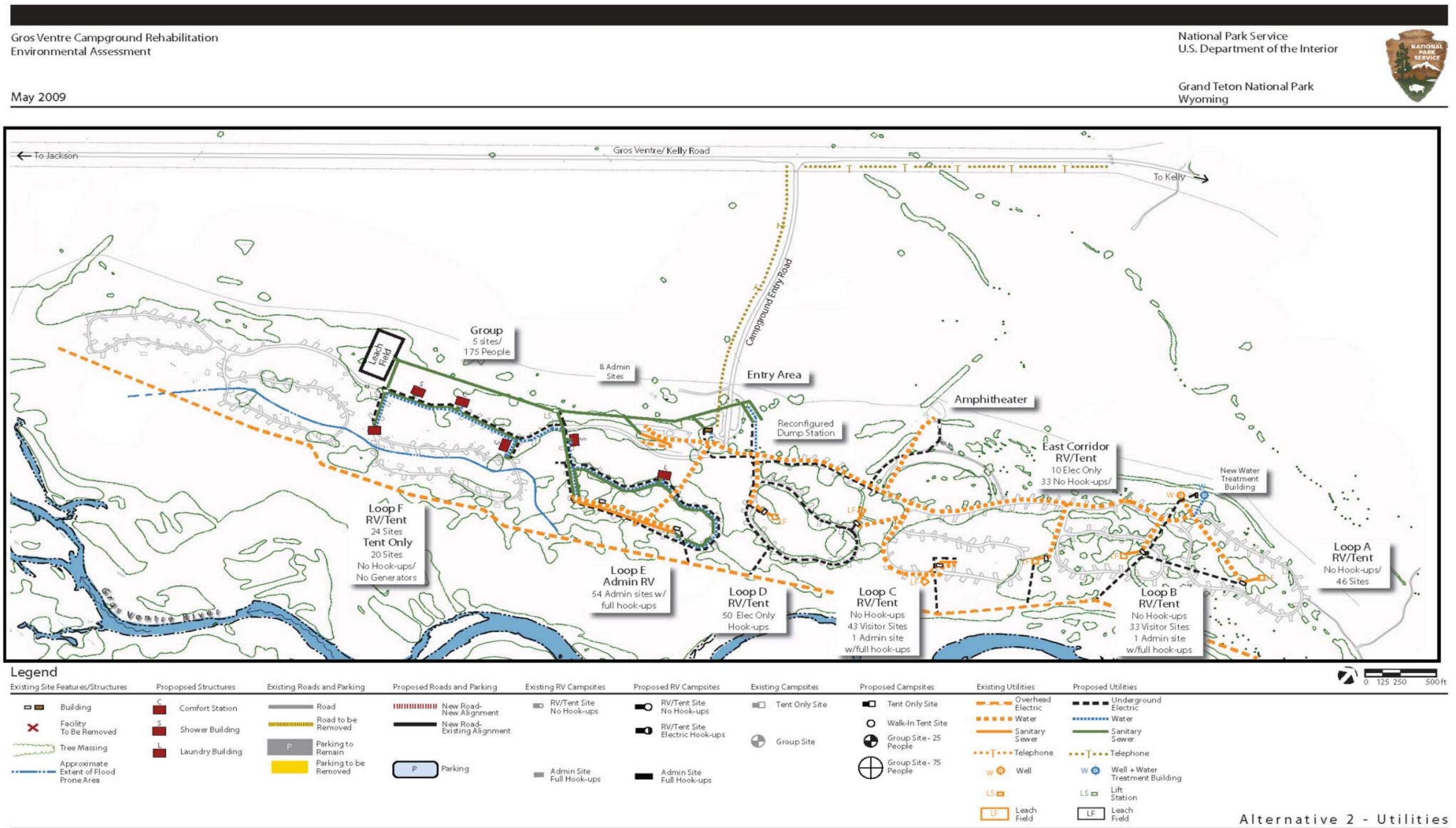


Figure 2.4b. Alternative 2 – Proposed Utility Locations throughout Gros Ventre Campground



2.5 ALTERNATIVES CONSIDERED BUT DISMISSED

The following alternatives were considered for project implementation, but were ultimately dismissed from further analysis. Reasons for their dismissal are provided in the following alternative descriptions.

Full Build-out of Gros Ventre Campground: This alternative would have provided 70 administrative use full-hookup sites and a group administrative site within two full loops. It would have also included systematic replacement of all water, wastewater, and electric lines and systems; separate shower/ laundry facilities for both visitors and employees; removal of comfort stations and RV sites from flood prone areas and replacement of all comfort stations with larger, Architectural Barriers Act compliant stations; development of upgraded camping spurs at every campsite; installation of both full and electric only hookups for visitors; construction of a new campground registration building; and construction of pedestrian connections along the corridor road and campground entry road. Preliminary design was projected to cost more than \$23 million and was dismissed due to the size and scope of the project and the scale of associated resource impacts.

Campground Closure or Relocation: The interdisciplinary team discussed closing the Gros Ventre Campground entirely and relocating the public camping sites and administrative sites elsewhere in the park. This would increase/enhance wildlife habitat (riparian resources and wildlife migration) as well as increase human safety by separating humans from wildlife and the floodplain. The team dismissed this alternative due to a variety of reasons, both from the visitor use and park operations standpoint.

With campground closure, there would be a loss of 385 campsites not only in Grand Teton National Park, but also in the Jackson Hole area. During mid-summer it may prove difficult for high numbers of visitors to find alternate camping in southern Jackson Hole. The park needs early season housing and/or RV parking in the southern portion of the park that the Gros Ventre Campground can provide. Being one of the southern-most campgrounds, it has the earliest opening, thus the longest season of the Grand Teton National Park campgrounds. It provides camping in the shoulder seasons when it is often difficult to find sites elsewhere in the county. Relocation of the campground elsewhere in the park would have required the disturbance of new areas, posing an impact to those areas.

The interdisciplinary team also discussed the possibility of not closing the campground even though there has been no visitor demand for year-round camping. Not closing the campground would create additional impacts to elk and bison migrations and critical moose habitat and winter range from an increase in dispersed use by humans; potential cumulative effects on elk and bison related to future reductions in feed grounds on the National Elk Refuge; human safety concerns from campground occupancy during the fall elk reduction program; effects on trumpeter swans and bald eagles from dispersed use of humans adjacent to the Gros Ventre River; park operation impacts on maintenance from additional need for snow removal and from utility problems related to operating systems not designed for year round use (e.g., freezing pipes); and adverse impacts to the park's contract with the concessioner by requiring operation of the campground during periods of low occupancy. Due to the wildlife and operational concerns, this option was not deemed a viable alternative and was dismissed from consideration in this Environmental Assessment.

2.6 MITIGATION MEASURES FOR ALTERNATIVE 2

Mitigation measures are designed to prevent or minimize adverse impacts or to contain impacts within acceptable limits during and after project implementation of Alternative 2. These mitigations and guidelines are specific to the project area and to the wildlife resource issues analyzed in this document.

CULTURAL RESOURCES

- All actions including mitigation, would require consultation with and clearance by the Wyoming State Historic Preservation Office under §106 of the National Historic Preservation Act.
- Should construction unearth previously undiscovered archaeological resources, work would be stopped in the area of any discovery, and the park would consult with the state historic preservation officer/tribal historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR Part 800.13, Post Review Discoveries. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- The National Park Service would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archaeological sites or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown archaeological resources are uncovered during construction. Equipment traffic would be minimized in the area of the site. Equipment and materials staging areas would also avoid known archaeological resources.

SOILS

- Excavated soil may be re-used in the construction project; excess soil will be stored in approved areas.
- Accepted erosion protection measures, such as sediment traps, erosion check screens/filters, jute mesh, and hydro mulch, would be used if necessary to prevent the loss of soil.
- Any fill materials will be obtained from a park-approved source and approved by the Park Ecologist.
- The contractors will control dust during construction by minimizing soil exposure, and watering and use of other dust prevention methods.
- To minimize soil erosion at the project site, standard erosion control measures including silt fence and sandbags would be incorporated into action alternatives. Any trenching operations will use a rock saw, backhoe, and/or trencher, with excavated material side-cast for storage. After trenching is complete, bedding material would be placed and compacted in the bottom of the trench and the utility lines installed in the bedding material. Back filling and compaction would begin immediately after the utility lines are placed into the trench and the trench

surface would be returned to pre-construction contours. All trenching restoration operations would follow guidelines approved by park staff. Compacted soils will be scarified and original contours reestablished.

- If construction is not complete prior to a winter season, all disturbed areas and soil stockpiles would be protected from snowmelt impacts by using erosion control best management practices and covering dirt piles with impermeable materials.

VEGETATION

- A Revegetation Plan will be developed for the project by park staff. The plan will incorporate, among other things, the use of native species, plant salvage potential, exotic vegetation and noxious weed management, and pedestrian barriers.
- Pre and post-project exotic plant monitoring will also be conducted in the project area. Noxious weed control measures will be implemented and a management plan for continual maintenance will be drafted to monitor and mitigate impacts within the first three years of construction.
- Existing populations of exotic vegetation at the construction site will be treated prior to the beginning of construction activities.
- In an effort to avoid introduction of exotic plant species, only certified weed-free materials will be used for erosion control. Any proposed materials will be reviewed on a case-by-case basis; allowable materials for erosion control may include: rice straw, straws or hay determined by National Park Service to be weed-free purchased from a certified source (e.g., Coors barley straw or Arizona winter wheat straw), cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales. Standard erosion control measures such as silt fences and/or sand bags may also be used to minimize soil erosion.
- The topsoil will be re-spread in as near as original location as possible, and supplemented with scarification, mulching, seeding, and/or planting with species native to the immediate area. Conserving topsoil would minimize vegetation impacts and potential compaction and erosion of bare soils. The use of conserved topsoil would help preserve micro-organisms and seeds of native plants.
- No vegetation shall be damaged or removed without prior approval via the project documents or by park vegetation management staff.
- Construction workers and supervisors will be provided with tree pruning guidelines. The adherence to these guidelines would minimize damage to trees during project implementation.
- All disturbed areas will be restored as nearly as possible to pre-construction conditions shortly after construction activities are completed. Revegetation efforts will be conducted to facilitate reconstruction of the natural spacing, abundance, and diversity of native plant species.
- Work limits, travel paths and staging areas will be designated and enforced to mitigate impacts to park vegetation. Fencing and barriers shall be used as necessary to restrict contractor operations to these areas.

- Construction should follow best practices for topsoil management, revegetation preparation and revegetation as outlined in the park ground disturbance guide.
- Disturbance zones, construction and staging areas will be fenced or clearly marked to prevent impacts to resources outside the approved construction limits.

WATER RESOURCES

- Accepted erosion protection measures, such as sediment traps, erosion check screens/filters, jute mesh, and hydro mulch, will be used if necessary to prevent the loss of soil.
- Fueling and fuel storage areas will be bermed and lined to contain spills. Provisions will be made (clay or plastic liners) for the containment and disposal of oil-soaked or contaminated soils. Construction equipment will be regularly inspected and maintained to prevent any fluid leaks. Contractors will promptly cleanup any leakage or accidental spills from construction equipment, such as hydraulic fluid, oil, fuel or antifreeze.
- When construction is ended prior to a winter season, all disturbed areas and soil stockpiles will be protected from snowmelt impacts.
- Wetland areas will be avoided when considering areas for construction re-routing and rehabilitation.
- Place new facilities carefully, as far from the main river as feasible and definitely outside of any side channels.

WILDLIFE

- Construction workers and supervisors will be informed about special status species within the work vicinity. Contract provisions will require the cessation of construction activities if a species were discovered in the project area, until park staff re-evaluates the project. This would allow modification of the contract for any protection measures determined necessary to protect the discovery.
- Under the Migratory Bird Treaty Act, no migratory bird, nest, or egg can be disturbed, removed or destroyed without formal consultation. To minimize the potential for “taking” a nest of any protected bird species, park resource managers will survey the site within a week before ground breaking activities commence to mitigate any potential issues in advance of site construction.
- All contractors, employees, and visitors would be trained and required to comply with the park’s bear management plan during construction and operation of the campground facilities. All project staff, trainees, and other personnel would be briefed about food storage needs, and bear safety protocols. Food, fuel, and other attractants will be stored and handled to minimize potential conflicts (i.e. no food, garbage, drink, trash, or food and drink containers are to be placed outside vehicles, trailers, or bear-resistant containers except during times when they are being used).
- Should bald eagle nesting occur within the project area, construction activity will be outside of a one-mile disturbance-free buffer zone around bald eagle nest

- sites. Monitoring of eagle populations to identify and protect nests would continue.
- Site cleanup will also minimize the likelihood of other animals investigating the area for water and scavenging and would reduce safety concerns related to people coming to the site for unlawful purposes after hours.
 - In addition to these general wildlife mitigation measures, wildlife mitigation measures specific to each of the alternatives are provided in the wildlife section of Chapter 3 of this document.

PARK OPERATIONS/VISITOR EXPERIENCE

- Contractors will coordinate with park staff to reduce the potential for disruption of normal park activities. Equipment will not be stored along the roadway overnight without prior approval of park staff. Construction workers and supervisors will be informed about the special sensitivity of park values, regulations, and appropriate housekeeping.
- To minimize the potential for impacts to campground visitors, variations on construction timing will be considered. Options include conducting the majority of the work when the campground is closed or shoulder seasons, limiting the amount of work conducted at any one time during the peak season and implementing daily construction activity curfews. Unless additional time is authorized by park management, operation of heavy construction equipment will not occur between the hours of 7 PM to 7 AM to minimize the impacts of noise from construction activities to campground visitors and the natural quiet.
- Traffic in any one direction would not be stopped for more than 15 minutes to minimize disruption of traffic flow during construction.
- Information regarding implementation of this project and other foreseeable future projects will be shared with the public upon their entry into the park (and campground) during construction periods. This may take the form of an informational brochure or flyer about the projects distributed at the gate, postings on the park's website, posters on the campground bulletin boards, press releases and/or other methods. The purpose of these efforts will be to minimize the potential for negative impacts to the visitor experience at the Gros Ventre Campground during the implementation of this project and other planned projects during the same construction season.

General Construction Best Management Practices

- The construction practices listed below are subject to changes and additions when Best Management Practices are used during construction to mitigate impacts to resources.
- To minimize the amount of ground disturbance, staging and stockpiling areas will be in previously disturbed sites, away from visitor use areas to the extent possible. All staging and stockpiling areas will be returned to pre-construction conditions following construction.
- Parking of construction vehicles will be limited to these staging area and existing

roads and previously disturbed areas.

- Construction zones will be identified and fenced with construction tape, snow fencing, or some similar material prior to any construction activity. The fencing will define the construction zone and confine activity to the minimum area required for construction. All protection measures will be clearly stated in the construction specifications and workers will be instructed to avoid conducting activities, including material staging and storage, beyond the construction zone as defined by the construction zone fencing.
- The storage, handling, and disposal of all hazardous material and waste will comply with applicable federal and state regulations. Provisions will be made for storage, containment, and disposal of hazardous materials used on site. To minimize possible petrochemical leaks from construction equipment construction equipment will be monitored frequently to identify and repair any leaks and will be staged in designed areas suitable to contain leaking materials. Trained personnel will clean up and dispose of any leakage or spill from construction equipment such as hydraulic fluid, oil, or fuel. Fueling and fuel storage areas will be permitted only at approved locations and comply with park re-fueling guidelines.
- Fueling and fuel storage areas will be bermed and lined to contain spills. Provisions will be made (clay or plastic liners) for the containment and disposal of oil-soaked or contaminated soils. Construction equipment will be regularly inspected and maintained to prevent any fluid leaks. Contractors will promptly cleanup any leakage or accidental spills from construction equipment, such as hydraulic fluid, oil, fuel or antifreeze.
- Dust generated by construction will be controlled by spraying water on the construction site, if necessary.
- To reduce noise and emissions, construction equipment will not be permitted to idle for long periods of time.
- All construction equipment that will leave the road will be pressure washed before entering the park.
- Contractor will partner with the National Park Service regarding impacts to visitor use during construction activities, while the campground is open to the public.
- The National Park Service will obtain federal and state environmental permits required for this project. As part of the permitting process, other agencies could require additional mitigating measures.

2.7 COMPARISON OF THE ALTERNATIVES

Table 2.7a. summarizes the major components of Alternatives 1 and 2, and compares the ability of the alternatives to meet the project objectives (the objectives for this project are identified in section 1.2 Purpose and Need). The summaries provided in Table 2.7a. demonstrate that Alternative 2 meets each of the objectives identified for this project, while the No Action Alternative does not address all of the objectives. Table 2.7b.

summarizes the anticipated environmental impacts for Alternatives 1 and 2. Only those impact topics that have been retained for detailed analysis in Chapter 3 are included in this table. Chapter 3, Affected Environment and Environmental Consequences provides a more detailed explanation of these impacts.

Table 2.7a. Comparison of Alternatives by the Project Objectives.

Comparison of Alternatives & Methods Used to Ensure Objectives Are Met		
OBJECTIVE	Alternative 1	Alternative 2
Upgrade and rehabilitate the critical infrastructure and utilities providing for sustainable and safe operations of the water, electric, and septic systems.	No. Continuing the existing conditions would not ensure continued safe water and waste water conditions in the campground, threatening public health and the environment should a major malfunction occur. Infrastructure remaining within the flood-prone areas is subject to system failures.	Yes. Upgrading and replacing infrastructure will assist in ensuring continued safe water and waste water conditions in the campground. Infrastructure will be removed from the flood-prone areas improving operational efficiency and alleviating the potential for river/groundwater contamination.
Establish the appropriate number of electrical RV sites in the campground to provide visitors a wider variety of experiences and ensure its operation is sustainable and financially feasible for the concessioner.	No. It does not provide a wide variety of experiences for the visiting public.	Yes. It will provide a wider variety of experiences for the visiting public, by providing the option of electric hookup campsites.
As required by law, upgrade several campsites and comfort stations to meet accessibility standards.	No. No facilities within the campground currently meet legal requirements of the Architectural Barriers and Americans with Disabilities Acts.	Yes. Facilities will be upgraded to meet legal requirements of the Architectural Barriers and Americans with Disabilities Acts.
Designate and design a portion of the campground for seasonal NPS, partner, and concessioner employee housing.	No. The No Action Alternative would not provide additional housing, resulting in continuation of the seasonal housing shortage for NPS.	Yes. Alternative 2 would provide additional housing for approximately 30 or more seasonal NPS, partner, and concessioner employees.
Removal of infrastructure from the flood prone areas, as well as reducing the footprint and impervious surface of the campground, resulting in fewer operational emergency actions and increased natural resource benefits.	No. No infrastructure would be removed from the flood prone areas. The campground will remain oversized and underutilized, in an area of prime wildlife habitat.	Yes. The removal of infrastructure from the flood prone areas, as well as reducing the overall footprint and impervious surface of the campground, would result in fewer operational emergency actions and increased natural resource benefits.

Table 2.7b. Comparison of Impacts by Alternatives

IMPACT TOPIC	Alternative 1 – No Action	Alternative 2- Campground Improvements & Restoration (Preferred Alternative)
Archaeological Resources	No direct or indirect impacts. Negligible to minor cumulative impacts provided continued consultation with associated tribal groups and the SHPO on future projects.	Direct and indirect impacts would be negligible. Cumulative impacts would be the same as Alternative 1.
Ethnographic Resources	No direct or indirect impacts. Negligible to minor cumulative impacts provided continued consultation with associated tribal groups and the SHPO on future projects.	Direct or indirect impacts would be negligible. Cumulative impacts would be the same as Alternative 1.
Soils	No direct, indirect, impacts. Overall adverse negligible to minor, long-term cumulative impacts to soils.	Beneficial and adverse, minor, and long-term direct and indirect impacts. Overall adverse, negligible to minor, long-term cumulative impacts.
Vegetation	Adverse, minor, and long-term direct and indirect impacts.	Net beneficial, minor, and long-term direct and indirect impacts.
Surface & Groundwater	Adverse, minor, long term direct and indirect impacts.	Beneficial long-term direct and indirect impacts.
Floodplains	Adverse minor, long term direct and indirect impacts.	Beneficial long-term direct and indirect impacts.
Wildlife	Adverse minor short- and long-term direct, indirect, and cumulative impacts. “May affect, but is not likely to adversely affect” gray wolves and Yellow-billed cuckoos.	Negligible direct, indirect, and cumulative impacts. “May affect, but is not likely to adversely affect” gray wolves and Yellow-billed cuckoos.
Park Operations and Partnerships	Adverse minor to moderate direct, indirect, and cumulative impacts to park operations.	Direct and indirect adverse and minor impacts in the short-term and beneficial, moderate impacts in the long-term. Overall adverse, minor to moderate long-term cumulative impacts.
Visitor Use and Experience (Including Public Health and Safety)	Adverse moderate and long-term direct and indirect impacts and negative contributions to overall beneficial moderate long-term cumulative impacts	Beneficial moderate and long-term direct and indirect impacts. Positive contributions to overall beneficial moderate long-term cumulative impacts.

2.8 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Council on Environmental Quality defines the environmentally preferred alternative as "...the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act's §101." Section 101 of the National Environmental Policy Act states that "... it is the continuing responsibility of the Federal Government to ...

- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources."

Implementation of the No Action Alternative would fail to move the National Park Service toward achievement of all six of the goals set forth by the Council on Environmental Quality in §101 of the National Environmental Policy Act. Failure to address aging infrastructure and facility issues would likely result in adverse effects to health, safety, and the natural environment. As such, trustee obligations for future generations would not be met (goal 1), nor would the assurance of safe, healthful, productive, and aesthetically and culturally pleasing surroundings (goal 2). The No Action Alternative would not attain the widest range of beneficial uses of the environment because underused portions of the campground located in areas of valuable wildlife habitat would not be restored, thereby maximizing beneficial uses (goal 3). In terms of goal 4, the No Action Alternative would not support the most diverse individual choices because of the limited mix of campsite uses and inaccessibility per the American Disabilities Act of 1965. For reasons already stated, as well as failure to address seasonal flooding of some campsites, the No Action Alternative would also fall short of achieving a balance between population and resource use that would permit high standards of living (goal 5). Finally, the No Action Alternative would also fall short of enhancing the quality of renewable resources and recycling depletable resources to the maximum extent practicable (goal 6) because such restoration and rehabilitation measures would not be implemented if current management conditions were to continue.

Alternative 2 meets goals 1, 2, and 3, by the concentration of the campground footprint and by the replacement of failing infrastructure, which if the systems failed, could cause health, safety, and/or environmental degradation. The preferred alternative also achieves

goals 4 and 5, as visitors would be able to enjoy heightened amenities, including electric hookups, the maintained character of a small campground, and the addition of facilities compliant with the American Disabilities Act. Alternative 2 would meet the sixth goal 6 by preventing wastewater dumping in non-designated areas, which has the potential to negatively affect streams and other waterways in the area.

After careful review of potential resource and visitor impacts, and developing proposed mitigation for impacts to natural and human environment, the environmentally preferred alternative is Alternative 2, the National Park Service preferred alternative. Overall, Alternative 2 (1) provides a high level of protection of natural and cultural resources while concurrently attaining the widest range of neutral and beneficial uses of the environment without degradation; (2) maintains an environment that supports diversity and variety of individual choice; and, (3) integrates resource protection with an appropriate range of visitor uses.

CHAPTER 3: AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

The Council on Environmental Quality requires that National Environmental Policy Act documents "succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration (1502.15)." Accordingly, this chapter describes the existing conditions of the biological, physical, cultural, and social resources that would be affected by the alternatives introduced in Chapter 2. This section contains the scientific and analytical foundation for comparison of the effects (the word "effect" is used interchangeably with "impact") of the alternatives, where the alternatives are designed to define issues and provide a clear basis of choice. Described are the possible impacts of each alternative on the natural, cultural and social environments, in accordance with the impact topics identified in the Impact Topics section (1.7). For each impact topic this section first explains the affected environment and the methodology used for impact analysis.

METHODOLOGY

The impact analysis and conclusions contained in this chapter were based on park staff knowledge of the resources and site; review of existing literature and park studies; information provided by resource specialists within the National Park Service and other agencies; and professional judgment.

In this section, the National Park Service takes a "hard look: at all potential impact topics by considering the direct, indirect, and cumulative effects of the proposed action on the environment, along with the connected and cumulative actions. Impacts are described in terms of context and duration. The context or extent of the impact is described as localized or widespread. The duration of impacts is described as short term, temporary effects typically confined to the construction period, or long-term, more permanent effects that would remain following construction. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The National Park Service equates "major" effects as "significant" effects under the terms of the National Environmental Policy Act. The identification of "major" impacts would trigger the need for an Environmental Impact Statement. Because definitions of intensity can vary by each impact topic, intensity definitions are provided separately for each impact topic analyzed in this EA.

CUMULATIVE IMPACT SCENARIO

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which result 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 can result from individually minor, but collectively significant actions, taking place over a period of time (40 CFR 1508.7). Cumulative impacts are considered for both the No Action and Preferred Alternatives through identifying the geographic area of analysis for each

resource as well as other ongoing or foreseeable future actions within the vicinity of the impact area.

The geographical boundary for a cumulative impact analysis changes depending on the resource topic. For most natural and cultural resources, the area of cumulative impact was the East Antelope Flats area, stretching from Gros Ventre Junction on Highway 26/89/191, north to Blacktail Butte, the National Elk Refuge to the south, the Gros Ventre River to the East, the Antelope Flats Road to Hunter Hereford Ranch Junction. The area of analysis for water resources was the Gros Ventre watershed. The area of analysis for wildlife and threatened, endangered and sensitive species varied by species. The area of analysis for park operations and visitor use and experience was the Park.

For this analysis, ongoing and reasonably foreseeable future recreation and development activities that are resource specific are identified under each impact topic. Given the geographical and temporal scope of the analysis, the following additional projects were identified for the purpose of making cumulative effects determinations:

Grand Teton National Park Transportation Plan Final Environmental Impact Statement (September 2006) and Record of Decision (March 2007) The transportation plan addressed the management of transportation-related issues within the park and proposed a multi-use pathway system in the park. The preferred alternative in the plan identifies a non-motorized and separated pathway along US Highway 26/89/191 outside of the road corridor from Jenny Lake south to the Gros Ventre River Bridge. There is also the potential for improved road shoulders from the Highway to the town of Kelly.

Bison and Elk Management Plan Final Environmental Impact Statement for the National Elk Refuge, Grand Teton National Park, and John D. Rockefeller, Jr. Memorial Parkway (February 2007) and Record of Decision (April 2007) The US Department of the Interior, US Fish and Wildlife Service and National Park Service developed the Bison and Elk Management Plan and final environmental impact statement for managing bison and elk herds within the National Elk Refuge and Grand Teton National Park. The Gros Ventre Campground Environmental Assessment considered the bison and elk management plan in cumulative impact analyses for several impact topics, particularly wildlife.

Laurance S. Rockefeller Preserve The Laurance S. Rockefeller Preserve is in the southwestern corner of Grand Teton National Park on the shore of Phelps Lake. The 1,106-acre preserve is one of the most pristine, scenic, and wildlife-rich areas in the park. The land was conveyed to the National Park Service by the Rockefellers in November 2007. Along with the conveyance, cabins from the property were donated to the park for use as employee housing in the Beaver Creek Area. These cabins displaced twelve seasonal RV sites within the park.

North Highway 89 Pathways Project Environmental Assessment, Teton County, Wyoming (February 2009) and Finding of No Significant Impact (March 2009) A segment of separated multi-use pathway will be constructed on National Elk Refuge land located along the east side of US Highway 26/89/191 from the Town of Jackson north to the Gros Ventre Bridge. This pathway will establish connectivity between Grand Teton National Park and Teton County, Wyoming trail networks.

UNACCEPTABLE IMPACTS AND IMPAIRMENT ANALYSIS METHOD

As described in Chapter 1, the National Park Service must prevent any activities that would impair park resources and values. The impact threshold at which impairment occurs is not always readily apparent. Therefore, the National Park Service applies a standard that offers greater assurance that impairment will not occur. This involves avoiding impacts that the National Park Service determines to be unacceptable; that is, they fall short of impairment, but are still not acceptable within a particular park's environment. Because park managers cannot allow uses that would cause unacceptable impacts, they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

By preventing unacceptable impacts, park managers ensure that the proposed use of park resource will not conflict with the conservation of those resources. In this manner, park managers ensure compliance with the Organic Act's separate mandate to conserve park resources and values.

Impacts to Cultural Resources and §106 of the National Historic Preservation Act

In this EA/ AEF, impacts to cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality that implement the National Environmental Policy Act. These impact analyses are intended, however, to comply with the requirements of both the National Environmental Policy Act and §106 of the National Historic Preservation Act. In accordance with the Advisory Council on Historic Preservation's regulations implementing §106 of the National Historic Preservation Act (36 CFR Part 800, Protection of Historic Properties), impacts to archeological resources and the cultural landscape were identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and (4) considering ways to avoid, minimize or mitigate adverse effects.

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

A §106 summary is included in the impact analysis sections under the Preferred Alternative. The §106 Summary is intended to meet the requirements of §106 and is an assessment of the effect of the undertaking (implementation of the alternative) on cultural resources, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

3.1 CULTURAL RESOURCES

AFFECTED ENVIRONMENT

DO-28: Cultural Resources Management Guidelines recognizes the management of 5 categories of cultural resources: (1) archeological resources, (2) cultural landscapes, (3) ethnographic resources, (4) historic structures, and (5) museum objects. All of these categories except archaeological and ethnographic resources were dismissed from detailed analysis as described in Chapter 1.

Archaeological Resources

Although less than 10 percent of the lands within Grand Teton National Park have been surveyed, previous archeological surveys within the park and on adjacent lands suggest a seasonal settlement pattern for the Jackson Hole area. The park's prehistoric sites represent a wide range of plant, animal, and stone procurement locations, seasonal camps, and plant processing features that represent more than 10,000 years of human use in Jackson Hole.

The Gros Ventre Campground was inventoried in 2000 by the University of Wyoming. To date, no prehistoric sites are known to exist within the project location; however, seven archaeological sites have been recorded less than one mile from the project area. Three of these sites have not been evaluated for the National Register of Historic Places and four have been classified as eligible for nomination to the National Register of Historic Places.

Ethnographic Resources

Ethnographic resources are defined by the National Park Service as any "site, structure, object, landscape, or natural resource feature assigned traditional, legendary, subsistence, or other significance in the cultural system of a group traditionally associated with it" (Cultural Resource Management Guidelines DO-28:191). The lands of Grand Teton National Park are associated with several American Indian groups including Blackfoot, Crow, Gros Ventre, Nez Perce, Northern Cheyenne, Northern Arapaho, Eastern Shoshone, and Shoshone -Bannock.

The Grand Teton area has long been of importance to native cultures and figures in the religious beliefs and ceremonial practices of many groups. Although ethnographic resources significant to American Indians may be present in the vicinity of Gros Ventre Campground, no ethnographic resources are known to exist within the proposed project area. Consultation with associated tribes is ongoing and copies of this EA are to be forwarded to each tribe for review and comment. Should any of the tribes subsequently identify the presence of additional ethnographic resources within the project area, appropriate mitigation measures would be undertaken in consultation with the tribes.

ENVIRONMENTAL CONSEQUENCES

Methodology

Section 106 of the National Historic Preservation Act requires a federal agency to take into account the effects of its undertakings on properties included in, eligible for inclusion in, or potentially eligible for inclusion in the National Register of Historic Places, and afford the following a reasonable opportunity to comment on such undertakings: the State Historic Preservation Officer, affiliated American Indian tribes

and, as appropriate, the Advisory Council on Historic Preservation, individuals and organizations with a demonstrated interest in the undertaking, and the general public.

In accordance with the Advisory Council on Historic Preservation's regulations implementing §106 of the National Historic Preservation Act (36 CFR Part 800, Protection of Historic Properties), impacts to cultural resources were identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the Area of Potential Effect that are either listed in or eligible to be listed in the National Register of Historic Places (categorized as "historic properties"); (3) applying the criteria of adverse effects to affected historic properties; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council on Historic Preservation's regulations, a determination of either adverse effect or no adverse effect is made for affected historic properties. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a property that qualifies it for inclusion in the National Register of Historic Places, i.e., diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of no adverse effect means that the property may be affected, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register of Historic Places.

Archaeological Resources

Direct impacts to archaeological resources are measured by the data potential of an archaeological site and the extent of physical disturbance or degradation of the resource. Disturbance or degradation can occur as a result of grading, trenching, or other activities that damage the structure of an archeological site.

Indirect impacts can occur as a result of increasing visitor activity or management action in the immediate vicinity, leading to unfortunate consequences such as artifact collection, accelerated soil compaction, and erosion.

Proposed campground improvement areas were located on a base sheet provided by park staff, which identified known archeological resources and the completeness and adequacy of related survey data. It should be noted that this analysis only considers known archeological sites. The project area was inventoried in 2000 by the University of Wyoming. No Archaeological sites were identified within the proposed project area.

Every effort will be made to avoid historic properties (i.e., those archeological site listed on or considered eligible for listing in the National Register of Historic Places) through careful project design and subsequent site-specific environmental compliance. If sites cannot be avoided, all data recovery to retrieve important information will be done in consultation with the Wyoming State Historic Preservation Office and in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

Impact Threshold Definitions

- Negligible:* Impact is barely measurable and has no perceptible consequences, either adverse or beneficial to archaeological resources. For purposes of §106, the determination of effect would be no historic properties affected.
- Minor:* Adverse – Disturbance impacts would be perceptible and measurable, and would remain localized and confined to archeological site(s) with low to moderate data potential. The determination of effect for §106 would be no adverse effect.
- Beneficial - Maintenance and preservation of a site(s). The determination of effect for §106 would be no historic properties affected.
- Moderate:* Adverse - Disturbance impacts would be sufficient to cause a noticeable change, and would generally involve one or more archeological sites with moderate to high data potential. Section 106 effect determination would be adverse effect. A Memorandum of Agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Properties in accordance with 36 CFR 800.6(b). Measures identified in the Memorandum of Agreement to minimize or mitigate adverse impacts reduce the intensity of impact under the National Environmental Policy Act is from major to moderate.
- Beneficial - Stabilization of a site(s). The determination of effect for §106 would be no historic properties affected.
- Major:* Adverse - Disturbance impacts would result in substantial and highly noticeable changes, involving archeological site(s) with high data potential. The determination of effect for §106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council on Historic Properties are unable to negotiate and execute an Memorandum of Agreement in accordance with 36 CFR 800.6(b).
- Beneficial - Active intervention to preserve a site(s). The determination of effect for § 106 would be no historic properties affected.

Decision Making (DO-12) also calls for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, i.e., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under National Environmental Policy Act only. It does not suggest that the level of effect as defined by §106 is similarly reduced. Although adverse effects under §106 may be mitigated, the effect remains adverse.

Effects of Alternative 1 – No Action Alternative on Archaeological Resources

Direct/Indirect Impacts: Under the No Action Alternative, no improvements would occur and there would be no effect to archaeological resources. Any archaeological resources that may be present in the area would be preserved and protected in situ under this alternative.

Cumulative Impacts: Past development of park facilities has likely impacted archaeological resources. Loss or disturbance of sites within the park (in conjunction with previous losses and prevailing threats to finite numbers of archaeological resources throughout the region) incrementally diminishes the overall understanding of Grand Teton's cultural history. Continued consultation with associated tribal groups and the State Historic Preservation Officer on future projects would ensure that any adverse effects of future projects on cultural resources would be negligible to minor.

Conclusion: Because the proposed project area has been inventoried and no archaeological resources were located within the project area, there would be no direct or indirect impacts and negligible to minor cumulative impacts to archaeological resources under Alternative 1. There would be no unacceptable impacts or impairment to archeological resources since implementing the No Action Alternative would have no direct or indirect impacts to archeological resources.

Effects of Alternative 2 – Action Alternative (Preferred) on Archaeological Resources

Direct/Indirect Impacts: Because no archaeological resources have been identified within the proposed project area, there would be no direct or indirect impacts associated with implementation of Alternative 2.

Cumulative Impacts: Cumulative impacts from implementation of Alternative 2 when combined with past and future actions would be the same as those described for Alternative 1.

Conclusion: Because the proposed project area has been inventoried and no archaeological resources were located within the project area, there would be no direct or indirect impacts associated with the implementation of Alternative 2. Cumulative impacts to archaeological resources would be negligible to minor. There would be no unacceptable impacts or impairment to archeological resources since implementing the Preferred Alternative would have no direct or indirect impacts to archeological resources.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that the implementation of Alternative 1 or Alternative 2 would result in a "no historic properties affected" determination.

Ethnographic Resources

Certain important questions about human culture and history can only be answered by gathering information about the cultural content and context of cultural resources. Questions about contemporary peoples or groups, their identity, and heritage have the potential to be addressed through ethnographic resources. As defined by the National

Park Service, an ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, substance, or other significance in the cultural system of a group traditionally associated with it. Some such specific places of traditional culture may be eligible for inclusion in the National Register of Historic Places if they meet national register criteria for traditional cultural properties. For the purposes of analyzing potential impacts to ethnographic resources, the thresholds of change for the intensity of an impact are defined below.

Impact Threshold Definitions

Negligible: Impacts would be at the lowest levels of detection and barely perceptible. Impacts would neither alter resource conditions, such as traditional access or site preservation, nor alter the relationship between the resource and the affiliated group's body of practices and beliefs. For purposes of §106, the determination of effect on traditional cultural properties would be no historic properties affected.

Minor: Adverse - Impact(s) would be slight but noticeable and would neither appreciably alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of beliefs and practices. For the purposes of §106, the determination of effect on traditional cultural properties would be no historic properties affected.

Beneficial - Impacts would allow traditional access and/or accommodate a group's traditional practices or beliefs. For § 106, the determination of effect would be no historic properties affected.

Moderate: Adverse-Impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's beliefs and practices, even though the group's beliefs and practices would survive. For the purposes of §106, the determination of effect on traditional cultural properties would be an adverse effect.

Beneficial - Impact would facilitate a group's beliefs and practices. For the purposes of §106, the determination of effect on traditional cultural properties would be no historic properties affected.

Major: Adverse- Impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices, to the extent that the survival of the group's beliefs and/or practices would be jeopardized. For the purposes of §106, the determination of effect on traditional cultural properties would be adverse effect.

Beneficial- Impact would encourage a group's beliefs or practices. For the purposes of §106, the determination of effect on traditional cultural properties would be no historic properties affected.

Decision Making (DO-12) also calls for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, i.e., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under National Environmental Policy Act only. It does not suggest that the level of effect as defined by §106 is similarly reduced. Although adverse effects under § 106 may be mitigated, the effect remains adverse.

Effects of Alternative 1 – No Action Alternative on Ethnographic Resources

Direct/Indirect Impacts: Under the No Action Alternative, no improvements would occur; therefore there would be no direct or indirect impacts to ethnographic resources. Any ethnographic resources that may be present in the area would be preserved and protected in situ under this alternative.

Cumulative Impacts: Past development of park facilities has likely impacted ethnographic resources. Loss or disturbance of resources within the park (in conjunction with previous losses and prevailing threats to finite numbers of ethnographic resources throughout the region) incrementally diminishes the overall understanding of Grand Teton's cultural history. Continued consultation with associated tribal groups and the State Historic Preservation Officer, on future projects would ensure that any adverse effects of future projects on cultural resources would be negligible to minor.

Conclusion: The No Action Alternative would have no direct and indirect impacts to ethnographic resources and negligible to minor cumulative effects to ethnographic resources. There would be no unacceptable impacts or impairment to ethnographic resources since implementing the No Action Alternative would have no direct or indirect impacts to ethnographic resources.

Effects of Alternative 2 – Action Alternative (Preferred) on Ethnographic Resources

Direct/Indirect Impacts: Ethnographic resources have not been identified within the proposed project area, impacts would be negligible with the implementation of Alternative 2.

Cumulative Impacts: Cumulative impacts from implementation of Alternative 2 when combined with past and future actions would be the same as those described for Alternative 1.

Conclusion: Because the proposed project area is minimal compared to the acreage of the entire park, any ethnographic resources likely to occur inside the project area would also occur outside the project area. Under Alternative 2 there would be negligible direct, indirect impacts and negligible to minor cumulative impacts to ethnographic resources. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under "Methods for Analyzing Impacts," Alternative 2 would not result in any unacceptable impacts on ethnographic resources. The effects on ethnographic resources under this alternative would not be unacceptable because the potential impacts, which are adverse, are anticipated to be only negligible to minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur.

Because no unacceptable conditions would result, there would be no impairment of ethnographic resources (by definition, impairment is worse than unacceptable impacts) under this alternative.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), the NPS concludes that the implementation of Alternative 1 or Alternative 2 would result in a "no historic properties affected" determination. Since tribal consultation is ongoing, copies of the EA would still be forwarded to each tribe for review and comment.

3.2 SOILS

AFFECTED ENVIRONMENT

The soils in the Gros Ventre Campground derive mostly from cobbly, sandy material deposited by retreating glaciers approximately 12,000 years ago. Since the end of glaciation, biological, physical and chemical activity has worked together to gradually build the uppermost soil layers in existence today. Soils are defined by their physical attributes but are made biologically functional by a complex assemblage of invertebrates, fungi, algae, bacteria and vegetation. A disruption or loss of any of these physical or biological components can adversely affect soil function. Due to short growing seasons and a cool-to-cold climate, soils within the campground are generally thin and easily damaged.

The Natural Resource Conservation Service mapped the soils within the Park in 1970–1974 and published the soil survey in 1982. Soil names and descriptions proceed from this publication. Four main soil units exist within the Gros Ventre Campground (Table 3.2.) The four soils are derived from two series: Tetonville and Tineman.

Tetonville soils are found on floodplains and terraces. They are formed in alluvium. Tetonville soils are Entisols and as such show very little soil development. They have a thin mantle of fine, sandy loam in the upper 8 inches, but beyond eight inches, they are extremely gravelly loamy sand. By volume, Tetonville soils consist of more gravel and cobble than fine material. These soils can have a shallow water table in the months of May and June and are prone to flooding. However, the erosion potential from these soils is slight. Vegetation supported by Tetonville soils can be quite diverse, ranging from wetland vegetation, riverine forest, to upland shrub steppe.

Tineman soils are usually very deep well drained soils formed by alluvium and glacial deposits. Tineman soils are Mollisols and reflect a greater degree of soil layer development and maturity. The upper layers of the soil (down to 27") are brownish, gravelly loams. Beyond 27", the soil consists of extremely gravelly sand. Tineman soils do not have the same shallow water table as the Tetonville soils, but during high-water, the table may be as shallow as 36". Like, Tetonville soils, the Tineman soils are consist of more gravel and cobble than fine material. Again, erosion potential is slight. Tineman soils generally support upland grassland and shrubland vegetation, except in depressions or low points that collect water. In these areas, wetland species may be present.

Table 3.2. Description of Soil Survey Mapping Units within the Project Area.

Soil Unit	Description	Location
Tetonville gravelly loam	Very deep, somewhat poorly drained soil. Formed from alluvium	Southwest camp loops.
Tetonville-Riverwash complex	Very deep somewhat poorly drained soils formed in alluvium. Found on floodplains of Snake and Gros Ventre rivers.	Northwest camp loops.
Tineman gravelly loam	Very deep, well drained soil along the Snake River. Formed of gravelly alluvium.	North portions of campground
Tineman association	Very deep well drained soil formed in alluvium.	Near amphitheater

ENVIRONMENTAL CONSEQUENCES

Methodology

The baseline information used to assess impacts to soil resources is as described in the methodology section at the beginning of this chapter and includes park staff knowledge of the resources and site; review of existing literature and park studies; information provided by specialists within the National Park Service and other agencies; and professional judgment. Additional sources of information on soil resources used as a basis for this evaluation are as described above in the affected environment section.

Impact Threshold Definitions

Negligible: A change to soil that is not measurable or perceptible.

Minor: A measurable or perceptible, small localized change to the soil resource. The change is of little consequence.

Moderate: A change to soil or water resources that is measurable and of consequence but is localized.

Major: A measurable change to the soil resource that is large and/ or widespread and could have permanent consequences for the resource.

Effects of Alternative 1 – No Action Alternative on Soils

Direct/Indirect Impacts: Soils within the Gros Ventre campground have been previously impacted by the original construction, and continue to be disturbed through visitor and administrative use. These disturbances have been local, adverse, minor and long-term. Because Alternative 1 involves no construction activity, no additional effects to soil are expected. However, under Alternative 1, two loops of the campground would remain open and functioning. Consequently, this alternative would not provide any long-term, beneficial effect from impermeable surface removal and site rehabilitation.

Cumulative Impacts: Continued use of the campground under Alternative 1, combined with other activities in the area including construction of the mixed-use pathway south

of the Gros Ventre river, and the continued construction in, and use of the town of Kelly, Wyoming would result in overall adverse negligible to minor, long-term cumulative impacts to soils. The incremental contribution of Alternative 1 to these cumulative soil impacts would be negligible.

Conclusion: There would be no direct or indirect impacts to soil resources under Alternative 1. The relative contribution of Alternative 1 to cumulative impacts to soils would be negligible; overall cumulative impacts to soils would be adverse and negligible to minor in intensity. There would be no unacceptable impacts or impairment to soils since implementing the No Action Alternative would have no direct or indirect soil impacts.

Effects of Alternative 2 –Action Alternative (Preferred) on Soils

Direct/Indirect Impacts: Implementing alternative 2 would have both adverse and beneficial consequences for soil resources. The construction disturbance associated with campsite, water and sewer improvements would result in at approximately 5.9 acres of new disturbance. This disturbance can be expected to result in soil loss through erosion and soil compaction for a minimum duration of 3 years. Soil loss and compaction would affect some soil functions including, water infiltration, microbial support for vascular plants, carbon storage and habitat for soil invertebrates and small mammals. The effect of this disturbance can be mitigated to some degree by placing all new disturbances in areas within or adjacent to existing disturbed areas. Further, new disturbances would be reseeded, which should prevent future soil erosion from occurring. It is estimated that restoration of soil function in these impacted areas would take several decades. New ground disturbing activities under Alternative 2 would result in site specific, adverse, minor, long-term effects.

Restoration of loops F and G, and amphitheater the parking lot reduction would result in the removal of 3.0 acres of pavement and the reclamation of an additional 5.0 acres of disturbed ground. Camp site closure and reclamation would beneficially affect some 8.0 acres for the long-term and would create a net benefit of 2.1 acres to soil resources. This would have a localized, beneficial, minor, long-term effect on soil resources. However, these newly reclaimed areas would not regain function and characteristics similar to nearby undisturbed soil for many decades.

Resultant direct and indirect impacts of Alternative 1 on soils would be beneficial and adverse, minor, and long-term.

Cumulative Impacts: Current and future ground-disturbing activities within the area of analysis include administrative and visitor use of the Gros Ventre campground, ground-disturbing activities associated with Alternative 2, continued light construction in, and the occupation of Kelly, Wyoming, and the construction of a multi-use pathway from the Gros Ventre river to Jackson, Wyoming. All of these activities would result in adverse, long term, localized impacts through soil erosion and compaction. Removing and rehabilitating the two campground loops under Alternative 2 would have a beneficial, minor and long-term effect on soils within the project area. Generally speaking, the soils contained within the project area are well represented throughout both the area of analysis and Grand Teton National Park.

Conclusion: There would be beneficial and adverse, minor, and long-term direct and

indirect impacts to soil resources under Alternative 2. The relative contribution of Alternative 2 to cumulative impacts to soils would be negligible. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on soils. The effects on soils under this alternative would not be unacceptable because the potential beneficial and adverse impacts are anticipated to be only negligible to minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of soils (by definition, impairment is worse than unacceptable impacts) under this alternative.

3.3 VEGETATION

AFFECTED ENVIRONMENT

The Gros Ventre Campground encompasses approximately 170 acres. The campground is situated on a flat to southward sloping river terrace above the Gros Ventre River. Portions of the campground infrastructure are on two terraces which lie topographically above the main terrace on which the campsites are located. These upper terraces are dominated by shrub-steppe vegetation. Two plant communities dominate the campground. These are the cottonwood and sagebrush vegetation types. For the most part these are distinct communities, but there is an ecotone where the two intermingle.

The cottonwood woodland is dominated by *Populus angustifolia*. Other tree species found in trace amounts include *Picea pungens*, *Juniperus scopulorum*, *Pinus contorta*, and *Pseudotsuga menziesii*. The shrub layer is dominated by *Rosa woodsii* and *Shepherdia canadensis*, with *Lonicera involucrata*, *Betula glandulosa*, *Eleagnus commutata*, *Dasiphora floribunda*, and *Salix spp* on more mesic portions of the site. The herbaceous layer is dominated by non-native grasses, including *Poa compressa* and *Bromus inermis*. Other common, but not dominant, species include: *Erigeron compositus*, *Geum triflorum*, *Medicago sativa*, *Senecio fremontii*, and *Artemisia dracuncululus*. Moister microsites host forbs including *Maianthemum stellatum*, *Equisetum laevigatum*, *Epilobium angustifolium*, *Carex microptera* and *Solidago canadensis*.

The sagebrush communities are dominated by *Artemisia tridentata* var. *vaseyana*. Other shrubs that occur here include *Purshia tridentata*, *Symphoricarpos oreophilus*, and *Chrysothamnus nauseosus*, all of which occur in patches. The understory is dominated by *Poa compressa* with species including *Festuca idahoensis*, *Poa secunda*, *Eriogonum umbellatum*, *Opuntia fragilis*, *Balsamorhiza sagittata*, *Sedum lanceolatum*, *Elymus lanceolatus*, *Koeleria macrantha*, and *Comandra umbellatum* also commonly present.

The campground is host to a myriad of invasive plants, of which seven are listed as noxious weeds in the state of Wyoming, and in Teton County (a complete list is provided in Appendix B). These species, as well as *Bromus tectorum*, common name cheatgrass, are actively managed in Grand Teton National Park.

No state-listed species of management concern have been found on the site, though *Lesquerella paysonii* is located within a mile radius. The site it is found on is on a higher terrace than the campground. The campground has been surveyed for sensitive plants, as well as specifically for Ute lady's tress (*Spiranthes diluvialis*), with no evidence of the presence of it or any other sensitive plant species.

Exotic Plant Management

Non-native species, also referred to as exotic or invasive, are not a natural component of the ecosystem. Management of populations of exotic plant and animal species, up to and including eradication, would be undertaken wherever such species threaten park resources or public health and when control is prudent and feasible. Executive Order 13122 states that federal agencies are to prevent the introduction of invasive species, provide for their control, provide for restoration of native species and habitat conditions in ecosystems that have been invaded, and minimize the economic, ecological, and human health impacts that invasive species cause.

Noxious weeds primarily occur along roadsides and trails, in developed areas and in other disturbed areas, including campgrounds, construction sites, gravel pits, and recently burned areas within the park. Roadsides are uniquely vulnerable to invasions by nonnative species because of continual disturbance resulting from maintenance activities, vehicular traffic, and runoff, as well as the roadway corridor acting as a vector for the spread of invasive species. The primary means of noxious weed spread include vehicles, wind, horses, wildlife, and humans (S. Haynes 2002, pers. comm.). Trails and campgrounds are also susceptible to weed infestations since seeds are easily carried and dispersed on shoes, socks, clothing, and pets. Weeds such as spotted knapweed (*Centaurea maculosa*), Russian knapweed (*Acroptilon repens*), Dyer's woad (*Isatis tinctoria*), Dalmatian toadflax (*Linariadalmatica*), yellow toadflax (*Linaria vulgaris*), marsh sowthistle (*Sonchus arvensis* ssp. *uliginosus*), sulfur cinquefoil (*Potentilla recta*), perennial pepperweed (*Lepidium latifolium*), and leafy spurge (*Euphorbia esula*) are considered the park's most invasive and difficult to control. All are adept at colonizing disturbed dry sites, often out-competing native vegetation and, in some cases, spreading into undisturbed areas. Other invasive species common within the park include musk thistle (*Carduus nutans*), bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), oxeye daisy (*Leucanthemum vulgare*), orange hawkweed (*Hieracium aurantiacum*), common tansy (*Tanacetum vulgare*), St. Johnswort (*Hypericum perforatum*), houndstongue (*Cynoglossum officinale*), woolly mullein (*Verbascum thapsus*), and cheatgrass (*Bromus tectorum*).

The Gros Ventre Campground is in the midst of the park's largest infestation of spotted knapweed, requiring active treatment twice annually to prevent further infestation of the sensitive riparian habitat adjacent to the campground. Active treatment of eight noxious weed species has been ongoing in the campground for the past decade. Additional species, including Dalmatian toadflax and perennial pepperweed are located nearby and pose a risk to vegetation in the campground and its surroundings. Exotic plants at this site were inventoried in 2001, and again in 2005. A total of 28 new infestations were found during the 2005 survey. Most previously mapped populations are persistent, though some are diminished in size. Disturbances associated with the proposed campground rehabilitation are likely to exacerbate exotic species problems. These impacts can be mitigated somewhat through the use of practices including washing of vehicles before they enter the site and when they leave; minimizing ground disturbance, which creates openings for weed infestations; and pre-and post- disturbance weed treatments to decrease seed availability and dispersal.

ENVIRONMENTAL CONSEQUENCES

Methodology

Vegetation surveys of the Gros Ventre Campground were conducted in 2005. These surveys included a survey for rare and sensitive plant species, a survey of wetland species indicators, an invasive plant survey and a cottonwood survey, which included size and distribution data for deriving the number of cottonwood trees per acre in different areas of the campground. No rare or sensitive plant species were located within the project site. The presence of a limited number of native wetland species was observed; however, other wetland indicators were not present, which confirmed that there are no wetlands present within the project area. The exotic plant survey was used to update the previous exotic plant mapping which had been conducted as part of a 2001 inventory.

Physical disturbances associated with the alternatives are compared to the existing vegetation as mapped on the park's vegetation map, and as reflected in the vegetation surveys, to determine the impact of the proposed alternatives on park vegetation resources.

Impact Threshold Definitions

- Negligible:* Impact is barely measurable and has no perceptible consequences, either adverse or beneficial to the park's vegetation resources.
- Minor:* A measureable or perceptible localized change to the vegetation resources. The change is to a small portion of the parkwide vegetation resources and does not include sensitive, rare, threatened, or endangered plant species or communities.
- Moderate:* A measureable change to local vegetation resources which could have permanent consequences for local vegetative resources, or small portions of sensitive or rare species populations.
- Major:* A measurable change to the vegetation resources with is large and/or widespread. This measurable change could have permanent consequences for vegetation resources, species or communities, through a substantial portion of their range.

Effects of Alternative 1 – No Action Alternative on Vegetation

Direct/Indirect Impacts: Under the No Action Alternative no improvements within the Gros Ventre Campground would occur. Vegetation resources would continue to be impacted by visitor use, including social trailing resulting in trampling of vegetation, human-induced spread of invasive plant species resulting from repeated introduction of propagules, and ground disturbance, which enables the establishment of exotic invasive plants. The continued use of the campground without improvements would result in the continuation of these impacts which are adverse, minor, and long-term.

Cumulative effects: Continued use of the campground per Alternative 1, combined with

other activities in the area including recreational use of the river and roadway corridors, construction in and occupation of the nearby town of Kelly, construction of a multi-use pathway along Highway 89 and visitor traffic to the Mormon Row Historic District would continue the pattern of invasive species infestation and re-infestation of disturbed sagebrush and cottonwood plant communities. These impacts would not be made worse by Alternative 1 and would, to some extent, be mitigated by the on-going, long-term restoration of 4,500 acres of exotic agronomic grassland to native shrub-steppe vegetation. Under Alternative 1 there would be negligible cumulative impacts- this alternative does not substantively affect cumulative impacts to the area, which include the presence of vectors for noxious weed spread (adverse minor) and the restoration of native plant communities to abandoned agricultural lands (beneficial minor to moderate effect).

Conclusion: Under Alternative 1 there would be adverse, minor, and long-term direct and indirect impacts to vegetation and adverse and beneficial minor to moderate cumulative impacts to vegetation. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 1 would not result in any unacceptable impacts on vegetation. The effects on vegetation under this alternative would not be unacceptable because the potential adverse and beneficial impacts are anticipated to be only negligible to moderate in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of vegetation (by definition, impairment is worse than unacceptable impacts) under this alternative.

Effects of Alternative 2 –Action Alternative (Preferred) on Vegetation

Direct/Indirect Impacts: This alternative includes a number of activities that would impact vegetation resources in different ways. The alternative includes wastewater infrastructure improvements, including construction of a new leach field, construction access to the leach field, pipe installation and expansion of an RV dump station. Water, electric and sewer line installations would occur in loop E, electric line only trenching would occur in loop D. Proposed construction activities include the replacement of four comfort stations, with the new locations outside of the flood prone areas, a new well house, and changes in campsite configurations in loops E and F. Roadways, and campsites on the West side of the campground would be closed permanently and restored to native vegetation, as would half of the current amphitheater parking lot.

The combined infrastructure improvements would remove 35 percent of the mature cottonwood trees from loop E without replacement. Limited, but existent, cottonwood regeneration is present in loop E. Vegetation resources would be impacted by construction, but revegetated, on 2.71 acres. Campsite, roadway, parking and infrastructure removal would result in 7.20 acres of previously developed areas being planted to native vegetation. Vegetation would be permanently removed on 0.52 acres. Vegetation removal and replacement with campground infrastructure would have local, moderate, long-term adverse effects. Vegetation impacted but revegetated would have short term adverse minor effects, caused by a short term lack of vegetation on these sites and the potential for invasive species expansion in disturbed areas. Removal of infrastructure and revegetation of 7.20 acres would have minor, long-term, beneficial effects. The combined impacts of Alternative 2 on vegetation resources would result in adverse, minor, short-term effects, and beneficial, minor long-term effects. These

impacts would result in net beneficial, minor, and long-term effects which would begin to be realized 5–15 years following completion of the project.

Cumulative Effects: Under Alternative 2 there would be beneficial minor cumulative effects - this alternative provides long-term beneficial impacts to the cumulative effects analysis, which also include activities within the area that increase the presence of vectors for noxious weed spread (adverse minor) and the restoration of native plant communities to abandoned agricultural lands (beneficial minor to moderate effect).

Conclusion: Under Alternative 2, the combined impacts of Alternative 2 on vegetation resources would result in adverse, minor, short-term effects, and beneficial, minor long-term effects. These impacts would result in net beneficial, minor, and long-term effects which would begin to be realized 5–15 years following completion of the project. Overall cumulative impacts would be beneficial and minor. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on vegetation. The effects on vegetation under this alternative would not be unacceptable because the potential beneficial and adverse impacts are anticipated to be minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of vegetation (by definition, impairment is worse than unacceptable impacts) under this alternative.

3.4 WATER RESOURCES (SURFACE, GROUNDWATER & FLOODPLAINS)

AFFECTED ENVIRONMENT

Surface and Groundwater

The Gros Ventre River is a cobble-bed mountain river with a drainage area of 683 square miles. Elevations in the Gros Ventre watershed range from over 10,000 ft in the Gros Ventre mountains in the Bridger-Teton National Forest to about 6,200 ft at the river’s confluence with the Snake River. The lower Gros Ventre River has a severely braided, wide and shallow channel. Sand, cobble, gravel and non-cohesive soils, as well as sparse riparian vegetation make the river banks non-resistant, which facilitates susceptibility to bank sloughing and erosion. The State of Wyoming has designated this river as a Class 1 – Outstanding Resource Water. This designation conveys the highest level of protection available under the auspices of the Clean Water Act – no further degradation is allowed. Water quality of the Gros Ventre River is being monitored at several locations by the Greater Yellowstone Inventory and Monitoring Network as part of their long-term monitoring program. The monitoring program has not detected any exceedance in state or national water quality standards.

The mean annual hydrograph of the Gros Venter River at Kelly, Wyoming (upstream of the Gros Ventre Campground) is typical of a drainage basin dominated by snowmelt runoff processes. On average, peak flows occur in the late spring or early summer coincident with the timing of peak spring melt. Daily mean discharge records (as measured at the USGS gaging station at Kelly, Wyoming, for water years 1944-1958) reveal an average discharge of 474 cubic feet per second (cfs), with low flows around 100

cfs. A maximum daily mean discharge of 5,000 cfs was recorded in June of 1956. Gros Ventre River flows can be considerably affected by water withdrawals due to the numerous irrigation diversions which exist both above and below the project area.

Ground water is recharged by infiltration of precipitation, stream flow leakage, irrigation water and inflow from other aquifers. Groundwater along the river is near (<15 ft) the surface. The water quality of the alluvial valley aquifer is excellent, and therefore supports utilization for drinking water supplies, recreation, and other commercial uses. Much of the aquifer exhibits high permeability and substantial interconnection to the rivers and lakes, making it vulnerable to contamination from the facilities, visitor use, and transportation corridors that exist in the recharge areas. Two groundwater wells are located and monitored at the Gros Ventre Campground. A hydrologic study of the lower Gros Ventre River was conducted in October, 2008. This study was designed to determine which reaches of the Gros Ventre are gaining (gain water from surrounding area) and which are losing (lose water to surrounding area). The project reach was determined to be an area where there are no net losses or gains to the system, but it is an area of substantial interchange with groundwater systems (personal communication, Gwen Gerber, NPS Water Rights Division, Ft. Collins, CO).

Floodplains

The Gros Ventre Campground is located in an overbank area with many side channels and former main channels of the Gros Ventre River. The river channel itself, in this reach, is braided and occupies a wide and complex network of channels with very dynamic behavior related to sediment transport and occurrence of woody debris. This type of environment is difficult to hydraulically model and, therefore, difficult to determine meaningful floodplain boundaries. Even if a rigorous survey and model is constructed for a site like this, the unstable nature of the landscape can cause the floodplain boundaries to change over time making a floodplain map obsolete and therefore, this approach is not a realistic approach to use as a planning tool. In areas like this, a conservative floodplain determination can be made using geomorphic and/or vegetative evidence to estimate floodplain areas. In this case, the break from riparian vegetation to sage can be considered the floodplain boundary. This places all of the campground units in the floodplain. Grand Teton National Park is considered non-high hazard for purposes of floodplain compliance because high flows do not occur unpredictably (except very rarely due dam failure, human, beaver, or landslide). Flooding typically occurs as temperatures warm in the spring or after lots of rain making the chances of sudden flooding of a campground very remote. This makes evacuation (by implementing a closure policy of low camp units) a viable human flood hazard mitigation strategy. Furthermore, the valley is very wide in the campground area which would prevent deep flooding in the area except perhaps in some of the deeper side channels, further resulting in a low hazard environment for people.

ENVIRONMENTAL CONSEQUENCES

Methodology

Surface and Groundwater

Impacts to surface water and ground water are defined at various levels described in the table below. Consideration of impacts and their disclosure is a function of risk, intensity,

duration and extent. Actions were evaluated for potential delivery of pollutants and proximity to water resources.

Impact Threshold Definitions

- Negligible:* An action with low potential to change water quality because of sufficient separation between the action and conveyance routes to the resource, or because the action does not generate sources of impact to water resources.
- Minor:* An action that could affect changes in water quality by proximity to surface water, or involvement with non-toxic or nonpoint and minor sources of pollution that do not persist in the environment.
- Moderate:* An action that could affect changes in water quality that are local in extent by proximity to surface water, or involvement with sources of pollution that are persistent in the environment and may be toxic to aquatic biota.
- Major:* An action that could affect changes in water that extend beyond the local area due to proximity to surface water or involvement with sources of pollution that are persistent in the environment and may be toxic to aquatic biota.

Effects of Alternative 1 – No Action on Surface and Groundwater

Direct/Indirect Impacts: The No Action Alternative maintains an undersized leach field to serve loops E and F and an outdated dump station. The four comfort stations located in loops F and G remain inside of the flood prone area based on flooding history and professional judgment by National Park Service employees assigned to the area. The amphitheater parking lot area would remain the same, thus maintaining the same area of impervious surface contributing to stormwater runoff. For these reasons, surface and ground water would be subject to adverse, minor and long term effects.

Cumulative Impacts: Adverse, negligible cumulative effects on surface and groundwater resources could result under this alternative in combination with impacts of relevant, recent, ongoing and reasonably foreseeable actions within the Gros Ventre watershed.

Conclusion: Alternative 1 would have adverse, minor and long-term direct and indirect impacts on surface and groundwater resources and adverse, negligible cumulative effects on surface and groundwater resources in the Gros Ventre watershed. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 1 would not result in any unacceptable impacts on surface and groundwater resources. The effects on surface and groundwater resources under Alternative 1 would not be unacceptable because potential adverse impacts are anticipated to be only negligible to minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of surface and groundwater resources (by definition, impairment is worse than unacceptable impacts) under this alternative.

Effects of Alternative 2 – Action Alternative (Preferred) on Surface and Groundwater

Direct/Indirect Impacts: Alternative 2 would provide for installation of a new leach field to serve loops E and F and an expanded dump station. The four comfort stations located in loops F and G would be constructed outside of the flood prone area based on flooding history and professional judgment by National Park Service employees assigned to the area. All above ground roadways serving the group loop, loop G and 10 sites on the West Corridor Road west of loop F would be closed permanently and the area would be revegetated. The amphitheater parking lot area would be reduced by 50 percent.

Minimal, short-term construction related activities associated with this alternative have the potential to produce non-point source pollution in the form of soil erosion, equipment fluid leakages, etc. This alternative presents a risk of degrading water quality due to its proximity to the Gros Ventre River (short-term, minor effect). Mitigating measures (section 2.6) would help protect these resources from sediment and other deleterious material. Alternative 2 would also result in a decrease in the area contributing to stormwater runoff. Overall, Alternative 2 would provide beneficial minor long term effects to surface and ground water resources.

Cumulative Impacts: Negligible to beneficial minor cumulative effects on surface and groundwater resources could result under this alternative in combination with impacts of relevant, recent, ongoing and reasonably foreseeable actions within the Gros Ventre watershed.

Conclusion: Direct and indirect impacts to water resources would be adverse and minor in the short-term and beneficial and minor in the long term under Alternative 2. There would be negligible to minor beneficial cumulative effects to surface and ground water would. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on surface and groundwater resources. The effects on surface and groundwater resources under Alternative 2 would not be unacceptable because potential adverse and beneficial impacts are not anticipated to exceed minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of surface and groundwater resources (by definition, impairment is worse than unacceptable impacts) under this alternative.

Floodplains

Impacts to floodplains are defined at various levels described in the table below. Consideration of impacts and their disclosure is a function of risk, intensity, duration and extent. A preliminary floodplain assessment, based on geomorphic/vegetative evidence, was conducted to determine if the proposed activity had a chance of being located in applicable regulatory floodplain. The regulatory floodplain for this action is the 100-year floodplain. In compliance with Executive Order 11988 - Floodplain Management (1977), a Statement of Findings for floodplains has been prepared and incorporated into this analysis (Appendix C).

Impact Threshold Definitions

- Beneficial:* An action that removes facilities from location within the 100-year floodplain.
- Adverse:* An action that maintains or increases facilities in the 100-year floodplain.
- Negligible:* An action that is not located in the 100-year floodplain.
- Minor:* An action that maintains or removes facilities in the 100-year floodplain by less than 10%.
- Moderate:* An action that changes the number of facilities in the 100-year floodplain by more than 10%.
- Major:* An action that changes the number of facilities in the 100 year floodplain by more than 50%.

Effects of Alternative 1 – No Action on Floodplains

Direct/Indirect Impacts: The No Action Alternative maintains existing facilities in the 100-year floodplain, and is therefore subject to adverse, minor, long term effects.

Cumulative Impacts: Negligible and long term cumulative effects on surface floodplains could result under this alternative in combination with impacts of relevant, recent, ongoing and reasonably foreseeable actions within the Gros Ventre watershed.

Negligible and long term cumulative effects on floodplains could result under this alternative in combination with impacts of relevant, recent, ongoing and reasonably foreseeable actions within the Gros Ventre watershed. Although the park is not aware of any reasonably foreseeable projects that would be relevant to this cumulative impact analysis, such actions would include any placement or expansion of new or existing infrastructure within the Gros Ventre River floodplain, either within Grand Teton National Park or the Bridger Teton National Forest, or adjacent private lands.

Conclusion: Under Alternative 1 there would be direct and indirect adverse, minor, and long-term impacts to floodplains and negligible cumulative impacts on floodplains. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 1 would not result in any unacceptable impacts on floodplains. The effects on floodplains under Alternative 1 would not be unacceptable because the adverse impacts are not anticipated to exceed minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of floodplains (by definition, impairment is worse than unacceptable impacts) under this alternative.

Effects of Alternative 2 – Action Alternative (Preferred) on Floodplains

Direct/Indirect Impacts: This alternative would remove the four comfort stations in the flood prone zone and construct 2 new comfort stations out of the flood prone zone, but still within the 100-year floodplain. The existing leach fields for loops E and F would be

replaced with a new leach field located outside of the 100-year floodplain. This would result in minor beneficial long term, impacts to the Gros Ventre River floodplain. Additional beneficial impacts could be realized if all the individual sewer drain fields were eliminated and that all waste was collected in sewer mains and then lifted to drain fields located in the sage and out of the floodplain.

Cumulative Impacts: Negligible to beneficial minor cumulative effects on floodplains could result under this alternative in combination with impacts of relevant, recent, ongoing and reasonably foreseeable actions within the Gros Ventre watershed. Although the park is not aware of any reasonably foreseeable projects that would be relevant to this cumulative impact analysis, such actions would include any placement or expansion of new or existing infrastructure within the Gros Ventre River floodplain, either within Grand Teton National Park or the Bridger Teton National Forest, or adjacent private lands.

Conclusion: Under Alternative 2 there would be negligible to beneficial minor long-term direct, indirect and cumulative impacts to floodplains. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on floodplains. The effects on floodplains under Alternative 2 would not be unacceptable because potential beneficial impacts are not anticipated to exceed minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. In addition, this alternative provides beneficial effects to floodplains. Because no unacceptable conditions would result, there would be no impairment of floodplains (by definition, impairment is worse than unacceptable impacts) under this alternative.

3.5 WILDLIFE, INCLUDING THREATENED OR ENDANGERED SPECIES

AFFECTED ENVIRONMENT

Grand Teton National Park provides habitat for a variety of wildlife species, including 61 mammals, 4 reptiles, 6 amphibians, 19 fish, and 300 species of birds. Among the 61 species of mammals are 6 native ungulates and 2 bear species. The project area is situated on the north side of the Gros Ventre River corridor. Meandering along the river’s course between the town of Kelly and Gros Ventre Junction is a continuous band of riparian cottonwood, willow, aspen, spruce, and sagebrush shrubland. The campground was constructed in some of the area’s highest quality riparian habitat.

The river corridor runs east-west and provides a forested strip in an otherwise open landscape, connecting the Gros Ventre drainage and surrounding mountains and highlands with the Snake River corridor. The vegetation types found along the river corridor in the project area vicinity provide important breeding and seasonal habitats for a variety of wildlife. The corridor also serves as an important travel or movement conduit facilitating within home range movements, dispersals, and movements associated with mating, migration, and genetic interchange for a number of species. The river corridor is critically important to maintaining connectivity between spatially disjunctive individuals and populations. The campground also lies within an important north-south ungulate

migration corridor linking crucial winter ranges to the south with summer and transitional ranges further north.

Threatened, Endangered, and Candidate Species

Gray wolf

Gray wolves were native to the park but extirpated from the Rocky Mountain west in the first half of the twentieth century. In 1995 and 1996, wolves were reintroduced into Yellowstone National Park and central Idaho as part of an effort to recover the species. By 1997 dispersers from Yellowstone started exploring Jackson Hole, as of 2008, there were approximately 45-50 wolves in 6 packs that had home ranges overlapping portions of Grand Teton National Park.

The home sites of two of these wolf packs, Antelope and Pinnacle Peak, are within 9.3 miles (15 km) of the project area. Wolf home sites are important and relatively small areas where reproductive activities take place (Darimont and Paquet 2000). Home sites include the den sites, a series of rendezvous sites, and surrounding areas where pups are born, fed, raised, and protected between April and October. Important pup rearing activities take place within a 3,707-acre (15 km²) area of the den within an annual home range. Den sites are frequently reused in successive years, highlighting their importance to successful reproduction and pack persistence.

Canada lynx

The US Fish and Wildlife Service listed the Canada lynx as threatened under the Endangered Species Act in 2000. There are no lynx sightings listed in the Grand Teton National Park historical database within 5 miles of the project area. There have been unconfirmed lynx sightings of unknown reliability within 10 miles of Gros Ventre campground, but these were in the forested habitats at the base of the Teton Range on the west side of the Snake River. The project area is not part of a Lynx Analysis Unit. Therefore, this species will not be considered further in this document.

Yellow-billed Cuckoo

Yellow-billed cuckoo (*Coccyzus erythrophthalmus*) is a candidate species for listing as threatened or endangered. Little is known about the status and occupancy of the yellow-billed cuckoo in Grand Teton National Park. The only sighting of this species reported to the park was documented in 2001 at the Teton Science School's monitoring avian productivity (MAP) station, near the eastern park boundary (NPS multi-year).

The Yellow-billed Cuckoo nests primarily in large stands of cottonwood-riparian habitat below 7,000 ft (2100 m). It is a riparian obligate species that prefers extensive areas of dense thickets and mature deciduous forests near water, and requires low, dense, shrubby vegetation for nest sites. Little is known about habitat requirements during migration, but Yellow-billed Cuckoos are most commonly observed in woodland and scrub habitat similar to that described above. The cottonwood-riparian habitat located within the project is suitable for nesting, foraging, and migrating cuckoo although no birds have been documented in the area.

In recent years, cuckoo distribution in the west has been reduced considerably (USFWS 2005). Biologists estimate that more than 90 percent of the bird's riparian habitat has been lost or degraded as a result of human disturbance. Yellow-billed cuckoos are very sensitive to disturbance in the form of habitat modification and loss. Cuckoos are also sensitive to human presence and may abandon their nest if disturbed, especially during the nest building stage (Laymon 1998).

Mammals

A variety of large mammals are known or suspected to use the Gros Ventre Campground area, including elk (*Cervus elaphus*), bison (*Bison bison*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), grizzly bear (*Ursus arctos horribilis*), black bear (*Ursus americanus*), mountain lion (*Puma concolor*), wolves (*Canis lupus*), and coyotes (*Canis latrans*).

Small and mid-sized mammals observed in the general Gros Ventre campground area, include bobcat (*Lynx rufus*), badger (*Taxidea taxus*), beaver (*Castor canadensis*), red fox (*Vulpes vulpes*), pine marten (*Martes americana*), porcupine (*Erethizon dorsatum*), river otter (*Lontra canadensis*), long-tail weasel (*Mustela frenata*), snowshoe hare (*Lepus americanus*), red squirrel, (*Tamiasciurus hudsonicus*), deer mice (*Peromyscus maniculatus*), voles (*Microtus pennsylvanicus*), chipmunks (*Eutamias umbrinus*), Uinta ground squirrels (*Spermophilus armatus*), and pocket gophers (*Thomomys talpoides*).

Elk

The elk that reside in Grand Teton National Park are part of the Jackson elk herd, the largest elk herd in North America. The majority of elk in the herd spend the winter on the National Elk Refuge (directly south of and adjacent to the project area) or on 1 of 3 state operated feed grounds in the Gros Ventre drainage, where they are supplementally fed. The elk migrate to summer ranges in the Bridger-Teton National Forest, Yellowstone National Park, and Grand Teton National Park. A substantial portion of the Jackson Hole elk herd migrates through the project area during spring and fall movements between seasonal ranges. Large numbers of elk move through the Mormon Row Hayfields, Antelope Flats, Blacktail Butte, and Moose-Wilson Road areas of Grand Teton National Park and continue north toward traditional calving areas and summer ranges.

The migration from winter range to summer range is generally complete by the end of May and elk are largely absent from the project area. However in some years, about 200 elk have been known to summer on the refuge and may calve in the dense forested areas adjacent to the Gros Ventre Campground (i.e. Gros Ventre Hills/ National Elk Refuge) although this is not delineated parturition range (Boyce 1989; Smith and Robbins, 1994). The southward autumn migration typically peaks during October or November and ends in mid December, as reflected by their crossing of road transects en route to winter ranges (Boyce 1989; Smith and Robbins 1994), counts of elk on the National Elk Refuge (NER, unpublished data), and radio-telemetry data (GTNP, unpublished data). The availability, abundance, and quality of winter range would normally constrain elk population size in Jackson Hole. Heavy snow accumulation in the mountains and foothills reduces food availability and forces elk to migrate to lower elevations during the winter. Supplemental feeding of large numbers of elk occurs on the National Elk Refuge and Wyoming Game and Fish Department feed grounds during the winter and this activity allows more elk to winter in Jackson Hole than what native winter range would likely have supported.

Pursuant to the parks enabling legislation, an elk reduction program is authorized within the park. The reduction generally starts in early to mid-October and ends in late November or early December. Concurrent elk hunting occurs on the National Elk Refuge and on the adjacent Bridger-Teton National Forest. The project area lies at the south end of hunt area 75, which sees moderate to intensive hunting pressure during the elk migration.

Moose

Moose are widely distributed throughout Jackson Hole and can be found within the park at anytime of the year. Estimates from the 1960s suggest 200-300 individuals inhabited the valley throughout the year with as many as 500 additional individuals migrating to river bottoms and valley floor during the winter (Houston 1968). More recent Wyoming Game and Fish Department population estimates suggest that the moose population in Jackson Hole may have numbered in excess of 3,500 animals in 1992 (D. Brimeyer pers. comm.). However, recent research has shown that the moose population in Jackson Hole has again declined, down to around 1,700 individuals in 2003 (D. Brimeyer, pers. comm.). The reason for the population decline is unknown, but poor nutrition and predation have been speculated as important factors.

The entire Snake River drainage and low elevation portions of the Gros Ventre River drainage represent either “winter-yearlong” or “crucial moose winter range” (WGFD unpubl. data). Moose densities along the Snake River north of the Gros Ventre River confluence average about 6 moose per mile (Fralick 1989) but vary both seasonally and annually. Increases may occur during the autumn as the rutting season progresses, during winter when moose move to lower elevations, and during harsh winters. In contrast, moose densities at lower elevations may decrease when winters are mild or where there are high levels of human activity (Minta and Campbell 1991). As with many ungulates, severe winters appear to be a key factor causing population declines. Although willow and spruce forest vegetation types are preferred during winter; moose will select and use other habitat types based on snow depth (Matchett 1985). As winter progresses and snow accumulations become greater, moose use of older, denser stands of trees with a high conifer component and relatively shallow snow depths increases (Saether et al. 1989).

The Snake River drainage and the lower elevations of the surrounding mountains are also considered critically important reproductive and maintenance habitat to the Jackson Hole moose population (WGFD unpubl. data). Moose thrive in seral stages of shrub and tree communities (Coady 1982) and environmental disturbances that disrupt existing vegetative patterns and promote the formation of ecotones are generally beneficial to moose (Tefler 1978). Shrub communities interspersed with forest cover and riparian willow stands provide winter range to moose in Wyoming (Houston 1968). Both lowland and upland climax shrub habitats are heavily used during summer and fall (Van Ballenberghe and Miquelle 1990). Aquatic vegetation is used extensively where available, particularly in early summer.

Bison

The bison that reside in Grand Teton National Park are part of the Jackson bison herd, which currently numbers about 850 animals. Most of the herd winters on the National Elk Refuge, south of the project area, where they eat natural forage and, for approximately two months, supplemental alfalfa pellets. Because of the availability of supplemental feed on the refuge and few sources of natural mortality, the herd has grown exponentially from the 16 animals allowed to free range in 1969. Bison herd numbers are currently managed through an annual hunt which occurs from early September through mid December on the National Elk Refuge, Bridger-Teton National Forest, and state lands. Bison are not hunted in the park, but the National Elk Refuge hunt area lies directly south of the Gros Ventre Campground on the south side of the Gros Ventre River.

Radio-telemetry studies have shown that the Jackson bison have very consistent seasonal distributions and movements within the park (Cain et al. 2001, 2002, 2003 and 2004). In late winter and early spring, many of the bison move to the northern end of the National Elk Refuge and the southern end of Grand Teton National Park. Bison residing in Grand Teton National Park primarily use the sagebrush-grassland communities, especially in the Mormon Row, Kelly Hayfields, Antelope Flats, and Uhl Hill/ Wolff Ridge areas, and the irrigated pastureland and adjacent areas in and around Buffalo Valley. Northward migrations through Antelope Flats and the Snake River bottoms to primary summering areas continue during May and June. Because a majority of calving takes place during the transition between summer and winter ranges, births can happen anywhere from the National Elk Refuge to the northern portions of Grand Teton National Park (GTNP, unpubl. data). From late August through September bison begin moving south along the same migration routes used during spring. Typically large numbers of bison are present in the Mormon Row-Kelly hayfields, and Hunter-Talbot area throughout September and October, with some moving through the project area to the National Elk Refuge. Generally, most bison move onto the National Elk Refuge by December.

Bison actively select recently burned sagebrush-grassland areas for several years post-burn (Vinton et al. 1993) in response to increased abundance of preferred grass species (Pfeiffer and Hartnett 1995). This has been documented in Grand Teton National Park following wildland and prescribed fires in the southern portion of Antelope Flats. Late in 2003 a large (~2,500 acres) wildfire started by lightning burned primarily sagebrush-grassland areas south of Blacktail Butte. In 2004, bison used this area extensively, especially from mid-summer through the fall and early winter (Cain et al. 2004). When using this area bison regularly accessed the Gros Ventre River in the vicinity of the Gros Ventre campground.

Mule Deer

Jackson Hole provides year-round habitat for mule deer which are abundant in Grand Teton National Park during non-winter months. Most of the park and its vicinity are classified as spring-summer-fall mule deer habitat. Primary mule deer summer range is on mountain slopes surrounding the southern portion of the valley, but mule deer can also be found summering within the Snake River floodplain. Mule deer use of lower elevations (e.g., along the Snake River and on the slopes of buttes and foothills) increases dramatically during the spring and fall months as mule deer migrate to and from winter range. Use of specific migration routes by mule deer in Jackson Hole is not common and migrating deer apparently use whatever routes are available to them (Campbell 1990). General mule deer movement routes are present within the park (e.g., along the Snake and Gros Ventre River) and are used by mule deer in route to and from crucial winter range located to the south on East and West Gros Ventre Buttes.

Mule deer winter range is limited in Jackson Hole and these ranges are generally confined to east- and south-facing slopes and bottomlands at low elevations in the southern portion of Jackson Hole. Some deer are known to irregularly winter along the Snake River south of the park depending upon the severity of the winter and/or the availability of artificial foods intentionally or unintentionally provided by humans. The number of deer wintering along the Snake River is unknown but appears to be increasing in response to intentional feeding efforts and recent mild winters.

Pronghorn Antelope

Pronghorn are seasonal residents of the project area. Approximately 200-300 pronghorn

summer in Grand Teton National Park and the Gros Ventre River drainage and generally migrate out of Jackson Hole to winter range in the Green River Basin 100 miles to the south (Sawyer and Lindzey 2000).

The highest concentrations of pronghorn summering in Jackson Hole occur within Grand Teton National Park in the low-lying sagebrush communities on the east and west side of the Snake River floodplain (Segerstrom 1997), including Baseline Flats, the Potholes, south Antelope Flats, the Kelly hayfields (Sawyer and Lindzey 2000), and in the Elk Ranch area. Some of these animals also spend portions of the summer on the National Elk Refuge (Sawyer and Lindzey 2000). Key fawning areas for pronghorn in the park include the Kelly hayfields and Antelope Flats area, the Potholes, Lupine Meadows, and Elk Ranch (K. Berger 2002, pers. comm.). Fawning occurs between mid-May to mid-July and represents the time of year when this species is most sensitive to human disturbance (J. Berger 2002, pers. comm.). Reproductive rates for Jackson Hole and upper Gros Ventre River drainage pronghorn tend to be lower than the rest of the Sublette pronghorn herd to which they belong. This may be because of stress related to a lengthy migration or because there is a higher percentage of barren females that migrate to Grand Teton National Park (Sawyer and Lindzey 2000). It could also be that pronghorn fawns are more susceptible to predation by coyotes in Grand Teton National Park (Berger 2003).

Pronghorn select forage with a high water content and will move from relatively dry ranges to more mesic sites in search of succulent vegetation (Minta and Campbell 1991). Forbs are an important part of the pronghorn's diet. When forbs are scarce, pronghorn select the most succulent browse available. Considering only food habits, ranges dominated by forbs, browse (e.g., sagebrush, rabbitbrush), and grasses appear to provide the highest carrying capacity for pronghorn.

Carnivores

Several species of carnivores can be expected to occur in or adjacent to the project area. Black (*Ursus americanus*) and grizzly (*Ursus arctos*) bears, bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), pine marten (*Martes americana*), weasels (*Mustela spp.*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and badger (*Taxidea taxus*) are all residents of the area. Wolverine (*Gulo gulo*) also may travel through the area while moving between more preferred habitats.

Along the eastern base of the Teton Range, the western base of the Gros Ventre range, and on Blacktail Butte, mixed conifer habitats provide some of the park's best bear habitat, with irregular openings and a diverse shrub under-story that includes *Vaccinium spp.* and other fruit producing plants. Black bears are common in these areas and can be expected to occur regularly in and near the project area. Coyotes, which are habitat generalists, are also very common. These habitats are also important to bobcat, mountain lion, and red fox, which occur at lower densities in the park and probably only pass through the project area occasionally. Pine marten, weasels, and skunks are year-around residents, and raccoons seem to be increasing in density along the Gros Ventre River.

Grizzly bear occurrence in Grand Teton National Park has increased during the past 20 years, most likely in response to increases in bear densities throughout the Greater Yellowstone Area (Pyare et al. 2004, Schwartz et al. 2002). Grizzly bears are now relatively common in the southern Greater Yellowstone Area including the Gros Ventre Mountains southeast of Grand Teton National Park and are regularly observed in the

Teton Mountain Range north of Paintbrush Canyon and the Badger Creek drainage (NPS 2005). Recently grizzlies have been more frequently observed on the valley floor, as far south as the Gros Ventre road near the Gros Ventre Campground, near the White Grass road and Phelps Lake areas, and in the Poker Flats vicinity near Teton Village (GTNP, unpublished data). Grizzly bears can be expected to occasionally use habitats near the project area for foraging and traveling. They can also be expected to enter the campground infrequently to investigate human food odors.

Grizzly bears once ranged over most of western North America, from the Arctic Ocean to central Mexico. Although still abundant throughout much of Canada and Alaska, the range of grizzly bears in the lower 48 states is confined to 6 separate areas in Wyoming, Montana, Idaho, and Washington covering less than 1 percent of its historic range in the lower 48 states (USFWS 1993). Grizzly bears currently inhabit much of the Greater Yellowstone Area, including portions of Yellowstone National Park, Grand Teton National Park, and Bridger-Teton, Shoshone, Caribou-Targhee, Gallatin, and Custer National Forests.

Between 1800 and 1975, this grizzly population was reduced from an estimated 100,000 animals to less than 1,000 as a result of habitat destruction and intensive persecution from livestock interests (USFWS 1982). By 1974, some scientists estimated that fewer than 200 grizzlies remained in the Greater Yellowstone Area (Craighead et al. 1995). In 1975, grizzly bears were listed as threatened under the Endangered Species Act in the lower 48 states. In 1982, a recovery plan for grizzly bear populations in the contiguous United States was completed and implemented (USFWS 1982). Guidelines for grizzly bear recovery were developed in 1983 by the Interagency Grizzly Bear Committee (IGBC 1986). Recovery zones and population goals were established in the Grizzly Bear Recovery Plan (USFWS 1982) and revised Grizzly Bear Recovery Plan (USFWS 1993). These plans established 6 grizzly bear recovery zones in the contiguous United States, one of which encompassed a portion of the Greater Yellowstone Area including much of Grand Teton National Park. The revised Grizzly Bear Recovery Plan established measurable population parameters as indicators of population status for the Greater Yellowstone Area (USFWS 1993).

All grizzly bear population recovery parameters were achieved for the first time in 1994, but grizzly bear mortality limits were exceeded during the next 3 years (1995-97). All population recovery parameters were again achieved from 1998-2001 and habitat-based recovery criteria, a conservation strategy, and state plans were developed by 2007, when the US Fish and Wildlife Service removed grizzly bears from threatened species status. In 2008, recovery mortality limits were exceeded, raising concern for future management of human-caused mortalities in the ecosystem.

Approximately 125,000 acres of Grand Teton National Park are within the Primary Conservation Area as defined by the Conservation Strategy for the Grizzly Bears in the Yellowstone Ecosystem (USFWS 2003). Development within this zone is restricted and requires an equivalent area within the conservation area to be restored as useable grizzly bear habitat.

Management of grizzly bears and grizzly bear habitat in Grand Teton National Park follows the Conservation Strategy (USFWS 2003) and the park's Human-Bear Management Plan (NPS 1989). Management of grizzly bears in both the Greater Yellowstone Area and, more specifically, in Grand Teton National Park has been highly

successful in promoting grizzly bear recovery and reducing bear-human conflicts (e.g., property damages, incidents of bears obtaining human food, bear-inflicted human injuries) and human-caused bear mortalities in the park. Recreational and administrative facilities, human activities, and human waste (garbage and sewage) in Grand Teton National Park are managed in a manner that results in relatively few human-caused grizzly bear mortalities.

Bears, both grizzlies and black, in Grand Teton National Park are subject to being killed by human activities, including those associated with accessing and using campgrounds. A total of 3 Grizzlies and 17 Black bears have been hit and killed by vehicles from 1992–2008 in the park (GTNP, unpubl. data). An average of about 1 black bear a year is killed by park officials because of human food conditioning and aggressing behavior that threatens humans. Many of the incidents that result in bears becoming human food conditioned occur in campgrounds due to visitors' non-compliance with food storage regulations. Two grizzly bears that frequented park developments eventually were killed, although both bears had nuisance histories outside the park prior to these incidents. One was captured after breaking into the University of Wyoming/ National Park Service research center at the AMK ranch. After being relocated to the north end of the ecosystem, it was euthanized by Montana officials after it immediately resumed nuisance behavior in a new area. Another Montana nuisance bear was trapped in Grand Teton National Park after it was relocated to the Teton Wilderness and then was involved in several incidents in the Flag Ranch campground. It was subsequently transferred to Montana where officials made the decision to destroy it.

Recently the park has experienced a substantial increase in the number of human habituated (but not food conditioned) grizzlies that go about their daily routines in close proximity to humans and their developments, particularly roads. These bears, because they are not afraid of approaching developments such as campgrounds, are more vulnerable to becoming food conditioned and ultimately destroyed. Thus the probability of grizzly bears developing nuisance behavior has increased in recent years, both because of higher bear densities and habituation to human activities.

Special-Concern Species

The *Comprehensive Wildlife Conservation Strategy*, a collaborative effort developed by the Wyoming Game and Fish Department (2005) and experts throughout Wyoming, identifies species of greatest conservation need. Relevant park-wide special-concern species are those that occupy habitats within the project area and are listed in Table #. Input regarding special-concern species also was obtained from the US Fish and Wildlife Service (Kelly 2005) and Wyoming Game and Fish Department (Wichers 2005) during scoping.

Table 3.5. Species of Concern that may occur in the Project Area.

Common Name	Scientific Name	WGFD Status*	Potential for Occurrence in Project Area
Boreal Western Toad	<i>Bufo boreas boreas</i>	NSS2	Likely
Northern Leopard Frog	<i>Rana pipiens</i>	NSS4	Unlikely
Columbia Spotted Frog	<i>Rana luteiventris</i>	NSS5	Unlikely
Sagebrush lizard	<i>Sceloporus graciosus graciosus</i>	NSS4	Unlikely

Trumpeter Swan	<i>Cygnus buccinator</i>	NSS2	Likely
Bald Eagle	<i>Haliaeetus leucocephalus</i>	NSS2	Likely
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	NSS2	Likely
Long-billed Curlew	<i>Numenius americanus</i>	NSS3	Unlikely
Brewer's sparrow	<i>Spizella breweri</i>	NSS4	Likely
Sage thrasher	<i>Oreoscoptes montanus</i>	NSS4	Likely

*WGFD Status:

NSS2 = Populations restricted or declining in numbers and/or distribution; extirpation in Wyoming is not imminent AND ongoing significant loss of habitat.

NSS3 = Populations restricted or declining in numbers and/or distribution; extirpation in Wyoming is not imminent AND habitat is restricted or vulnerable but no recent or on-going loss; species is sensitive to human disturbance.

NSS4 = Species is widely distributed; population status and trends within Wyoming are assumed stable AND habitat is restricted or vulnerable but no recent or on-going significant loss; species is sensitive to human disturbance.

Species that are likely to be found in the project area are discussed below. The amphibian and reptile species of concern are discussed in a separate Amphibian and Reptile section.

Brewer's sparrow and sage thrasher

Brewer's sparrow and sage thrasher, both sagebrush obligates, occur throughout Wyoming including Grand Teton National Park. Each of these species depends on sagebrush habitats for breeding and nesting. Brewer's sparrows may also be found in dense shrubs at higher elevations as well as in some willow habitats. The Wyoming Game and Fish Department classifies sage thrasher and brewer's sparrow as a Species of Special Concern with a Native Species Status of 4 (NSS4) because populations are declining and their habitat is vulnerable (WGFD 2005).

The project area contains suitable breeding, nesting and foraging habitat for sage thrasher and brewer's sparrow. Both species are known to occupy the sagebrush areas adjacent to the campground including where the leach field is proposed (GTNP, unpublished data).

Trumpeter swans

Trumpeter swans inhabiting the Park are a part of the Rocky Mountain Population. This population is comprised of 2 separate breeding flocks: the migratory Canadian flock that breeds in Canada and the year-round resident Tri-state flock that occupies the Greater Yellowstone Ecosystem and surrounding areas in Idaho, Montana, and Wyoming. Swan populations in the Tri-State showed marked declines between the mid-1960's and the mid-1980's. Concern over the long-term decline of Tri-state swan numbers lead to the recent petition for listing this population as threatened or endangered under the Endangered Species Act. Many reasons are responsible for this decline including competition with migratory flocks of swans on marginal winter range, variable reproduction rates, habitat loss and high cygnet mortality. In recent years, populations in Wyoming and the rest of the Rocky Mountain Population increased due to captive breeding programs and habitat conservation; however productivity in Grand Teton National Park has continued to decline.

Swans use riparian areas such as lakes, ponds, rivers and reservoirs for nesting and foraging. They initiate nesting when these areas thaw, typically in late April or early May. Eggs hatch in early June and cygnets usually fledge in September. Swans use open water along rivers and lakes for foraging in the late fall and winter.

Twelve swan nesting territories are monitored by park personnel each year for site occupancy, nest success, and number of cygnets that successfully fledge. Eight sites were occupied in 2008 but only two successfully fledged young (GTNP, unpubl. data).

No trumpeter swan nest territory is in or adjacent to the project area. The nearest known swan nesting territory is located on the northern end of the National Elk Refuge. Swans do use the Gros Ventre River corridor throughout the year for foraging and loafing.

The bald eagle was federally listed as an endangered species in Wyoming in 1967. After several decades of protection, recovery goals were met and they were de-listed in 2007. They continue to be considered a species of concern in the park and by Wyoming Game and Fish Department and are protected under the 1918 Migratory Bird Treaty Act (16 U.S. Code 703), and the 1940 Bald Eagle Protection Act (16 U.S. Code 668).

Grand Teton National Park contains 12 known nesting eagle territories and pairs; however, not all nests successfully fledge young each year. Known territories are located along the shorelines of the Snake River, Jackson Lake, and adjacent riparian areas. Many of the bald eagles that nest in the park remain on their nest territories throughout the year, occasionally leaving for short periods during the non-breeding season to exploit abundant or ephemeral food sources elsewhere. Eagles feed primarily on fish, waterfowl, and carrion.

No bald eagles nest within the project area. A pair of eagles has intermittently occupied a nest located approximately 2 miles downstream from the project area; however they have never produced young at this territory. Eagles use the Gros Ventre River year-round for hunting and foraging.

Greater sage-grouse

Greater sage-grouse numbers have declined over the past several decades throughout the West, including Wyoming. These declines have resulted in the petitioning for their listing under the Endangered Species Act. The US Fish and Wildlife Service determined that listing the greater sage-grouse as threatened or endangered was unwarranted (70 Federal Register 2244, February 12, 2005); however, in a December 4, 2007 ruling, US District Judge Lynn B. Winmill directed the Service to reconsider this decision. The exact cause of sage-grouse decline has not been conclusively identified but is thought to be related to permanent loss, degradation and fragmentation of key habitat, as well as low nest productivity. State and local working groups initiated conservation planning efforts that focus on providing guidelines for sustaining and/or perpetuating sage-grouse populations through consistent and up to date management strategies. In Wyoming, the Wyoming Greater Sage-Grouse Conservation Plan (WGFD 2003) outlines these guidelines. In addition, the Upper Snake River Sage-Grouse Working Group developed a conservation plan that outlines recommendations for grouse management and conservation in the Jackson Hole area.

Sage-grouse depend on sagebrush communities for their entire life cycle. They breed on mating grounds called leks which are generally open areas such as meadows, low sagebrush zones, ridge tops, and old lakebeds surrounded by denser sagebrush cover (Connelly et al. 1981). Soon after breeding, females disperse to nesting areas characterized by relatively dense, tall, mature sagebrush stands (Connelly et al. 2000, Holloran and Anderson 2004). Early brood-rearing habitat is typically close to nest sites (Gates 1984) and in dense, mature sagebrush stands (Holloran and Anderson 2004). As the summer progresses, hens and their young will also use relatively open sagebrush

stands that have good grass and forb cover (Lyon 2000). In the winter, sage-grouse use dense, tall stands of mature sagebrush for both food and cover. Low sagebrush stands on open windswept knolls are also used as feeding sites.

Currently there are 3 known active leks in Grand Teton National Park as well as several intermittently used and satellite leks. No known leks are located within or near the project area. The sagebrush communities surrounding the Gros Ventre campground do contain suitable nesting, brood-rearing and wintering habitat.

Neotropical Migratory Bird Species

Neotropical migratory birds include raptors, passerines, and shorebirds that breed in North America, but migrate to Mexico, Central and South America for the winter. In Wyoming, 162 bird species are considered neotropical migrants (Cerovski et al., 2001) with peak migration periods occurring in May and September through early October. Nesting is typically initiated from mid-May to mid-June and most young fledge nests sometime in June to late-July; however these dates vary annually due to snow melt and leaf-out of trees and shrubs.

Neotropical migratory birds are of particular concern to wildlife managers because they have been experiencing severe population declines throughout their North American range (Askins et al. 1990). Habitat fragmentation and loss of winter range are among factors believed responsible for these declines (Hutto 1988, Robbins et al. 1989).

All migratory birds in the park are protected under the Migratory Bird Treaty Act, 16 U.S.C. 703, enacted in 1918. This act prohibits the taking of any migratory birds, their parts, nests, or eggs. Removal of nests or nest trees is prohibited, but may be allowed once young have fledged.

Numerous neotropical migratory bird species, residents, and other migrants that are not designated as sensitive by the US Fish and Wildlife Service or Wyoming Game and Fish Department occur and breed in Grand Teton National Park and the project area. These species include but are not limited to: osprey, vesper sparrow, chipping sparrow, ruby-crowned kinglet, northern flicker, downy woodpecker, hairy woodpecker, yellow warbler, yellow-rumped warbler, white-crowned sparrow, western tanager, red-tailed hawk, and numerous others.

Long-term bird projects conducted in the park indicate that riparian and wetland habitats generally contain the highest density of bird species in Grand Teton National Park (M. Cody, S. Wolff pers comm.). In addition, many bird species of special concern migrate, breed and nest throughout the park in riparian habitats and sagebrush-grassland plant communities and deciduous and coniferous forests. The mixture of riparian and upland habitats found within the proposed project area makes it certain that a variety of resident and neotropical migratory bird species are present and breed in and adjacent to the project.

Amphibians and Reptiles

Several species of amphibians and reptiles are present in Grand Teton National Park (Baxter and Stone 1980, Koch and Peterson 1995) including tiger salamander (*Ambystoma tigrinum*), western spotted frog (*Rana pretiosa*), boreal toads (*Bufo boreas*), western chorus frog (*Pseudacris triseriata*), wandering garter snake (*Thamnophis elegans*), valley garter snake (*Thamnophis sirtalis*), rubber boa (*Charina bottae*), northern sagebrush lizard (*Sceloporus graciosus*), and perhaps bullsnakes (*Pitophis melanoleucas*).

The majority of these species commonly inhabit wet areas within riparian zones and elsewhere on the valley floor and foothill regions (Koch and Peterson 1995), with the exception of rubber boas that are typically found in mesic forested areas with heavy ground cover (Baxter and Stone 1980). Populations of most of these species, with the exception of boreal toads and sagebrush lizards, appear healthy and are relatively common in Jackson Hole.

Western boreal toads are present within Grand Teton National Park. The southern Rocky Mountain population of western boreal toads has been a Candidate Species for listing under the ESA since 1995. The listing is considered warranted but precluded by US Fish and Wildlife Service due to higher priority species and activities. The northern Rocky Mountain population within the Greater Yellowstone Ecosystem, including Jackson Hole and Grand Teton National Park, can be locally abundant, but appears to be less widespread than it was in the 1950's (Koch and Peterson 1995). Boreal toads inhabit mesic areas in the foothills, montane and subalpine life zones, willow marshes, and aspen or spruce-fir stands (Baxter and Stone 1980). Adult boreal toads are known to occupy the study area although no breeding activity has been reported (S. Wolff, pers comm.).

Northern leopard frogs (*Rana pipiens*) were historically present in Grand Teton National Park but observations confirming their continued existence are lacking (Koch and Peterson 1995). Although 3 museum specimens were collected at Jenny, String, and Leigh Lakes (Carpenter 1953), no verified sightings of this species have been made in Grand Teton National Park in nearly 40 years (Koch and Peterson 1995), thus it is assumed that this species is extirpated from Grand Teton National Park.

The northern sagebrush lizard is the only lizard species known to occur in the Greater Yellowstone Ecosystem and, specifically, in Grand Teton National Park. Although not often found above 6,000 ft in the northern Rocky Mountains (Baxter and Stone 1985), it has been documented as high as 8,300 ft in Yellowstone and Grand Teton National Parks in geothermally influenced areas and as high as 7,000 ft in non-geothermal areas (Koch and Peterson 1995). Occurrence of sagebrush lizards in Grand Teton National Park was not confirmed until 1992 when an individual was observed near Pilgrim Creek (Koch and Peterson 1995). Three other observations are reported in Grand Teton National Park (2 near Bar BC Ranch and one near Colter Bay) but all 3 are unverified (NPS 2002). This species likely occurs only in small, localized areas. No lizards have been reported in the study area.

ENVIRONMENTAL CONSEQUENCES

Methodology

Identification of federally listed species, migratory bird species of management concern, and special-concern species was accomplished through discussions with wildlife biologists in Grand Teton National Park and informal consultation during the scoping period with the Ecological Services Branch of the US Fish and Wildlife Service in Wyoming. A letter requesting a current list of federal threatened, endangered, and special concern species was sent to the US Fish and Wildlife Service. The US Fish and Wildlife Service responded on 12 July 2005 with scoping comments, which are summarized in section 1.6 of this Environmental Assessment. Wyoming Game and Fish Department received a copy of the scoping notice and responded on 27 July 2005 with comments which are also summarized on section 1.6 of this Environmental Assessment.

Copies of both agency response letters are provided in Appendix A.

The following steps were used in assessing impacts on listed species and other wildlife:

1. Determine current presence, habitat availability, and uses of areas by wildlife species;
2. Identify areas most likely to be affected by management actions resulting from the rehabilitation of the Gros Ventre Campground; and
3. Determine the extent and intensity of habitat loss or disturbance caused by the alternatives.

Impact Threshold Definitions

Negligible a change to a population or individuals of a species or to the species habitat (including designated critical habitat for T&E species) that is not measurable or perceptible.

Minor a measurable, small, localized change to a population or individuals of a species or to the species habitat (including designated critical habitat for T&E species).

Moderate a change to a population or individuals of a species or to the species habitat (including designated critical habitat for T&E species) that is measurable, localized and of consequence.

Major a measurable, large and/or widespread change to a population or individuals of a species or to the species habitat (including designated critical habitat for T&E species).

Effect of Alternative 1: No Action on Wildlife, Including Threatened and Endangered Species

Direct/ Indirect Impacts: The No Action Alternative would maintain the campground in its current state, but would allow for replacement of facilities and infrastructure in-kind on an as needed basis. The project area would continue to provide habitat for many wildlife species, although the quality of the habitat would remain low due to the existing development and levels of human use. Human activity also results in a buffer of unused habitat around the developed area, the size depending on species and individual levels of tolerance for human activities. With no changes in vegetation and human use levels, wildlife use of the area would generally remain as it is currently. Utilities and infrastructure are currently outdated and repairs to these systems are likely to be necessary. Repair of infrastructure, would have adverse minor effects beyond the ongoing impacts provided that construction activities associated with these repairs occur within the current campground operation window (late May – early October) and remain within the existing campground footprint. Construction related activities outside of the established use period and existing footprint would have adverse negligible to minor indirect impacts to wildlife habitats beyond what currently occurs.

Threatened, Endangered, and Candidate Species

Gray wolf – Ongoing activities at the Gros Ventre Campground have resulted in a daily disturbance in the project area from late May through early October. The campground and associated disturbance has resulted in a loss of habitat for ungulates in the project area and decreased the quality of habitat in areas immediately adjacent. Ungulates are the primary prey of wolves. Any displacement impacts to ungulates, particularly elk that result from the existing campground and its use would also have minor indirect impacts on wolves. These impacts would continue under the No Action Alternative. The project area is greater than 1 mile from any known wolf den or rendezvous site. Consequently, any emergency repairs to utilities or infrastructure that are necessary are unlikely to disrupt or affect any denning activities. Any additional displacement or disturbance of individuals that occurs as result of emergency maintenance activities would be confined to the project’s immediate area and limited in temporal extent and should not have population level or long-term impacts on wolves, their ungulate prey or other important habitat elements. Therefore, this alternative “**may affect, but is not likely to adversely affect**” gray wolves.

Yellow-billed cuckoo–Ongoing activities at the Gros Ventre campground have reduced the suitability of the area for Yellow-billed cuckoos, especially during their breeding and nesting season (May-July) when they are sensitive to disturbance. Human occupancy and associated activities has also decreased the quality of habitat in areas immediately adjacent to the project area. No additional habitat would be modified and existing human use would remain the same under Alternative 1, therefore this alternative would not have any additional effects on Yellow-billed cuckoos. Continued operation of the campground under existing conditions would have local, long-term, and minor effects. Displacement or disturbance to individuals that occurs as a result of the operation of the campground and any facility maintenance would be confined to the project’s immediate area and limited on a temporal extent and should not have population level impacts on cuckoos. Therefore, this alternative “**may affect, but is not likely to adversely affect**” Yellow-billed cuckoos.

Mammals

Ungulates - The existing campground has resulted in the loss or modification of 170 acres of riparian and adjacent upland habitat. Under Alternative 1, there may be additional direct loss of habitats suitable for ungulate browsing and security if emergency repairs are necessary. The extent of additional habitat loss would depend on the nature of the repairs and their location. Any additional habitat loss is expected to be negligible to minor because of the small acreage likely to be affected and its occurrence in a previously disturbed area. Operation of the campground would continue to be seasonal. Ungulates could access forage and browse or secure habitats on the site during the winter and early spring or at other times of the year when human presence is low. The primary effect of the Gros Ventre campground on ungulates would continue to be habitat avoidance due to human disturbance. Ungulates would continue to modify their use of suitable habitats in the project area to avoid human disturbance.

Carnivores

Current operation of the campground has direct and indirect adverse effects on several species of carnivores. During the campground’s annual operational period, within the developed area’s existing foot print, some habitat remains for weasels, badgers, skunks, raccoons, and pine marten. These species may use habitats within the developed area but

densities are likely reduced when compared to undisturbed habitats. Skunks and raccoons may experience beneficial effects through use of cavities associated with building foundations as wintering and denning areas. Other species, including coyote, bobcat, mountain lion, and black and grizzly bears are displaced from using habitats within the campground's footprint because of high levels of human activity. Human activity also results in a buffer of unused habitat around the developed area, the size depending on species and individual levels of tolerance for human activities. The direct and indirect impacts on these carnivores associated with habitat loss are considered minor and long-term in the campground's current configuration.

Human foods occasionally attract bears to the campground. Black bears have been observed in the campground on a relatively low but consistent rate, and food rewards have occurred. However, no black bear control actions have occurred in the campground for at least 20 years. One black bear that was eventually destroyed by Wyoming Game and Fish personnel after breaking into a private residence near the airport was known to have frequented the Gros Ventre campground. Black bears are common on Blacktail Butte and they will continue to investigate the campground and surrounding habitats occasionally. In the south end of the park, expanding numbers of grizzly bears, which commonly use more open habitats like those surrounding the campground, would increase the chance that they will investigate the campground as well. Existence of the campground and associated human foods increases the probability for bears to receive food rewards, become food conditioned, and ultimately is destroyed because of threats to human safety. This adverse impact to bear populations is negligible and long-term currently but could increase to minor and long-term if grizzly bear density increases in the area.

Special-Concern Species, Neotropical Migratory Birds, and Amphibians and Reptiles

The current operation of the campground has direct and indirect adverse effects on several special-concern species including bald eagles, sage-grouse, trumpeter swans, neotropical migratory birds and amphibian and reptiles. During the campground's annual operational period, within the developed area's existing foot print, some habitat remains for neotropical migratory birds, amphibian and reptiles, and other special-concern species. These species may use habitats within the developed area for nesting, foraging or shelter but densities are likely reduced when compared to undisturbed habitats. Other species, such as sage-grouse, bald eagle, trumpeter swan, and raptors are displaced from using habitats within the campground's footprint because of high levels of human activity and/or habitat alteration. Human activity associated with the campground also results in a buffer of unused habitat around the developed area, the size depending on species and individual levels of tolerance for human activities.

The existing footprint of the campground would remain the same under Alternative 1. No new areas would be converted from undisturbed ground to pavement, camping sites, or facilities and no trees or vegetation would be removed. Without a change in vegetation or human activity in the project area, wildlife use would generally remain the same although habitat quality in the immediate area would remain relatively low due to the existing level of development and human presence. Selection of the No Action Alternative would not affect special-concern species, neotropical migratory birds, or amphibian and reptiles in the project vicinity, or their habitat, beyond the on-going impacts from visitation and human activity that have been occurring in this area for

many years; however these impacts are considered negligible to minor, and long-term.

Cumulative Impacts: Cumulative impacts from activities associated with Alternative 1 are expected to be minor. This alternative contributes to cumulative impacts associated with other recent or near-future park developments, or to other sources of habitat loss, including private lands development and increased recreation within the ecosystem.

Existing developments in the area including the town of Kelly, the Kelly Road, and private residents along the Gros Ventre River may restrict use of this habitat by riparian-obligate species and as a travel corridor by others.

Conclusion: Direct, indirect, and cumulative impacts to the wildlife resource would be adverse and negligible to minor as a result of implementing the No Action Alternative. It was also determined that Alternative 1 “**may affect, but is not likely to adversely affect**” the gray wolf and Yellow-billed cuckoo. Consistent with §1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 1 would not result in any unacceptable impacts on wildlife and their habitats, including special concern, threatened, or endangered species in the area. The effects on wildlife resources under Alternative 1 would not be unacceptable because the potential adverse impacts are anticipated to be only negligible to minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of wildlife (by definition, impairment is worse than unacceptable impacts)

Recommended Mitigation Measures

To limit potential impacts to wildlife, the following mitigation measures are recommended under Alternative 1.

1. Maintain Gros Ventre campground season of use from late May through early October. This is to ensure that migrating ungulates have access to an important seasonal migration corridor and associated staging areas. This would ensure wintering moose have access to undisturbed crucial winter range and public safety is maintained during the elk reduction program. To the extent practical, all activities associated with preparing the campground for opening and closing would occur within the late May – early October operation season.
2. Conduct emergency repair activities during the campground operating season (late May – early October).
3. Ensure that all administrative loop residents are thoroughly briefed on park food storage regulations.
4. Conduct regular food storage compliance patrols in administrative loops.
5. Require the contract concessioner to develop a plan for installation of food storage boxes in all campground sites within the next 5 years. Evaluate the need for food storage boxes in administrative sites.
6. Protect owl and raptor nests located in the campground from human disturbance. Do not remove or disturb any migratory bird nest, egg, or parts thereof under requirements outlined in the Migratory Bird Treaty Act.

Effects of Alternative 2 – Action Alternative (Preferred) on Wildlife, Including Threatened and Endangered Species

Direct/ Indirect Impacts: Alternative 2 proposes a number of upgrades and improvements to campground utilities and infrastructure. Project implementation would involve construction of new infrastructure facilities in currently undisturbed habitat, upgrade/replacement of existing utilities within the previously disturbed footprint, and removal of some existing facilities/infrastructure and restoration of these areas. Construction activities associated with the proposed enhancements would likely be moderate to intense, compared to other park activities such as hiking or camping and would add to the existing disturbance impacts. Implementation of the proposed action is expected to result in the following:

- increase in disturbance impacts during the construction phase of the project (these are expected to be short-term and local in extent);
- permanent loss of an estimated 198 trees;
- slightly less than 170 acres of undisturbed habitats affected;
- overall reduction in the total number of available camp sites from 385 to 308;
- increase in the number of administrative sites from 20 to 44 and resulting partial shift in the intensity of campground use from predominantly short-term occupancy by overnight campers to season-long continuous occupation in the administrative loop;

Once the campsite loops are closed and those habitats are restored the following beneficial effects are anticipated:

- overall reduction in campground footprint;
- restoration of 8 acres of habitat

Other potential impacts on wildlife would be similar to Alternative 1.

Threatened and Endangered Species

Gray wolf - Generally, project activities occurring more than a mile from a den or rendezvous site and outside of the breeding season (April - June) do not disrupt and/or inhibit wolf life history behavior to the point of site abandonment or mortality. The project area is greater than 1 mile from any known wolf den or rendezvous site. Individual wolves that may use areas near the project area may avoid the area due to human presence and mechanical noise during project implementation. Any displacement or disturbance of individual wolves that occurs as a result of project implementation would be confined to the project's immediate area and limited in extent and should not have population level or long-term impacts on wolves, their ungulate prey or other important habitat elements. Therefore, it is in the opinion of the National Park Service that this alternative “**may affect, but is not likely to adversely affect**” gray wolves.

Yellow-billed cuckoo-Alternative 2 would result in the loss of over 160 cottonwood trees for the development of E and F loops, over half of which are large trees between 6-12 inches or greater in diameter at breast height. Combining this tree removal with that estimated for the development of the leach field and septic tank construction would result in the removal of approximately 198 cottonwood trees. This level of tree removal

is substantially greater than no trees removed in Alternative 1 and results in the direct loss of potential cuckoo habitat. Restoration of approximately 8.0 acres of habitat in the G and the Group loops would offset some of the direct habitat loss proposed in E and F loops and the leach field/ septic tank area; however vegetation structure in the restored area may not be similar to what is removed for campground improvements proposed in Alternative 2. Impacts from the removal of vegetation, mainly cottonwood trees, would have long-term, local and minor impacts to Yellow-billed cuckoos although these impacts would occur in areas currently degraded because of high disturbance levels from existing campground uses and in an area of widespread availability of cottonwood habitat. In order to minimize these impacts, it is recommended that fewer trees be removed during campsite and leach field development. Any displacement or disturbance of individual cuckoos that occurs as a result of project implementation would be confined to the project's immediate area and limited in extent and should not have population level or long-term impacts on cuckoos. Therefore, it is in the opinion of the National Park Service that this alternative “**may affect, but is not likely to adversely affect**” Yellow-billed cuckoos.

Mammals

Ungulates – Human development with attendant high density human use generally results in a decline in the effectiveness of habitat to support ungulates. In addition to the existing disturbance impacts described under the No Action Alternative, Alternative 2 would result in additional loss of habitat where new facilities are constructed in undisturbed areas and a reduction in habitat effectiveness due to construction related disturbance. Summer range is widely available for all the ungulate species within the Jackson Hole valley and in areas adjacent to the project area. Therefore the direct loss of a small amount of ungulate foraging habitat is anticipated to have minor effects. The project area serves as an important seasonal migration corridor for bison and elk and as crucial winter range for moose. The limited season of use and construction window (summer only) would still allow ungulate migrations to occur unimpeded and would provide secure winter habitat for moose.

The restoration proposed for the southwest portion of the campground would result in more concentrated use in the remaining portion of the campground. In the long-term, this would be beneficial for wildlife. The overall campground footprint would be reduced and removed from the riparian area. As the restored areas recover they would become available to wildlife for foraging, traveling and resting. This gain for wildlife may be offset to some extent, if a shift in use patterns occurs with an increase in the number of administrative sites. Currently campground users are primarily short-term overnight visitors and the campground reaches capacity for a few nights during midsummer. Administrative sites are generally occupied for the duration of the summer resulting in overall higher occupancy levels. Use of the riparian corridor adjacent to the campground may increase if seasonal residents opt to recreate from their sites. This could reduce the effectiveness of the riparian habitats for ungulates if use levels were high.

Carnivores

Under Alternative 2, some additional habitat would be gained through the abandonment of the two western-most existing loops in the campground and an overall reduction in the developed area foot print. This would have direct and indirect, negligible but long-term, beneficial impacts to all carnivores.

Experience throughout the park with administrative RV sites and visitor campgrounds has shown that the former generally have a higher level of compliance with food storage regulations. Thus the conversion of two campground loops into RV sites may decrease the probability that a grizzly or black bear could receive human associated food rewards. This logic would only apply, however, when the campground was near capacity. When the campground occupancy is substantially less than full capacity, the converted RV loops would serve to increase the average number of occupants in the developed area and the potential for food storage violations. Overall, impacts associated with potential food-conditioning of bears would not vary considerably between Alternatives 1 and 2.

Other potential impacts on carnivores would be similar to Alternative 1.

Special-Concern Species, Neotropical Migratory Birds, and Amphibians and Reptiles

Direct impacts to special-concern species such as bald eagles, sage-grouse, trumpeter swans, neotropical migratory birds and amphibian and reptiles as a result of implementation of Alternative 2 would be primarily a result of (1) noise disturbance from construction activity, (2) habitat removal, and (3) habitat gained through the abandonment of G and the Groups loops.

Noise associated from construction activities has the potential to disturb wildlife in the area, but this disturbance is expected to be of low magnitude and of short-duration since construction noise would cease as soon as the project was complete. A direct loss of some individuals could occur during construction activities whereas other individuals will not be permanently displaced. Wildlife such as some bird, amphibian or reptiles species may be temporarily or permanently displaced to similar habitat in the surrounding area.

Alternative 2 would result in the loss of over 160 cottonwood trees for the development of E and F loops, over half of which are large trees between 6-12 inches or greater in diameter at breast height. Combining this tree removal with that estimated for the development of the leach field and septic tank construction would result in the removal of approximately 198 cottonwood trees. This level of tree removal is substantially greater than no trees removed in Alternative 1. The direct loss of trees proposed in Alternative 2 has the potential to impact populations that use and depend on cottonwood trees for nesting, foraging, or shelter. Some species of birds may relocate to similar habitat within the campground or nearby forest. For other species, the tree removal may result in the permanent, direct loss of habitat, a reduction of habitat security, and increased habitat fragmentation. Although these effects would not have population level impacts on such species, they may cause displacement, competition, higher predation, and lower survival of some individuals. Restoration of approximately 8.0 acres of habitat in the G and the Group loops would offset some of the direct habitat loss proposed in E and F loops and the leach field/ septic tank area; however vegetation structure in the restored area may not be similar to what is removed for campground improvements proposed in Alternative 2. Impacts from the removal of vegetation, mainly cottonwood trees, would have long-term, local and minor impacts to wildlife special-concern species and amphibian and reptiles although these impacts would occur in areas currently degraded because of high disturbance levels from existing campground uses and in an area of widespread availability of cottonwood habitat. In order to minimize these impacts, it is recommended that fewer trees be removed during campsite and leach field development.

Bird Species of Concern and Neotropical Migratory Birds

Neotropical migratory birds are of particular interest to wildlife managers because they have been experiencing severe population declines throughout their North American range. Habitat fragmentation and loss of winter range are at least two factors believed responsible for these declines. Bird species of special concern may be vulnerable to extirpation at the global or state level due to inherent rarity, significant loss of habitat, or sensitivity to human-caused mortality or habitat disturbances (Fertig and Beauvais 1999). These factors cumulatively contribute to reduced reproductive success, increased mortality risks and reduced availability of secure habitat to bird species of special concern. Direct and indirect effects to bird species of special concern and/or neotropical migratory birds resulting from Alternative 2 would be greater to those described in Alternative 1. Direct impacts from Alternative 2 would include permanent loss of cottonwood trees although this loss would occur in an area with existing high human use and low habitat quality. Direct effects could occur to birds that nest in these habitats or use these habitats for foraging or cover. Indirect impacts associated with the development of loop E and the leach and septic fields would include noise and human disturbances that would be short-term and negligible to breeding, nesting, or migrating birds. Restoration of approximately eight acres of habitat in the G and the Group loops would offset some of the direct habitat loss proposed in E and F loops and the leach field/ septic tank area; however vegetation structure in the restored area may not be similar to what is removed for campground improvements proposed in Alternative 2. Impacts from the removal of vegetation, mainly cottonwood trees, would have long-term, local and minor to negligible impacts to neotropical migratory birds although these impacts would occur in areas currently degraded because of high disturbance levels from existing campground uses and in an area of widespread availability of cottonwood habitat. In order to minimize these impacts, it is recommended that fewer trees be removed during campsite and leach field development.

Other potential impacts on special-concern species would be similar to Alternative 1.

Cumulative Impacts: Cumulative impacts associated with Alternative 2 would be similar to Alternative 1 except that Alternative 2 would contribute to additional habitat loss, fragmentation and degradation from the removal of approximately 198 cottonwood trees. However, there would be an overall reduction of the campground footprint from the abandonment of the two western-most existing loops in the campground. As a result, cumulative impacts would be beneficial minor to some wildlife species and adverse minor to others.

Conclusion: Direct, indirect, and cumulative impacts to wildlife resources would be adverse and negligible to adverse and beneficial minor as a result of implementing Alternative 2. It was also determined that Alternative 2 “**may affect, but is not likely to adversely affect**” the gray wolf and Yellow-billed cuckoo. Consistent with § 1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on wildlife and their habitats, including special concern, threatened, or endangered species in the area. The effects on wildlife resources under Alternative 2 would not be unacceptable because the potential adverse impacts are anticipated to be only negligible to minor in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of wildlife (by definition, impairment is

worse than unacceptable impacts).

Recommend mitigation measures:

To limit potential impacts to wildlife, the following mitigation measures are recommended under Alternative 2.

1. Maintain Gros Ventre campground season of use from late May through early October. This is to ensure that migrating ungulates have access to an important seasonal migration corridor and associated staging areas, that wintering moose have access to undisturbed crucial winter range, and that public safety is maintained during the elk reduction program. To the extent practical, all activities associated with preparing the campground for opening and closing would occur within the late May – early October operation season.
2. Conduct campground upgrade activities during the campground operating season (late May – early October). This is intended to allow ungulates undisturbed access to crucial habitats during critical timeframes (e.g. migration and winter seasons).
3. Ensure that all administrative loop residents are thoroughly briefed on park food storage regulations.
4. Conduct regular food storage compliance patrols in administrative loops.
5. Require the contract concessioner to develop a plan for installation of food storage boxes in all campground sites within the next 5 years. Evaluate the need for food storage boxes in administrative sites.
6. No bird nests, eggs, or parts thereof will be removed during construction activities as require under the Migratory Bird Treaty Act. Surveys must be conducted prior to any tree or other vegetation removal that is conducted between May 1 and July 31. Active nests located outside of this period must also be protected until young leave the nest or the nest fails.
7. Protect owl and raptor nests located in the campground from human disturbance.
8. Minimize the number of cottonwood trees and other vegetation removed for campsite, leach field and septic tank development.

3.6 PARK OPERATIONS AND PARTNERSHIPS

Park operations refer to the adequacy of staffing levels and the quality and effectiveness of the park infrastructure in protecting and preserving vital resources and providing for an effective visitor experience. Infrastructure facilities include the roads that are used to provide access to and within the park (both administrative and visitor use), housing for staff required to work and live in the park, visitor orientation facilities (visitor centers, developed and interpreted sites, visitor center bookstores, and other interpretative features), administrative buildings (office and workspace for park staff), management support facilities (garages, shops, storage buildings, and yards used to house and store maintenance equipment, tools, and materials), and utilities such as phones, sewer, water and electric.

AFFECTED ENVIRONMENT

In 2007, Grand Teton Lodge Company (Vail & Associates) was awarded the concession contract for Gros Ventre Campground operations. The contract is a 15-year contract that includes National Park Service-required upgrades and improvements. Campground improvements consistent with the business prospectus for the campground's operations contract include replacement of utility systems and improvements that enhance visitor experience and increase occupancy. Specific examples include utility hookups to camping sites, new shower and laundry facilities, replacement of picnic tables and fire rings, improved and accessible comfort stations, and an improved dump station.

Despite being the largest of the six campgrounds in Grand Teton National Park, Gros Ventre Campground is the least visited. Since 2001 occupancy rates have ranged from 21-22 percent over an entire season. The 385-site campground has many facilities spread out over 170 acres, which requires a considerable amount of time dedicated to daily operations and maintenance by park and concessions staff. Park staff is responsible for maintenance of the utilities infrastructure within the campground, while the concessioner conducts routine maintenance on comfort stations and other non-utility facilities. The maintenance staff spends approximately two hours a day on routine maintenance checking on equipment, such as lift stations and monitoring water quality.

Among the six campgrounds in Grand Teton National Park, there are a combined total of 35 administrative campsites for National Park Service and partner use. The Gros Ventre Campground contains twenty of these sites. In 2006, the Gros Ventre Campground Interdisciplinary Team identified a park-wide need of over 70 additional full hookup administrative campsites for National Park Service and partner use. This number is expected to grow in the near future and does not account for a large and unmet need to provide RV spaces for contractors working in the park.

ENVIRONMENTAL CONSEQUENCES

Methodology

Impacts to park operations focus on (1) employee and visitor health and safety, (2) ability to protect and preserve resources, (3) staff size (whether staffing needs to be increased or decreased), (4) existing and needed facilities, (5) communication (i.e., telephones, radio, computers, etc.), and (6) appropriate utilities (sewer, electric, water). Park staff knowledge was used to evaluate the impacts of each alternative and is based on the current description of park operations presented in the Affected Environment section of this document.

Impact Threshold Definitions

Negligible: A change in operations that is not measurable or perceptible.

Minor: Change in an operation that is slight and localized with few measurable consequences.

Moderate: Readily apparent changes to park operations with measurable consequences.

Major: A severely adverse or exceptionally beneficial change in park operations.

Effects of Alternative 1 - No Action on Park Operations and Partnerships

Direct/ Indirect Impacts: Under Alternative 1, operation and maintenance activities for existing facilities would continue unchanged, except those actions described in section 2.2 (Elements Common to All Alternatives). Impacts would include a continuously increasing maintenance workload due to a lack of replacement of or substantial improvements to the aging existing infrastructure, comfort stations, campsites and other facilities.

Maintenance staff would experience an increasing need to respond to emergency actions each season resulting from aging and deteriorating infrastructure. Failure of infrastructure systems including sewer mains, water mains, water storage and wells, RV dump stations, comfort stations and leach fields increases the possibility of public exposure to unsanitary conditions and possible temporary or even long term closure of the campground.

The four comfort stations that are located in flood prone areas of the campground would continue to have the potential to flood as they have in previous years, postponing opening until the water has receded. The existing septic tank serving the dump station leach field would need to be pumped more often than would be required for a properly operating system. As a result, workloads and costs from pumping out and proper disposal of the waste would increase.

Potable water quality is affected by the existing poor condition of the potable water system that was constructed in the late 1960s. It consists of a single well, pump house, 1,500-gallon pressure tank and chlorination treatment system. There is no back-up well or pump in the system; therefore failure of the system or interruption of service would result in a lack of potable water and sanitary services for visitors and subsequent closure of the campground.

There would continue to be a shortage of administrative campsites within Grand Teton National Park needed to support the park's mission. The 35 existing administrative campsites would remain in the park, leaving the park short 35 or more of the administrative campsites needed. Insufficient employee housing in the park requires many seasonal employees to travel to and from a very limited number of government furnished housing units in the Town of Jackson, WY to perform their work. Many more positions are not filled at all due to a lack of housing for these employees. For example, a critical partner, Grand Teton Association, relies almost entirely on recreational vehicle users for their seasonal staffing, as it is one of the few options for housing in the area. This results in shortages of staff due to lack of adequate administrative sties. The Superintendent has identified the current housing shortage as the most critical need in the park. The lack of available and affordable housing for park employees is directly related to the housing crisis that affects Teton County as a whole. The inventory of available housing in Teton County, particularly in and around the Town of Jackson, is extremely limited and expensive. The inability of almost all park employees, regardless of pay grade or salary level, to afford housing in the local community or within reasonable (90 minute) commuting distance is a substantial impediment to successfully

recruiting and or retaining the large seasonal workforce required to meet the National Park Service mission at Grand Teton. This requires that the National Park Service and its partners provide housing for the vast majority of their employees. Over the last several years there have been numerous occasions where well qualified candidates have been offered key positions and have either declined offers or withdrawn from consideration due to inadequate housing. Construction of these administrative full hookup RV sites would markedly improve, but not completely solve the park's housing crisis. Park operations would continue to suffer from inadequate staff required to perform operations and maintenance work in the Gros Ventre Campground and throughout the park.

In addition, employees currently residing in the campground have inadequate shower and laundry facilities for proper hygiene and there is a lack of sites which serve employees with disabilities.

Under Alternative 1, resultant direct and indirect impacts to park operations would be local, adverse, moderate and long-term. This is due, in part, to a larger issue of operational impacts of deferred maintenance within Grand Teton National Park. The total deferred maintenance of the park is estimated at \$125 Million, which has a wide impact on park operations. No action to improve and reduce the number of the facilities within this campground would perpetuate this impact.

Cumulative Impacts: Relevant recent, ongoing and reasonably foreseeable projects in the Park are expected to have adverse minor to moderate long-term cumulative impacts on park operations. The relative contribution of Alternative 1 on park operations would be negligible to adverse minor and long-term. Overall cumulative impacts would remain adverse, minor to moderate and long-term.

Conclusion: Under Alternative 1, there would be adverse minor to moderate direct, indirect, and cumulative impacts to park operations.

Effects of Alternative 2 – Action Alternative (Preferred) on Park Operations and Partnerships

Rehabilitation of the facilities and infrastructure in the Gros Ventre Campground would enhance the park's ability to provide safe visitor facilities and services, including the treatment of potable water and wastewater, reduce operations and maintenance efforts required to manage the campground and improve the quality and efficiency of overall park operations.

Abandonment of existing leach fields and construction of a new wastewater main line would assure sustained operation of the campground, without the additional costs of emergency repairs or closures due to current system failures. The wastewater infrastructure upgrades would eliminate current failures to the wastewater systems, contamination of the ground water, and the risk of employee exposure to raw sewage during emergency operations.

Constructing a new potable water treatment system consisting of a well and pump house with pressure tank and chlorination system would eliminate latent problems in the existing water infrastructure. This would improve the ability to ensure the campground has a continuous supply of clean, potable water throughout the season for decades to come.

Elimination of two campground loops, six aging comfort stations, and a portion of amphitheater parking would reduce the operational and maintenance costs associated with operating and maintaining those facilities and the utilities that support them. Over the long term it would also reduce the introduction and presence of exotic vegetation thereby reducing the costs of exotic plant management in the campground. Eliminating loops G and H would result in the demolition of their four associated comfort stations, two of which are located in flood prone areas. Additionally the comfort stations in loop F would be demolished and new ones would be placed outside of flood prone areas, thereby reducing the costs of operating and maintaining these stations. The leaking wastewater lines and failing leach field that serve these stations would also be eliminated, which would reduce the risk of public exposure to raw sewage or the risk of raw sewage entering the ground water table and the Gros Ventre River.

Adding 34 administrative RV sites in loop E and expanding the 10 current administrative sites to accommodate modern vehicles would provide additional sites that are safer and more functional for National Park Service and partner employees. New shower stations and laundry facilities for administrative use would also provide a safe and sanitary area for employees in the campground to launder their clothing and maintain proper hygiene. This ultimately reduces the number of employee trips to town and the costs, inefficiencies, carbon footprint and traffic hazards associated with these additional trips.

Resultant direct and indirect impacts of Alternative 2 on visitor use and experience, including health and safety, would be adverse and minor in the short-term through disruptions in traffic patterns, utility services and availability of campground facilities. However, there would be beneficial moderate impacts in the long-term.

Cumulative Impacts: Relevant recent, ongoing, and reasonably foreseeable projects in the park are expected to have adverse minor to moderate long-term cumulative impacts on park operations. The relative contribution of Alternative 2 on park operations would be beneficial, minor, and long-term; however, overall cumulative impacts would remain adverse, minor to moderate, and long-term.

Conclusion: Under Alternative 2, there would be direct and indirect adverse and minor impacts in the short-term and beneficial, moderate impacts in the long-term. Actions proposed under Alternative 2 would have beneficial contributions to overall adverse, minor to moderate long-term cumulative impacts.

3.7 VISITOR USE AND EXPERIENCE (INCLUDING PUBLIC HEALTH AND SAFETY)

AFFECTED ENVIRONMENT

The campground is open from the beginning of May to mid October and is the earliest campground in the park to open and the latest to close. The campground is in close proximity to several visitor destinations in the southern area of the park and to the town of Jackson. The campground is located five miles east of Highway 26/89/191 along the Gros Ventre Road. The town of Kelly is approximately two miles to the east, and Blacktail Butte lies to the north across the Gros Ventre/ Kelly Road. The Gros Ventre Campground, at less than 10 miles from Jackson, is the closest of all five campgrounds to

town amenities. The campground is situated adjacent to the Gros Ventre River and its associated canopy of cottonwood trees and diverse wildlife habitat. The convenient yet natural and rustic nature of the campground results in over 20,000 campers being attracted to the campground each year.

Many of the current conditions of the Gros Ventre campground are directly relevant to visitor use and experience, including public health and safety. The campground is currently lacking in a diverse, safe and healthy camping experience for visitors. Comfort stations, amenities, and facility standards are in decline. There are no utility hookup sites or disability accessible sites in the campground. The current dump station configuration confines use to a single RV at a time and does not adequately accommodate larger, modern RVs. There are no electric hookup sites provided in the campground for visitor use. Water infrastructure upgrades are needed to ensure the campground has a continuous supply of clean, potable water. Further, there are leaking wastewater lines and a failing leach field, both of which could expose visitors to raw sewage or enable raw sewage to enter the ground water table and the Gros Ventre River.

ENVIRONMENTAL CONSEQUENCES

Methodology

The baseline information used to assess impacts to visitor experience is as described in the methodology section at the beginning of this chapter and includes park staff knowledge of the resources and site; occupancy rate and pattern data collected by the National Park Service and its concessioner; visitor surveys and public scoping comments; review of existing literature and park studies; information provide by specialists within the National Park Service and other agencies; and professional judgment.

Impact Threshold Definitions

- Negligible:* The impact is barely detectable, and/or will affect few visitors.
- Minor:* The impact is slight but detectable, and/or will affect some visitors.
- Moderate:* The impact is readily apparent and/or will affect many visitors.
- Major:* The impact is severely adverse or exceptionally beneficial and/or will affect the majority of visitors.

Effects of Alternative 1 - No Action on Visitor Use and Experience

Direct/ Indirect Impacts: Under Alternative 1, existing facilities and policies would remain in place. The 1960s infrastructure and facilities would continue to not meet the demands of today's visitors in the following ways: there are no facilities compliant with the Architectural Barriers Act of 1968 (e.g., campsites, comfort stations) in the campground; there are no RV electric hookup sites; and the water and wastewater systems and dump station do not meet the demands of large, modern RVs.

The condition of comfort stations would continue to decline, remain undersized in terms of demand and would continue to be out of compliance with current accessibility standards. Existing campsites would remain below current accessibility standards and visitors utilizing and needing universally accessible sites would continue to have a degraded visitor experience due to inadequate accessibility.

Failure of the water system or interruption of service would result in a lack of potable water and sanitary services for visitors and all of the associated consequences. Failure of wastewater infrastructure will result in exposure to raw sewage, disease transmission and other health and sanitary concerns. For example, the aging and degrading septic tank/leach field wastewater treatment system serving the RV dump station and contact station, as well as other aging infrastructure throughout the campground is nearing the end of its lifespan. There is an increasing risk of overflows or spills that could expose visitors or employees to diseases from sewage contamination. Keeping the comfort stations located in flood prone areas is also a continual risk, for flooding and contamination of the Gros Ventre River aquifer. Flooding of a comfort station, could result in contamination and exposure to fecal coliform in the Gros Ventre River aquifer, potentially causing a public health risk to recreational users of the River. Untreated wastewater contains higher concentrations of ammonia. Inadequate treatment due to system failures could result in higher concentrations of ammonia in the groundwater.

Resultant direct and indirect impacts of Alternative 1 on visitor use and experience would be adverse, moderate and long-term.

Cumulative impacts: Relevant recent, ongoing, and reasonably foreseeable projects in the Park are expected to have beneficial moderate long-term cumulative impacts on visitor use and experience. Moderate benefits to visitor use and experience are primarily associated with parkwide transportation-related projects. The relative contribution of Alternative 1 on visitor use and experience would be adverse minor and long-term; however, overall cumulative impacts would remain beneficial, moderate long-term.

Conclusion: Under Alternative 1, continuation of existing conditions would pose adverse moderate and long-term direct and indirect impacts and would have a negative contribution to overall beneficial moderate long-term cumulative impacts on visitor use and experience. Consistent with § 1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 1 would not result in any unacceptable impacts on visitor use and experience. The effects on visitor use and experience under Alternative 1 would not be unacceptable because the potential beneficial and adverse impacts are anticipated to be only moderate in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of visitor use and experience (by definition, impairment is worse than unacceptable impacts) under this alternative.

Effects of Alternative 2 - Action Alternative (Preferred) on Visitor Use and Experience

Direct/ Indirect Impacts: The rehabilitation and upgrade to the campground facilities and services would provide more visitor amenities and uninterrupted and safer services for the campground visitors. The reliability of the water and wastewater systems is largely unseen by visitors; however, when the system exhibits failures, it creates a tangible effect largely to a range of visitors. Water and wastewater system breakdowns would be greatly

reduced by the implementation of this project. The reconstruction of the dump station would increase its capacity, efficiency, and reduce waiting times for RV users staying in the campground.

Campground occupancy data collected over the past 10 years indicates that on average there would be only 7 nights each year where the campground demand would exceed the sites available under this alternative. Reduction in the size of the amphitheater parking lot area is not expected to adversely impact visitor use of this area for parking RVs and trailers because a substantial portion of this space would remain for this purpose. Reduction in the amphitheater parking lot and restoration of underused campground loop would return the campground to a more natural setting while maintaining its function. It is expected that the amphitheater programs and parking would not be impacted, and audiences would still be drawn from the Gros Ventre campground, as well as other areas of the park and the town of Jackson.

The relocation of comfort stations outside of the flood prone zone and construction of new Architectural Barriers Act of 1968 compliant comfort stations would beneficially impact visitor use and experience, as would the relocation and reconfiguration of group sites. Improvements and amenities associated with the new group sites would provide beneficial impacts to visitor use, and experience, as would the greater range of amenities (i.e. utility hook ups) proposed under Alternative 2. Electric hook ups would improve the visitor experience by providing a service requested by visitors and by reducing noise from visitor operated generators in campsites adjacent to the hookup sites. The replacement of above ground electric lines directly serving the campground with underground lines when possible would improve visitor experience by reducing the visual impact of the lines.

Resultant direct and indirect impacts of Alternative 2 on visitor use and experience would be beneficial, moderate, and long-term.

Cumulative impacts: Relevant recent, ongoing, and reasonably foreseeable projects in the Park are expected to have beneficial moderate long-term cumulative impacts on visitor use and experience. Moderate benefits to visitor use and experience are primarily associated with parkwide transportation-related projects. The relative contribution of Alternative 2 on visitor use and experience would be beneficial, minor, and long-term. Overall cumulative impacts on visitor use and experience would remain beneficial moderate long-term.

Conclusion: Under Alternative 2, the preferred action would pose beneficial moderate and long-term direct and indirect impacts and would positively contribute to overall beneficial moderate long-term cumulative impacts on visitor use and experience. Consistent with § 1.4.7.1 of *NPS Management Policies 2006* and the unacceptable impacts analysis method described earlier under “Methods for Analyzing Impacts,” Alternative 2 would not result in any unacceptable impacts on visitor use and experience. The effects on visitor use and experience under Alternative 2 would not be unacceptable because the potential beneficial impacts are anticipated to be only moderate in intensity and, thus, would not rise to the level where unacceptable impacts could occur. Because no unacceptable conditions would result, there would be no impairment of visitor use and experience. (by definition, impairment is worse than unacceptable impacts) under this alternative.

3.8 UNACCEPTABLE IMPACTS AND IMPAIRMENT ANALYSIS

As previously described, unacceptable impacts are those that fall short of impairment, but are still not acceptable within a particular park's environment. As defined in Section 8.2 of *NPS Management Policies 2006*, unacceptable impacts are those that would:

- Be inconsistent with a park's purposes or values, or
- Impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process, or
- Create an unsafe or unhealthful environment for visitors or employees, or
- Diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- Unreasonably interfere with
- Park programs or activities, or
- An appropriate use, or
- The atmosphere of peace and tranquility maintained in wilderness and natural, historic, or commemorative locations within the park, or
- National Park Service concessioner or contractor operations or services.

Chapter 1 describes the park's enabling legislation, its purpose and significance, and its fundamental resources and values. It also describes the National Park Service mission and mission goals, as well as special mandates, laws, policies, and administrative commitments that apply to management of the park. Taking all of these into consideration, neither of the alternatives evaluated in this document would result in unacceptable impacts (and thus would not result in impairment of park resources and values) for the following reasons:

- Neither alternative is inconsistent with the park's purposes and values.
- Neither alternative would impede the attainment of the park's desired future conditions for natural and cultural resources.
- The analysis indicated that the alternatives would not adversely affect the health and safety of park visitors or employees.
- Under both alternatives, visitors would continue to have opportunities to enjoy, learn about, or be inspired by park resources and values.

As described in Chapters 1 and 3, the National Park Service threshold for considering whether there could be impairment of "the scenery and the natural and historic objects and the wild life therein" for Grand Teton National Park is based on whether "major" (that is, significant) effect would occur. The impact analysis identifies less than major impacts for all natural and cultural resource topics. For the reasons described in the impact analysis for that topic, neither Alternative 1 nor Alternative 2 would result in impairment of park resources.

CHAPTER 4: CONSULTATION AND COORDINATION

4.1 LIST OF PREPARERS

Table 4.1 Preparers of this Gros Ventre Campground Rehabilitation Environmental Assessment

EA: LIST OF PREPARERS	
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Bob Wemple	Civil Engineer, Contractor
Margaret Wilson	Planner, Grand Teton National Park
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4.1 AGENCIES/ TRIBES/ ORGANIZATIONS/ INDIVIDUALS CONTACTED

A list of agencies, tribes, organizations and individuals contacted during the preparation of this document is available through the Grand Teton National Park Planning Office in Moose, Wyoming.

References

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APPENDIX A: AGENCY CORRESPONDENCES

H30(GRTE)

FEB 13 2009

Mary Hopkins
State Historic Preservation Officer
Barrett Building, 3rd floor
301 Central Avenue
Cheyenne, WY 82002

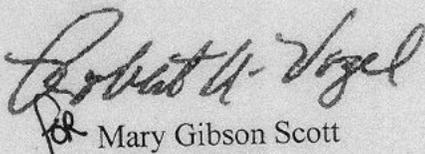
Dear Ms Hopkins:

The National Park Service proposes to rehabilitate the Gros Ventre Campground located in Grand Teton National Park. The proposed action includes: upgrading comfort stations to current accessibility standards; upgrading and/or replacement of critical campground infrastructure; installation of up to 50 visitor electric hook ups sites; conversion of one loop from visitor campsites to administrative campsites; and reducing the campground footprint by closing and restoring areas, thereby increasing critical wildlife habitat.

Preparation of the Environmental Assessment (EA) for this project 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 §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 800), I am notifying your office in advance of the park's intention to use the EA to meet its obligations under §106.

Should you have any questions, please contact Jacquelin St.Clair, Archaeologist, at 307-739-3664.

Sincerely,



Mary Gibson Scott
Superintendent

JStClair:cao:02/06/09

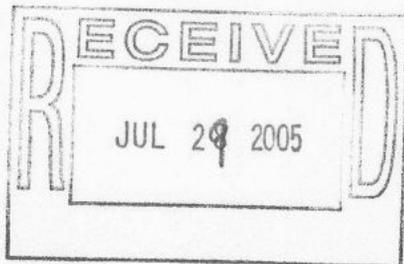
WYOMING GAME AND FISH DEPARTMENT

Dave Freudenthal, Governor



Terry Cleveland, Director

"Conserving Wildlife - Serving People"



July 27, 2005

WER 11205
National Park Service
Grand Teton National Park
Scoping Notice
Gros Ventre Campground Rehabilitation
Environmental Assessment

Mary Gibson-Scott
Superintendent
Grand Teton National Park
P.O. Drawer 170
Moose, WY 83012

Dear Ms. Gibson-Scott:

The staff of the Wyoming Game and Fish Department has reviewed the scoping notice for the Gros Ventre Campground Rehabilitation. We offer the following comments.

Terrestrial Considerations:

Managing elk that originate in Grand Teton National Park (GTNP) (or migrate through) is extremely important to our Department. During the expansion of GTNP in 1950, compromise provisions were included in the enabling legislation to address concerns regarding the management of the Jackson Elk Herd. Section 6 (a) of Public Law 81-787 outlines these provisions. The regulated hunting applied to lands in the Park east of the Snake River and in the northern portions of the Park. Within these open areas, restrictions have been enacted that close additional parklands to hunting. If the campground is expanded, elk movements and distribution may be impacted.

The season of operation may also impact other wildlife in this area. Moose are commonly observed throughout the footprint of the existing campground during the winter period. During aerial surveys, we have observed elk, bald eagles and trumpeter swans regularly utilizing the Gros Ventre River corridor.

Ms. Mary Gibson-Scott
July 27, 2005
Page 2 – WER 11205

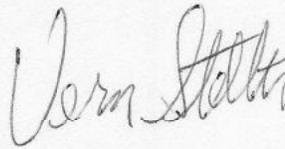
We recommend that the EA include an evaluation of elk movements based on the radio collared elk data, track data and road kill data collected in this area. We also recommend that the EA include an analysis of impacts the proposed projects will have on moose, bald eagles and trumpeter swans.

Aquatic Considerations:

There is limited information in the scoping notice, but at this point, we have no fisheries concerns.

Thank you for the opportunity to comment.

Sincerely,



for BILL WICHERS
DEPUTY DIRECTOR

BW:VS:as

cc: Temple Stevenson-Governor's Planning Office
USFWS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

**Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001**

In Reply Refer To:
ES-61411/W.25/WY9584

JUL 12 2005

National Park Service
Grand Teton National Park
Post Office Drawer 170
Moose, Wyoming 83012
Attn: Planning Office



Memorandum

To: Mary Gibson-Scott, Superintendent, Grand Teton National Park,
Moose, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field
Office, Cheyenne, Wyoming

Subject: Scoping Notice for the Gros Ventre Campground Rehabilitation

Thank-you for sending the scoping notice and request for comments on the Gros Ventre Campground Rehabilitation in Grand Teton National Park (GTNP), received in our office on June 16, 2005. The National Park Service (NPS) is seeking comments on proposed actions including Americans with Disability Act modifications, upgrades and/or replacement of all utilities, installation of full utility hook-ups, at approximately 80 visitor sites, construction of 1 or 2 shower and laundry facilities, and other necessary improvements.

When reviewing proposed actions of other agencies, the U. S. Fish and Wildlife Service (Service) focuses on three broad categories of trust resources: (1) threatened, endangered, and candidate species, (2) migratory birds, and (3) wetlands and riparian areas. The Service provides recommendations for protective measures for threatened and endangered species in accordance with the Endangered Species Act (Act) of 1973, as amended (50 CFR §402.13). Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703 and the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act.

Threatened and Endangered Species

Pursuant to Section 7(a)(2) of the Act amended, we are providing you with a list and short description of the threatened, endangered, and proposed species that may occur in GTNP and may have the potential to occur on or adjacent to the Gros Ventre Campground.

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Found throughout state
Canada lynx (<i>Lynx canadensis</i>)	Threatened	Montane forests
Gray wolf (<i>Canis lupus</i>)	Threatened	Greater Yellowstone Ecosystem
Grizzly bear (<i>Ursus arctos horribilis</i>)	Threatened	Montane forests
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Candidate	Riparian areas west of the Continental Divide

Bald Eagle: While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Adult eagles establish life-long pair bonds and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were fledged. During winter, bald eagles gather at night to roost in large mature trees, usually in secluded locations that offer protection from harsh weather. Bald eagles often return to use the same nest and winter roost year after year. In order to reduce potential adverse effects to the bald eagle, a disturbance-free buffer zone of 1 mile should be maintained around eagle nests and winter roost sites. Activity within 1 mile of an eagle nest or roost may disturb the eagles and result in take. If a disturbance-free buffer zone of 1 mile is not practicable, then the activity should be conducted outside of February 15 through August 15 to protect nesting birds and November 1 through April 15 to protect roosting birds.

Canada lynx: The Service published a Final Rule in the Federal Register on March 24, 2000 (65 FR 16052) listing the Canada lynx (*Lynx canadensis*) in the contiguous United States as threatened. Historically, lynx were observed in every mountain range in the state. Concentrations of observations occur in western Wyoming in the Wyoming and Salt River ranges and continuing north through the Tetons and Absaroka ranges in and around Yellowstone National Park. Numerous records have also come from the west slope of the Wind River Range, with fewer observations in the Bighorn and Uinta mountains (Reeve et al. 1986). In Wyoming, the lynx lives in subalpine/coniferous forests of mixed age and structural classes. Mature forests with downed logs and windfalls provide cover for denning sites, escape, and protection from severe weather. Early to mid-successional forest with high stem densities of conifer saplings provide optimal habitat for the primary prey of lynx, the snowshoe hare. Snowshoe hare reach their highest densities in regenerating forests that provide visual cover from predators and thermal cover (Wolff 1980, Litvaitis et al. 1985). It is likely that winter, when food is less

abundant and less nutritious and energy demands are higher, is the limiting season for snowshoe hares (Pietz and Tester 1983). To most benefit lynx, habitats should retain an overstory for concealment and forested connectivity between feeding, security, and denning habitats.

The Service has identified significant threats to the lynx including (1) loss and/or modification of habitat; (2) past commercial harvest (trapping), which is partially responsible for the extremely small lynx population; (3) inadequate regulatory mechanisms to protect lynx and their habitat; and (4) other factors such as increased human access into suitable habitat and human-induced changes in habitat allowing other species (e.g., bobcats and coyotes) to move into lynx habitat and compete with them. Examples of human alteration of forests include loss of and conversion of forested habitats through urbanization, ski area and other developments; fragmentation that leads to isolation of forested habitats by highways or other major construction; and certain timber harvesting practices and fire suppression measures.

Gray wolf: All wolves within Wyoming are now considered part of the nonessential experimental population. Although such wolves remain listed and protected under the Endangered Species Act of 1973, as amended (Act), additional flexibility is provided for their management under the provisions of the final rule and special regulations promulgated for the nonessential experimental population on November 22, 1994 (59 FR 60252). Requirements for interagency consultation under section 7 of the Act differ based on the land ownership and/or management responsibility where the animals occur. On any unit of National Park System or National Wildlife Refuge System lands, wolves that are part of the experimental population are considered a threatened species and the full provisions of section 7 apply. Thus, the Service and any other action agency is prohibited from authorizing, funding or carrying out an action within a National Park or National Wildlife Refuge that is likely to jeopardize the continued existence of the gray wolf. Formal section 7 consultation is required if a Federal action within these areas "may affect" the gray wolf.

Wolves are dependant on movements of big game populations and may occur in large ungulate migration, wintering, or parturition areas. During project activities wolves may change their use of the project areas based upon changes to big game population numbers and changes in movement of herds. Project planning should consider impacts to big game populations, including wintering grounds and migration corridors.

Grizzly bear: The grizzly bear has a wide range of habitat tolerance. Contiguous, relatively undisturbed mountainous habitat having a high level of topographic and vegetative diversity characterizes most areas where the species remains. Habitat loss and direct and indirect human-caused mortality is related to the decline in numbers. We strongly encourage the enforcement of food storage and garbage disposal stipulations. In addition, contractor should be aware of, and provide to their employees and subcontractors, information on the protected status of the grizzly bear and on appropriate personal safety measures and behavior in grizzly bear habitat. Project activities may occur during the denning season (November to March) to avoid disturbance to grizzly bears. We recommend that your actions comply with the Interagency Grizzly Bear Guidelines (1986) and the Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem (2003).

Candidate Species

Species that are candidates for listing as threatened or endangered that may occur within the project area are Yellow-billed cuckoo (*Coccyzus americanus*). The yellow-billed cuckoo may occur in riparian areas west of the Continental Divide in Wyoming. In recent years the species' distribution in the West has been reduced considerably. Biologists estimate that more than 90 percent of the bird's riparian habitat in the West has been lost or degraded as a result of human disturbance. Many Federal agencies have policies to protect candidate species from further population declines. We would appreciate receiving information on the status of this species in or near the project area. In addition, if the cuckoo is listed prior to completion of the project, unnecessary delays may be avoided by considering project impacts to candidates now. Many Federal agencies have policies to protect candidate species from further population declines. We would appreciate receiving any information available on the status of these species in GTNP.

Migratory Birds

Please recognize that consultation on listed species may not remove your obligation to protect the many species of migratory birds, including eagles and other raptors protected under the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703 and Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668.

The MBTA, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Under the MBTA and BGEPA, the NPS has a mandatory obligation to protect the many species of migratory birds, including eagles and other raptors which may occur on lands under their jurisdiction. In order to promote the conservation of migratory bird populations and their habitats, the Service recommends that the NPS implement those strategies outlined within the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186, where possible.

Wetlands

The functions and values of wetlands are well documented and are especially important in the arid west. Substantial degradation diminishes the effectiveness of wetlands to function as food, cover, and breeding sites for wetland dependent species; sediment transport systems; water retention/storage sites; contaminant sinks; and chemical exchange sites. To ensure the Service has sufficient information to assess project impacts on wetlands, assessments should include:

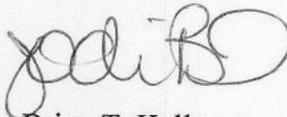
1. An enumeration of the acreage of wetlands, by type, impacted by the proposed action.
2. A discussion of why wetlands cannot be avoided.

3. A description of the functions and values of wetlands present including sediment transport, value as water storage sites, value to aquatic and terrestrial organisms, value as contaminant sinks and associated risks of water removal.
4. Measures that will reduce or eliminate adverse impacts to wetlands such as a mitigation plan to offset unavoidable impacts, protective buffers, seasonal and physical restrictions, maintenance of natural hydrograph, and development and implementation of a monitoring program to track the effectiveness of mitigation measures.
5. Results of wetland monitoring or management activities in, or adjacent to, the proposed project site.
6. The anticipated short and long term effects to wetland and riparian areas during and after project completion.

We recommend the Federal agency address each of the above concerns where applicable to the project. Without this information it may be difficult for the Service to effectively review assessments.

Thank you for the opportunity to comment on the proposed project. Please keep this office informed of any developments or decisions concerning the Gros Ventre Rehabilitation Project. If you have any questions regarding this letter or your responsibilities under the Act, please contact Thomas Gorman of my staff at the letterhead address or phone (307) 772-2374, extension 37.

Sincerely,



 Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: WGFD, Statewide Habitat Protection Coordinator, Cheyenne (V. Stelter)
WGFD, Non-Game Coordinator, Lander (B. Oakleaf)

Literature Cited:

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L7619(GRTE)

CERTIFIED MAIL: Return Receipt Requested

(TRIBE) Business Council
XXX, Chairman
P.O. Box XXX
(LOCATION), (ZIP)

Dear (NAME):

The National Park Service proposes to rehabilitate the Gros Ventre Campground located in Grand Teton National Park. An Environmental Assessment (EA) will be sent to you in late spring or early summer. With the EA, we will be inviting your comments and recommendations on the proposed alternatives and analysis.

Gros Ventre Campground Rehabilitation and Restoration, includes actions such as: upgrading comfort stations to current accessibility standards; upgrading and/or replacement of critical campground infrastructure; installation of up to 50 visitor electric hook ups sites; conversion of one loop from visitor campsites to administrative campsites; and reducing the campground footprint by closing and restoring areas, thereby increasing critical wildlife habitat. The campground would remain a seasonal campground, closing for the winter season.

We look forward to your participation in the Gros Ventre Campground Rehabilitation planning process for Grand Teton National Park. We believe that your participation in this planning effort will result in better resources management. Should you have any questions, desire additional information, please contact Gary Pollock, Management Assistant, at 307-739-3428, or Jacquelin St.Clair, Archaeologist at 307-739-3664.

Sincerely,

Mary Gibson Scott
Superintendent

APPENDIX B: LIST OF INVASIVE PLANT SPECIES FOR GROS VENTRE CAMPGROUND REHABILITATION EA

Poa bulbosa
Poa pratensis
Poa compressa
Bromus tectorum
Bromus inermis
Dactylis glomerata
Hordeum jubatum
Phleum pratense
Alyssum alyssoides
Melilotus officinale
Medicago sativa
Medicago officinalis
**Tragopogon dubius*
Lactuca scariola
**Cirsium arvense*
**Carduus nutans*
**Centaurea maculosa*
Taraxacum officinale
Taraxacum laevigatum
Lappula redowskii
Thlaspi arvense
Trifolium repens
Trifolium pratense
**Cynoglossum officinale*
Onobrychis viciifolia
**Linaria vulgaris*
**Cirsium vulgare*
Erodium cicutarium
Alyssum alyssoides
Descurainia sp.
Polygonum sp.
Verbascum thapsis

Seven of the exotic plants, those shown with an *asterisk, are listed as noxious weeds in the state of Wyoming, and in Teton County.