

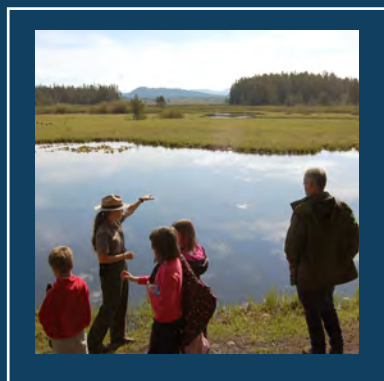


COLTER BAY VISITOR SERVICES PLAN/ ENVIRONMENTAL ASSESSMENT

JULY 2012



THIS BAY IS NAMED FOR
JOHN COLTER
DISCOVERER OF THE TETON MOUNTAINS AND
SCENIC WONDERS OF THE UPPER YELLOWSTONE.
EXPERIENCED AS A HUNTER FOR THE 1804-1806
LEWIS AND CLARK EXPEDITION, HE EXPLORED
THIS REGION IN WINTER OF 1807-1808
IN THE EMPLOY OF FUR TRADER MANUEL LISA.
DEDICATED ON THE 150TH ANNIVERSARY
OF COLTER'S HISTORIC PASSAGE.
1957
WYOMING HISTORICAL SOCIETY
PARTICIPATING



U.S. Department of the Interior
National Park Service

Colter Bay Visitor Services Plan and Environmental Assessment

Grand Teton National Park

Wyoming

Summary

The Colter Bay developed area on the eastern shore of Jackson Lake is a popular destination for visitors to Grand Teton National Park and for visitors traveling to or from Yellowstone National Park. The area seasonally offers a complete range of visitor services, facilities, and opportunities. The purpose of the Colter Bay Visitor Services Plan is to guide decision making for redevelopment (and restoration) in the general vicinity of Colter Bay Visitor Center. Until recently, the David T. Vernon Collection of American Indian Art has been stored and exhibited at the visitor center. The collection is now stored at the Western Archeological and Conservation Center in Tucson, Arizona, where it will stay until a suitable storage and exhibit facility is available at Grand Teton National Park. It is becoming increasingly difficult to sustainably operate and maintain the visitor center due to its age, condition, and numerous critical system deficiencies. The facility does not meet museum standards, minimally meets visitor service and administrative needs, and does not fully attain universal accessibility requirements. In conjunction with reassessing what NPS functions and facilities should be provided in the project area, the National Park Service is considering what changes might be needed in associated parking, vehicular, and pedestrian circulation areas to improve visitor experience, mitigate safety concerns, and protect natural and cultural resources.

This document describes three action alternatives for improving NPS visitor service facilities in the general vicinity of the existing Colter Bay Visitor Center. A fourth “no-action” alternative describes continuation of existing management and serves as a basis of comparison for the three action alternatives. The four alternatives are described in “Chapter 2: Alternatives.” Key impacts of implementing the alternatives are described in “Chapter 4: Environmental Consequences.” Summary tables of the alternatives and impacts are provided at the end of chapter 2.

This document has been distributed to agencies and interested organizations for their review and comment. The public comment period for this document will last for 30 days after the document is made available to the public. If you wish to comment on the environmental assessment, you may submit comments using the address below. Our practice is to make all public comments available for public review. Individual respondents may request that we withhold their name and/or home address from the record, which we will honor to the extent allowable by law. *If you want us to withhold your name and/or address, you must state this prominently at the beginning of your comment.* We will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Please submit comments online at: <http://parkplanning.nps.gov> and select Grand Teton National Park. (This is the preferred method for submitting comments.) Alternatively, you may mail comments to: Superintendent, Attn: Colter Bay VSP, Grand Teton National Park, PO Drawer 170, Moose, WY 83012-0170.

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PURPOSE AND NEED



Colter Bay Amphitheater



INTRODUCTION

INTRODUCTION TO THE PLAN

This Colter Bay Visitor Services Plan and Environmental Assessment presents and analyzes four alternative ways of managing National Park Service (NPS) visitor services at the Colter Bay area of Grand Teton National Park. The plan is needed because the Colter Bay Visitor Center and David T. Vernon Indian Arts Museum (together referred to as the Colter Bay Visitor Center) no longer meet visitor and administrative operational needs. The environmental assessment portion of this document assesses the potential environmental impacts of each of the four alternatives.

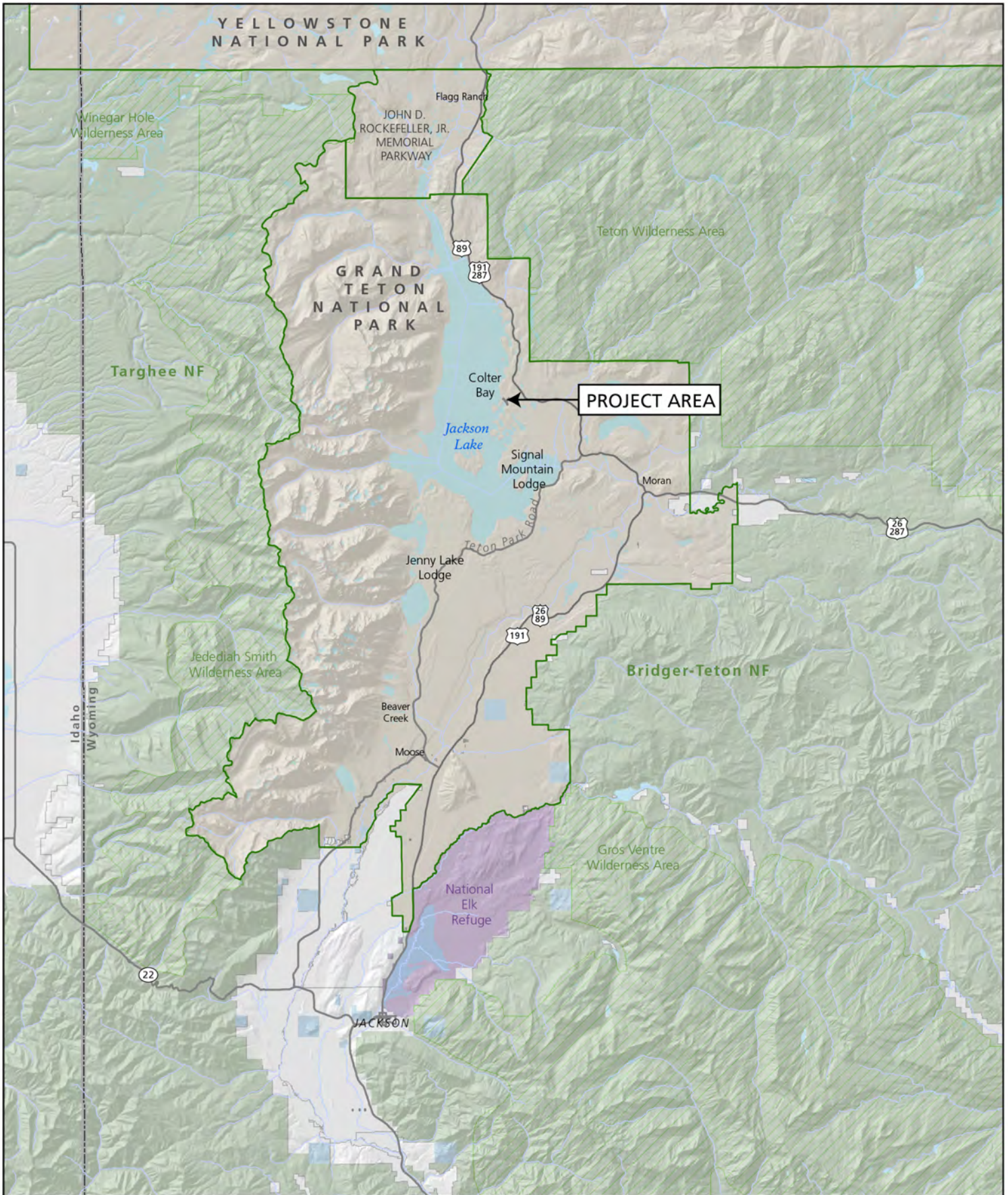
BRIEF DESCRIPTION OF THE PROJECT AREA

The Colter Bay developed area is on the eastern shore of Jackson Lake at Colter Bay, approximately 28 miles north of Moose, Wyoming, and 18 miles south of Yellowstone National Park (see “Location” map). Colter Bay is a popular destination for day and overnight visitors to Grand Teton National Park and for visitors traveling to or from Yellowstone National Park. From early May through early October, the area offers a complete range

of visitor services, facilities, and opportunities to experience the spectacular scenery and land and water environments of Grand Teton National Park.

Most Colter Bay facilities were constructed by the late 1950s to early 1960s. Concessions facilities, which are not addressed by this plan, include a large tent campground and recreational vehicle (RV) campground, a general store/gift shop, a restaurant and grill, guest log cabins and tent cabins, a marina, stables, fuel station and convenience store, laundry/shower facility, and a concession staff housing area. Additional visitor facilities include an outdoor amphitheater, a picnic area and swim beach. National Park Service administrative facilities include a maintenance and operations center and NPS staff housing area (see “Colter Bay Vicinity” map).

The project area is at the southwest end of the Colter Bay developed area, in the vicinity of the visitor center. It includes the large three-“armed” parking area that serves the visitor center, store/gift shop, restaurant and grill, and marina. Detailed descriptions of the facilities and resources comprising the project area can be found in chapter 3.

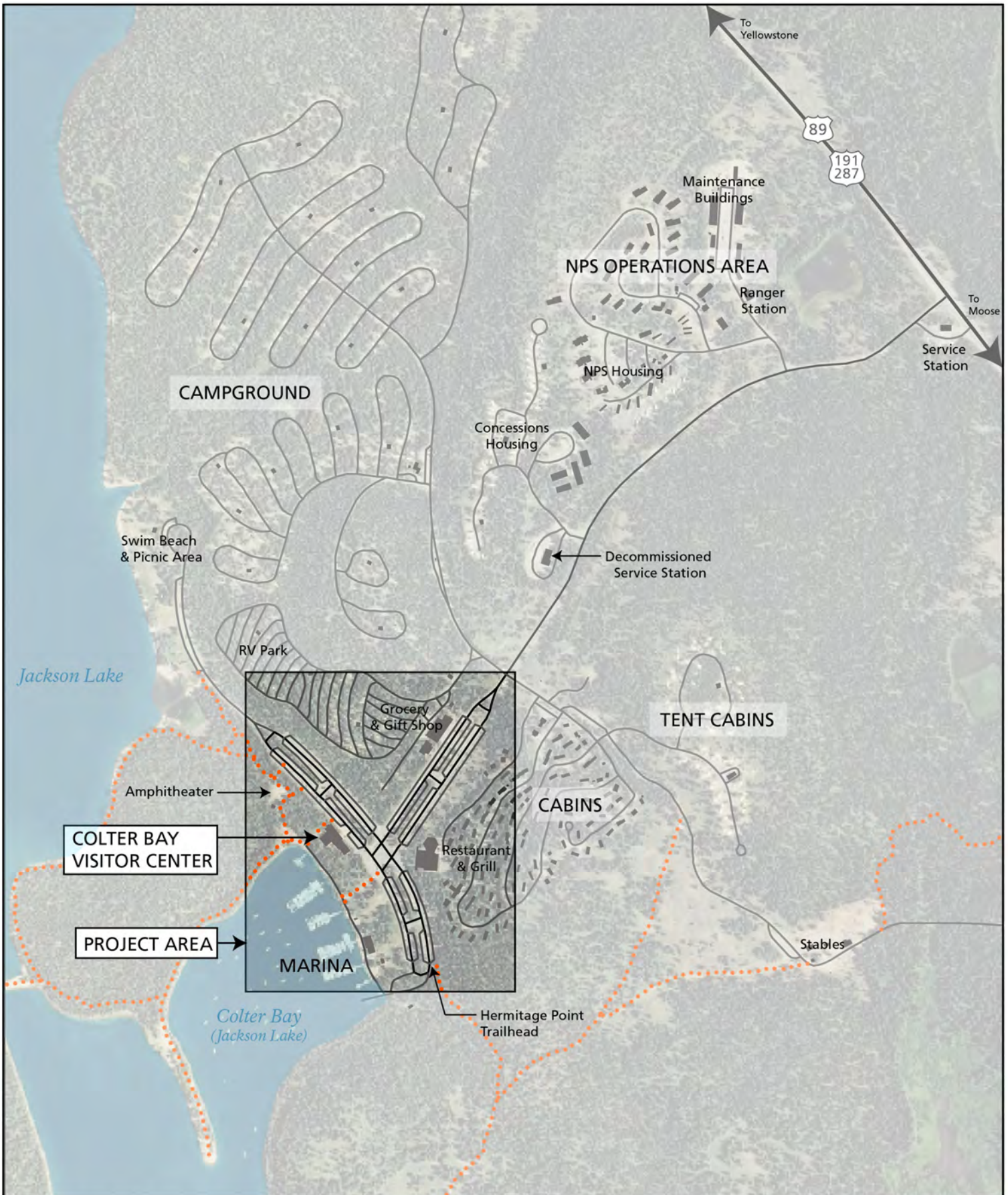


LOCATION

Colter Bay Visitor Services Plan
 Grand Teton National Park, Wyoming

November 1, 2011

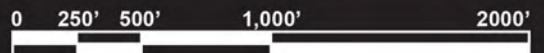




COLTER BAY VICINITY

Colter Bay Visitor Services Plan
Grand Teton National Park, Wyoming

November 1, 2011



PURPOSE AND NEED FOR THE PLAN

The purpose of the Colter Bay Visitor Services Plan is to guide decision making for redevelopment (and restoration) in the general vicinity of the Colter Bay Visitor Center. The visitor center was built in 1959 and was enlarged in 1972 to store and exhibit the David T. Vernon Collection of American Indian Art (herein referred to as the Vernon Collection), a nationally significant collection of items representing more than 100 tribes and cultural areas. The visitor center / museum building is becoming increasingly difficult to sustainably operate and maintain due to its age, condition, and numerous critical system deficiencies. These deficiencies

result in the facility only minimally meeting visitor service and administrative needs, not fully attaining universal accessibility requirements, and not meeting museum standards for the preservation, display, and interpretation of the Vernon Collection. An analysis of the facility's condition and deficiencies indicates that complete facility replacement is the most appropriate course of action. In conjunction with reassessing what NPS functions and facilities should be provided in the project area, the National Park Service is considering what changes might be needed in associated parking, vehicular, and pedestrian circulation areas to improve visitor experience, mitigate safety concerns, and protect natural and cultural resources.

GUIDANCE FOR THE PLANNING EFFORT

The following statements regarding Grand Teton National Park's purpose, significance, fundamental resources and values, and other important resources and values were taken from the *Grand Teton National Park Foundation for Planning and Management* (2006).

PARK PURPOSE

The park purpose is the specific reason for establishing a particular park. Statements of the park's purpose are grounded in a thorough analysis of park legislation (or executive order) and legislative history that documents shared assumptions.

The purposes of Grand Teton National Park are as follows:

- Preserve and protect the spectacular scenery of the Teton Range and the valley of Jackson Hole.
- Protect a unique geologic landscape that supports abundant diverse native plants and animals and associated cultural resources.
- Protect wildlands and wildlife habitat within the Greater Yellowstone Area, including the migration route of the Jackson elk herd.
- Provide recreational, educational, and scientific opportunities, compatible with these resources, for enjoyment and inspiration.

PARK SIGNIFICANCE

Park significance statements express why park resources and values are important enough to warrant national park designation. Statements of the park's

significance describe why an area is important within a global, national, regional, and systemwide context and are directly linked to the purpose of the park.

Grand Teton National Park is significant for the following reasons:

- The iconic mountain landscape of the Teton Range rises dramatically above the flat valley of Jackson Hole creating a compelling view that has inspired people to explore and experience the area for thousands of years. The sudden rise of rugged peaks contrasts with the horizontal sagebrush flats. Glacial lakes at the foot of the mountains reflect and expand the view. Opportunities to view an impressive array of wildlife are extraordinary. The awesome grandeur of the ever present Teton Range under changing weather and seasons provides a superlative setting for unmatched visitor experiences.
- Grand Teton National Park preserves one of the world's most impressive and highly visible fault block mountain ranges that abruptly rises 7,000 feet and is juxtaposed with landscapes shaped by glacial processes and braided river geomorphology. The Teton Range is one of the continent's youngest mountain ranges, yet exposes some of the oldest rocks on earth.
- Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway are at the heart of one of the earth's largest intact temperate ecosystems with a full

complement of native Rocky Mountain plants and animals, including grizzly bears, wolves, Canada lynx, wolverines, North American bison, pronghorn, and one of the world’s largest elk herds.

- The park and parkway represent one of the most notable conservation stories of the 20th century, which continues to inspire present and future generations. The formation of the park, a process that took more than half a century, was a struggle between private economic interests and a concern for conserving the Teton Range and valley floor. From prehistoric times to the present day, numerous diverse cultures, cultural trends, and cultural values have influenced the Teton Range and Jackson Hole valley.
- Within the park and parkway, visitors can easily experience peaceful solitude, wilderness character, and a rare combination of outdoor recreational and educational activities, world-renowned wildlife and landscapes, and the cultural amenities of a vibrant community throughout the year. Visitors of all abilities and interests can enjoy opportunities for physical, emotional, and inspirational experiences in an unspoiled environment.
- As part of the Greater Yellowstone Ecosystem, the park and parkway offer easily accessible and unparalleled opportunities for scientific research and educational study of temperate zone natural systems and processes in a range of elevations, and the human relationships to these systems. The relatively pristine landscape serves

as a “control” or baseline for scientific study.

FUNDAMENTAL RESOURCES AND VALUES

Park fundamental resources and values are the most important systems, processes, features, visitor experiences, stories, scenes, sounds, scents, or other resources and values to be communicated to the public about a park. They warrant primary consideration during planning and management because they contribute to significance and are critical to achieving the park’s purpose.

Scenery

- natural beauty, wildlife, clean air, relative lack of development
- sagebrush flats provide a platform for viewing

Geologic Processes

- Teton fault and other seismic areas
- ongoing glacial/hydrologic processes
- volcanic history and linked underground geothermal features and systems
- braided river geomorphology

Ecological Communities

- geography, location, size, and connectivity of the Greater Yellowstone Ecosystem
- extreme topography in a small area leads to diverse vegetative communities
- full complement of native birds and mammals—natural predator-prey interactions reflect the health of the ecosystem

- natural occurrences, such as fire, landslides, flooding, drought, and insect infestations, are allowed to influence the landscape

Aquatic Resources

- lakes, free-flowing water
- riparian habitat for native species, including Yellowstone cutthroat trout and Snake River cutthroat trout
- clean water, including outstanding natural resource waters

Cultural History and Resources

- American Indian use and spiritual reverence
- history of fur trade and westward expansion reflected in place names, paintings, photographs, homestead structures, and dude ranches
- story of “*Crucible for Conservation*” evident in structures such as the Maud Noble cabin and Murie Ranch, and John D. Rockefeller, Jr. Memorial Parkway
- mountaineering history of the Teton Range

Visitor Experience in an Outstanding Natural Environment

- spectacular setting and distinctive natural environment
- opportunities to observe wildlife
- full spectrum of access, ability levels, activities, interpretation, and educational opportunities are available year-round
- wilderness character, opportunities for solitude, natural lightscapes, natural soundscapes

OTHER IMPORTANT RESOURCES AND VALUES

Some park resources and values may have particular importance that warrants special consideration during planning, even though they do not contribute directly to the purpose and significance of the park.

Other Cultural Resources

- natural historic landmarks: Jackson Lake Lodge, Murie Ranch
- park development structures, i.e., Civilian Conservation Corps
- archeological resources

Vernon Collection (American Indian items)

Park Museum Collection

Existing Assets

- facilities—roads, trails, buildings, utilities, concessions
- base of support for research and education such as the University of Wyoming – National Park Service Research Center, Murie Center, and Teton Science School
- NPS operations (staff, annual operating budget)
- concessions and commercial services
- partners and volunteers

Sustainable Economic Contribution to the Regional Economy

- visitor spending
- direct federal spending
- large percentage of local jobs and income attributed to park and related tourism

GOALS FOR THE PLAN

The planning team developed the following goals, which were helpful during alternatives development and evaluation.

- Accommodate critical NPS visitor service functions (e.g., information and orientation services).
- Increase sustainability of facilities.
- Decide whether the Vernon Collection (storage and exhibit space) should return to Colter Bay or to another location within the park.
- Highlight views of the Teton Range and improve opportunities to connect with Jackson Lake.
- Improve vehicular and pedestrian circulation; minimize traffic congestion.
- Improve access for people with disabilities.
- Improve wayfinding for visitors.
- Update facilities in ways that encourage visitors to explore the Colter Bay area on foot, leaving behind their parked cars.
- Reduce the impact of the Colter Bay built environment on natural and scenic resources.
- Size pavement appropriately (parking, roads, and/or walkways).
- Minimize costs (for funding and implementation reasons).

SELECTED RELATED LAWS, REGULATIONS, AND POLICIES

NPS Organic Act of 1916 – In this act Congress directed the National Park Service to manage units of the national park system “to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such manner and by

such means as will leave them unimpaired for the enjoyment of future generations” (16 *United States Code* [USC] 1).

National Historic Preservation Act of 1966, as Amended (NHPA) – Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing in the National Register of Historic Places (NRHP). All actions affecting the park’s cultural resources must comply with this legislation.

National Environmental Policy Act of 1969, as Amended (NEPA) – This act is implemented through regulations of the Council on Environmental Quality (40 *Code of Federal Regulations* [CFR] 1500–1508). The National Park Service has adopted procedures to comply with this act and council regulations, as found in Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, and its accompanying handbook.

Endangered Species Act of 1973, as Amended (ESA) – This act requires all federal agencies to consult with the Secretary of the Interior on any project or proposal that could impact federally endangered or threatened plants and animals (16 USC 1531–1544).

Redwood National Park Act of 1978, as Amended – This act states that the National Park Service must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 USC 1a–1).

Code of Federal Regulations – Title 36, chapter 1, provides regulations “for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas

under the jurisdiction of the National Park Service.”

Federal Leadership in Environmental, Energy, and Economic Performance, Executive Order 13514 – This executive order states, “It is the policy of the United States that Federal agencies shall . . . design, construct, maintain, and operate high performance sustainable buildings in sustainable locations. . .”

NPS Management Policies 2006 – The National Park Service has established policies for all national park system units under its stewardship. These are identified and explained in a guidance manual entitled *NPS Management Policies 2006*. The alternatives considered in this document incorporate and comply with the provisions of these mandates and policies.

SCOPING, ISSUES, AND RELATIONSHIP TO OTHER PLANS

PUBLIC SCOPING

Scoping is an early and open process aimed at defining the scope of the proposal and identifying related issues. The scoping process is used to identify issues for detailed analysis and to narrow the scope of the environmental analysis by eliminating issues that do not warrant detailed consideration.

The National Park Service conducted scoping with the public and interested and affected organizations and agencies. Park staff members were also consulted as the plan / environmental assessment was developed. Scoping helped to refine the purpose and need, and determine issues, concerns, and resource impact topics (i.e., resources that could be affected by implementation of a given course of action or alternative).

Scoping for the Colter Bay Visitor Services Plan / Environmental Assessment began on October 21, 2010, with publication of a scoping newsletter. The newsletter provided background information on the project, preliminary project constraints, and preliminary planning ideas about what the plan should address, and a comment/response form. A press release regarding initiation of the planning effort was issued on December 6, 2010. Public input was coordinated through the NPS Planning, Environment, and Public Comment (PEPC) website. The comment period for the scoping newsletter ended on January 7, 2011—26 comments, including 4 from stakeholder organizations, were received during this early comment period.

PLANNING ISSUES AND CONCERNS

Colter Bay Visitor Center Safety, Sustainability, and Access for the Disabled

It is becoming increasingly difficult to sustainably operate and maintain the Colter Bay Visitor Center due to its age, configuration, condition, and numerous critical system deficiencies. These include deficiencies to heating, ventilation, and air-conditioning (HVAC) systems; fire detection and suppression; seismic (earthquake) standards; electricity and telecommunications; museum artifact preservation, display, and interpretation; and access for persons with disabilities.

Vernon Collection Protection

The visitor center does not meet current NPS museum standards for preservation, display, and interpretation of the Vernon Collection. The situation is dire enough that the entire Vernon Collection has been moved to the NPS Western Archeological and Conservation Center in Tucson, Arizona, for critical conservation treatment and temporary storage until a facility that meets NPS museum standards is available within the park. (A small number of durable Vernon Collection items that have undergone conservation treatment will be returned and displayed in a small exhibit at the Colter Bay Visitor Center.) A decision must be reached regarding whether the Vernon Collection should be stored, protected, and displayed in a facility that meets NPS museum standards at Colter Bay or at an alternative location within Grand Teton National Park.

Vehicular and Pedestrian Circulation and Parking

Along with considering what type of facility should replace the visitor center, the National Park Service must consider what changes might be needed in associated parking and vehicular and pedestrian circulation to improve the visitor experience, safety, and operational efficiencies at Colter Bay. There is a surplus of parking in the study area and there are issues with vehicular congestion, wayfinding, and pedestrian circulation.

ISSUES NOT ADDRESSED IN THIS PLAN

This plan does not address where in Grand Teton National Park the Vernon Collection would be stored/exhibited if those functions are recommended to be moved (in whole or in part) from Colter Bay. For reasons related to time, cost, and funding, this decision would be made in a subsequent environmental planning effort.

This plan also does not address issues related to commercial services at Colter Bay.

RELATIONSHIP TO OTHER PLANS

Master Plan, Grand Teton National Park (1976)

This is the conceptual document that established guidelines for management and use of Grand Teton National Park within the bounds of existing legislative commitments. The Colter Bay Visitor Services Plan is consistent with the management direction provided by the 1976 Master Plan, which classifies Colter Bay as a “high density recreation” area that is “readily accessible both to the park’s primary transportation corridor and

Jackson Lake... [offering] a large variety of visitor accommodations and services...”

Development Concept Plan, Colter Bay Village / Jackson Lake Lodge (1989)

This plan presents concepts for improving the Colter Bay and Jackson Lake developed areas consistent with the 1976 Master Plan. The Colter Bay Visitor Services Plan is generally consistent with the management direction in the development concept plan:

... continue current uses at Colter Bay..., rehabilitate the area, and redesign or relocate some facilities. The intent is to... encourage pedestrian circulation, reduce traffic congestion and improve safety, maintain and enhance views, preserve park resources, reduce maintenance [needs]... Vehicular circulation and parking will be redesigned and improved in the [Colter Bay] village area...

The 1989 development concept plan did not recognize deficiencies at the Colter Bay Visitor Center because at that time (nearly 25 years ago), the visitor center was still serviceable.

Initial Site and Value Analysis / Site and Design Charrette, Colter Bay Visitor Center and Indian Arts Museum (Final Draft Report 2004)

This study developed five alternatives for the rehabilitation and/or replacement of the visitor center and museum. Relocating some functions to other sites in the park was not considered in the 2004 report, but

it is considered in this Colter Bay Visitor Services Plan. The report recommended retaining all functions at or near the existing site in the rehabilitated visitor center with an addition, or in a new, larger visitor center structure (with the existing visitor center demolished). Park managers feel that this solution is not financially feasible at a cost of \$20 million, particularly during the current challenging economic climate, and may not be appropriate given the highly seasonal nature of visitor use.

Intermountain Region Collections Management Strategy (2005)

This strategy outlined a regional approach to manage museum collections using consistent criteria that are cost effective and based on asset management principles. The strategy recommended storing archives and cultural and natural history collections at a proposed park facility. The Colter Bay Visitor Services Plan is consistent with the collections management strategy.

Intermountain Region Visitor Center Strategy (2006)

This document outlines Intermountain Region-wide direction for NPS visitor centers. Guiding principles of the strategy at the program level are listed below and were considered during the development of this Colter Bay Visitor Services Plan:

- Visitor center projects must be mission critical. Projects would only occur when:
 - Visitor center projects must be supported by a public planning process
 - Visitor center projects must not require an “Operation of the National Park System” (base operating budget) funding increase
- The Intermountain Region visitor center program—and each individual project—must identify a measurable positive return on investment; possible examples include reduction in visitor accidents/citations/rescues; improvement in the numbers and types of resources protected, reduced staff requirements, increased visitor satisfaction, increased donations, more visitors contacted, improvement in the facility condition index, etc.
- Interpretive media must be integral in the funding, planning, design, construction, operation, and support of the facility.

Guiding principles of the strategy at the project level are as follows:

- Visitor centers must facilitate communication with visitors by providing access to staff that will welcome them, provide primary orientation, and tell the park’s story (including safety and resource protection messages and pointing out visitor experience opportunities).
- Visitor centers must be designed to maximize cost effectiveness and efficiency, optimize park operations, and incorporate sustainable concepts. They must be consistent with Visitor Center Model and the Leadership in Energy and Environmental Design (LEED) criteria, and consider staffing impacts.
- Visitor center projects must define roles and manage the expectations of partners and NPS staff to ensure they support mission critical needs.
- Utility systems and other essential infrastructure must be either in place to support the visitor center,

or included as an integral part of the project cost.

Other key messages include the following:

- There are three basic purposes for visitor centers in the Intermountain Region: to provide information/orientation, to provide interpretation and education, and to provide comfort (restroom) facilities. This means that restrooms, information/orientation, interpretation and education, and a staffed front desk are the appropriate *basic* components of visitor centers. Any additional *optional* components must individually (a) be carefully considered, (b) individually justified, and (c) provide a positive return on investment.
- Planning teams must consider and explore nontraditional alternatives to building visitor centers (or including optional components in visitor centers) early in the planning process. As projects are developed, planning teams should consider the following:
 - One size may not fit all. Beyond the three basic elements, the components of visitor centers may differ between parks.
 - Be future-oriented. New technologies (e.g., handheld digital computer technology may eliminate the need for traditional enclosed spaces).
 - Innovate. Wayside exhibits, roving rangers, information kiosks, shared facilities (with other land management agencies) are a few options to consider.
 - More is not always better. Consider whether project

goals can be achieved by reducing facilities and information provided.

- No substantive research exists to indicate that visitors themselves require or desire visitor centers. (Are we providing so much information in our visitor centers that we are discouraging visitors from making their own discoveries and connections with the resource?)
- Look for partnering opportunities.

The guidance was followed during the development of the Colter Bay Visitor Services Plan.

Transportation Plan (2006)

This plan addresses transportation-related issues in Grand Teton National Park. The plan recommends a preferred system of transportation improvements within the park, including roadways and parking, development of a plan to evaluate the need and feasibility for a transit system within the park, construction of improved road shoulders and multiuse pathways, improvements to developed areas, and development of traveler information systems. For the Colter Bay area the plan notes there will be minimal redesign of parking, boat trailer parking, and circulation to improve function and safety, and that information kiosks will be added. The transportation plan also called for construction of a multiuse pathway inside the road corridor from North Jenny Lake Junction to Colter Bay, and for improvements in the amount and type of traveler information available to park visitors and the local community. Based on subsequent analysis, additional redesign of the parking area and circulation was found to be warranted within the Colter Bay

project area. Thus, this 2011 plan supersedes part of what was proposed for Colter Bay in the 2006 transportation plan.

Park Museum Collection Storage Plan (2007)

This plan provides a servicewide approach to managing museum collections using consistent criteria that are cost effective and based on asset management principles. This plan provides strategy recommendations for Grand Teton National Park museum collections consistent with this plan.

Colter Bay Parking and Traffic Data Collection and Analysis (2011)

This study, conducted by the Federal Highway Administration, involved a parking demand and occupancy study in support of this Colter Bay Visitor Services Plan. The study was designed to determine how many standard and oversize parking spaces would be needed in the project area in the future, and to provide traffic and parking observations and recommendations to help inform the next step (schematic design) for the project. The study is described in appendix C of this document.

IMPACT TOPICS

Specific impact topics were developed to allow comparison of the environmental consequences of each alternative. These impact topics were identified based on federal laws, regulations, and executive orders; NPS *Management Policies 2006*; and NPS knowledge of limited or easily

impacted resources. Table 1 lists impact topics that were considered in this project. Topics that were retained for detailed analysis are discussed in more detail in Chapter 3: Affected Environment and Chapter 4: Environmental Consequences.

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Natural Resources		
Soils (Retained)	The Organic Act and NPS <i>Management Policies 2006</i> both require the National Park Service to protect and conserve geologic resources, including soils that could be affected by visitors and park management actions. Soils in the Colter Bay area are a key resource; the soils help determine where native vegetative communities occur in the area, and they affect the area's productivity, drainage patterns, and erosion. Soils also provide structural support to buildings and other facilities in the park. Soils generally take thousands of years to develop. Although most of the proposed developments in the alternatives would occur in areas that have already been disturbed, construction and use of the facilities would affect the park's soils. Any impacts that would adversely affect these resources would be of concern to NPS managers and the public.	NPS Organic Act; NPS <i>Management Policies 2006</i>
Vegetation (Retained)	Although much of the vegetation in the project area has been lost or altered, native vegetation is still an important natural resource. The Organic Act and NPS <i>Management Policies 2006</i> both require the National Park Service to protect and conserve native plants and vegetative communities that could be affected by visitors, park management actions, and external sources. The proposed developments in the alternatives would adversely affect some vegetation, but restoration of vegetation in other areas would be a beneficial impact. These actions would be of concern to many people, including park managers. The spread of nonnative species also is a concern in the park.	NPS Organic Act; NPS <i>Management Policies 2006</i>
Wildlife (Retained)	The park's wildlife populations are an important park resource and one of the attractions that add to the quality of the visitor experience in the Colter Bay area. The Organic Act and NPS <i>Management Policies 2006</i> both require the National Park Service to protect and conserve native wildlife populations that could be affected by visitors, park management actions, and external sources. Although wildlife habitat in the Colter Bay area has been substantially altered, wildlife still use the area. The proposed facility improvements in the alternatives would adversely affect some wildlife habitat, while other actions would beneficially affect wildlife. Changes in wildlife habitat or in wildlife populations due to the alternatives would be of concern to visitors, the public, and park managers.	NPS Organic Act; NPS <i>Management Policies 2006</i>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Special Status Species: grizzly bear, gray wolf, Canada lynx, wolverine (Retained)	The Endangered Species Act requires an examination of impacts on all federally listed threatened or endangered plant and animal species. NPS <i>Management Policies 2006</i> repeat this requirement and add the further stipulation that the analysis examine impacts on state listed endangered, threatened, or rare species, and federal species proposed for listing. The federally threatened grizzly bear occurs in the area. The gray wolf (“experimental nonessential population”), Canada lynx (federally threatened), and wolverine (federal candidate species) could occur in or adjacent to the project area. The State of Wyoming also lists Canada lynx and wolverine as nongame species of special concern (http://gf.state.wy.us/wildlife/nongame/SpeciesofSpecialConcern/index.asp). Proposed facility improvements and related visitor use in the alternatives could affect these species. Changes in habitat or populations of these special status species would be of concern to park managers, the U.S. Fish & Wildlife Service (USFWS), and the public.	Endangered Species Act; NPS <i>Management Policies 2006</i>
Special Status Species: yellow-billed cuckoo, greater sage-grouse, whitebark pine (Dismissed)	The U.S. Fish and Wildlife Service lists seven threatened and candidate species that occur in Teton County, Wyoming, on its website (http://www.fws.gov/wyominges/Pages/Species/Species_Endangered.html). Three of these species do not occur in the Colter Bay area—yellow-billed cuckoo (<i>Coccyzus americanus</i>), greater sage-grouse (<i>Centrocercus urophasianus</i>), and whitebark pine (<i>Pinus albicaulis</i>) and therefore were dismissed from detailed analysis.	Endangered Species Act; NPS <i>Management Policies 2006</i>
Water Quality (Retained)	Clean water is a fundamental resource of Grand Teton National Park. Runoff from the Colter Bay parking lots may drain into Jackson Lake and affect the bay’s water quality. The proposed changes in the alternatives, including parking lot changes and water treatment proposals, could affect Jackson Lake water quality by affecting the amount of pollutants in runoff that goes into the lake. Changes to water quality would be of concern to park managers, visitors, and the public.	Clean Water Act; Executive Order 12088; NPS <i>Management Policies 2006</i>
Water Quantity (Dismissed)	None of the alternatives being considered would be expected to substantially change either surface or groundwater flows in the Colter Bay area. Water consumption would not be expected to change to the point that there would be a noticeable impact on surface or groundwater flows. No actions would occur that would affect ground flows or drainages in the area. There would be a change in the impermeable paved surfaces within the project area as a result of the alternatives, which could affect the rate water flows into the soil and lake. But the same overall quantity of water would still flow into the lake and soil in the area. Any changes in the overall quantity of water entering the lake would be negligible. Therefore, this impact topic was dismissed from detailed analysis.	Clean Water Act; Executive Order 12088, “Federal Compliance with Pollution Control Standards”; NPS <i>Management Policies 2006</i>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Soundscapes (Dismissed)	NPS <i>Management Policies 2006</i> and Director's Order 47: <i>Soundscape Preservation and Noise Management</i> recognize that natural soundscapes are a park resource and call for the National Park Service to preserve, to the greatest extent possible, the natural soundscapes of parks. The policies and Director's Order 47 further state that the National Park Service would restore degraded soundscapes to the natural condition whenever possible, and would protect natural soundscapes from degradation due to noise (undesirable human-caused sound). The project area includes multiple roads and parking areas, visitor center, campground, and other facilities with frequent visitor and staff use. The alternatives would result in a temporary increase in noise from construction-related activities, including noise from excavation equipment, trucks, and worker traffic, but such sounds would be temporary and seasonal, lasting only as long as the construction activity continued. Therefore, this topic was dismissed from detailed analysis.	NPS <i>Management Policies 2006</i> ; Director's Order 47: <i>Soundscape Preservation and Noise Management</i>
Air Quality (Dismissed)	Grand Teton National Park is designated as a class I area under the Clean Air Act. Class I areas are afforded a high degree of protection under the act. Air quality at Colter Bay is good, and the area is in attainment for national ambient air quality standards. The alternatives would not substantially change emissions from vehicles in the area—visitors' vehicles would continue to emit pollutants annually from early May to early October. The only air quality impacts would be associated with new construction. Pollutants emitted by construction equipment, such as particulate matter, soot, and nitrogen oxides, would be localized and limited to the construction season—approximately 10 months over 2 years. With mitigation and local breezes off the lake, which would disperse pollutants, impacts on air quality would be minor or less. Thus, this impact topic was dismissed from detailed analysis.	Clean Air Act; NPS <i>Management Policies 2006</i>
Night Skies (Dismissed)	NPS <i>Management Policies 2006</i> state that the National Park Service will preserve, to the greatest extent possible, the natural lightscapes of parks, including natural darkness. The agency strives to minimize the intrusion of artificial light into the night scene by limiting the use of artificial outdoor lighting to meet basic safety requirements, shielding necessary lights when possible, and using minimal impact lighting techniques. The Colter Bay area already has some night lighting in place. The actions proposed in the alternatives would result in a new visitor facility, which would require some nighttime lighting. However, the effects of this lighting would be localized and minimized by the mitigative techniques described above—any new lighting installed within the project area would be shielded to minimize effects on night skies and would be the minimum necessary for public safety. It is expected that Colter Bay Visitor Center improvements would have a negligible impact on the night sky.	NPS <i>Management Policies 2006</i>
Floodplains (Dismissed)	There are no floodplains within the project area. Thus, this impact topic was dismissed from detailed analysis.	Director's Order 77-2: <i>Floodplain Management</i> ; Executive Order 11988, "Floodplain Management"; NPS <i>Management Policies 2006</i>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic <i>(Retained or Dismissed from detailed analysis)</i>	Rationale	Relevant Law, Regulation, or Policy
Wetlands (Dismissed)	Aside from the shoreline and lake, there are no wetlands within the project area. The proposals in the alternatives would not affect the Colter Bay shoreline. Thus, this impact topic was dismissed from detailed analysis.	Clean Water Act; Executive Order 11990, "Protection of Wetlands"; Director's Order 77-1: <i>Wetland Protection</i> ; NPS Management Policies 2006
Prime and Unique Farmlands (Dismissed)	<p>Prime farmlands are defined as lands that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and are also available for these uses. Prime farmlands have the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. Unique farmlands are lands other than prime farmlands that are used for the production of specific high value food and fiber crops.</p> <p>There are no designated prime or unique farmlands in the project area (P. Biggam, NPS soils program manager, pers. comm., February 2, 2012). Thus, this topic was dismissed from detailed analysis.</p>	Council on Environmental Quality (CEQ) 1976 Memorandum; Analysis of Impacts on Prime and Unique Farmland in Environmental Impact Statement; Department of the Interior Environmental Statement Memorandum No. ES77-3.
Cultural Resources		
Historic Structures (Retained)	In 2011, the Colter Bay developed area was evaluated for historical significance and the park determined there are structures in the area that are eligible for listing in the national register. One of these buildings is the Colter Bay Visitor Center and Indian Arts Museum. Proposed actions in the alternatives would have a direct impact on this historic structure; therefore, this impact topic was retained for detailed analysis.	NHPA; NEPA; Advisory Council on Historic Preservation's (ACHP) implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> ; <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties</i> ; NPS Management Policies 2006; Director's Order 28: <i>Cultural Resource Management Guideline</i> ; Programmatic Agreement among the National Park Service, the ACHP, and the National Conference of State Historic Preservation Officers (2008)

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Cultural Landscapes (Retained)	<p>The National Park Service defines a cultural landscape as "... a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built." The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions (Director's Order 28).</p> <p>In 2011, the Colter Bay developed area was evaluated for historical significance and the park determined there are cultural landscape features and patterns (e.g., circulation, spatial organization, cluster arrangements, vegetation) that potentially render the landscape eligible for listing in the national register. Proposed construction activities such as the change in vehicle circulation and a new visitor facility have the potential to impact the cultural landscape; therefore, this impact topic was retained for detailed analysis.</p>	<p>NHPA; NEPA; ACHP's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> (1996); <i>NPS Management Policies 2006</i>; Director's Order 28; Programmatic agreement among the National Park Service, the ACHP, and the National Conference of State Historic Preservation Officers (2008)</p>
Museum Collections (Retained)	<p>Actions proposed in this plan, including the storage, curation, and display of a portion of the Vernon Collection in the Colter Bay developed area, would result in impacts to museum collections; therefore, this topic was retained for detailed analysis.</p>	<p>NHPA; AIRFA; AHPA; ARPA; NAGPRA; NEPA; 36 CFR 79 "Curation of Federally-Owned and Administered Archaeological Collections"; USDI Manual on Museum Property Management 411 DM; <i>NPS Management Policies 2006</i>; Director's Order 24 and Director's Order 28; <i>NPS Museum Handbook</i></p>
Archeological Resources (Dismissed)	<p>The land within the project area was 100% surveyed and inventoried for archeological resources in 1990 by the NPS Midwest Archeological Center. No archeological resources were found within the project area; therefore, this impact topic was dismissed from detailed analysis.</p> <p>In the unlikely event that archeological resources are discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources cannot be preserved <i>in situ</i>, an appropriate mitigation strategy would be developed in consultation with the Wyoming state historic preservation officer and, as necessary, American Indian tribes. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in NAGPRA would be followed. If non-Indian human remains were discovered, standard reporting procedures to the proper authorities would be followed, as would all applicable federal, state, and local laws.</p>	<p>NHPA; AHPA; ARPA; NEPA; ACHP's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>; <i>NPS Management Policies 2006</i>; Director's Order 28 and Director's Order 28A; Programmatic agreement among the National Park Service, the ACHP, and the National Conference of State Historic Preservation Officers (2008)</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Ethnographic Resources and Sacred Sites (Dismissed)	<p>Ethnographic resources are defined by the National Park Service as any "...site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system or group traditionally associated with it" (Director's Order 28). Sacred sites, a type of ethnographic resource, are defined as any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site (Executive Order 13007, May 24, 1996).</p> <p>Ethnographic resources, including sacred sites, have not been identified within the project area. The park is planning to complete an ethnographic overview and assessment report when funding becomes available in the future. The report would be prepared in consultation with traditionally associated American Indian tribes. Because it is believed the project area lacks ethnographic resources, including sacred sites, this impact topic was dismissed from detailed analysis.</p> <p>During the planning process for this environmental assessment, the park contacted traditionally associated tribes via a scoping newsletter in October 2010. Copies of this environmental assessment will be forwarded to each traditionally associated American Indian tribe for review and comment during the public review period. If, during this review period, traditionally associated American Indian tribes identify ethnographic resources, including sacred sites, in the project area, the National Park Service would further consult with them to avoid or mitigate adverse impacts. The National Park Service would also accommodate, to the extent practicable, access to and ceremonial use of sacred sites by American Indian religious practitioners. The location of ethnographic sites would not be made public. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction and are determined to be of American Indian origin, guidance for implementing NAGPRA would be followed.</p>	<p>NHPA; AHPA; ARPA; NAGPRA; NEPA; ACHP's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); Executive Order 13007; <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>; NPS <i>Management Policies 2006</i>; Director's Order 28; Programmatic agreement among the National Park Service, the ACHP, the National Conference of State Historic Preservation Officers (2008)</p>
Indian Trust Resources (Dismissed)	<p>Secretarial Order 3175 requires that any anticipated impacts on Indian trust resources from a proposed project or action by USDI agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation 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.</p> <p>There are no Indian trust resources in the park; therefore, this topic was dismissed from detailed analysis.</p>	<p>Secretarial Order 3175, "Departmental Responsibilities for Indian Trust Resources"</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from detailed analysis)	Rationale	Relevant Law, Regulation, or Policy
Environmental Justice (Dismissed)	<p>Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Teton County, where Grand Teton National Park is located, contains minority and low-income populations; however, environmental justice is dismissed as an impact topic for the following reasons:</p> <ul style="list-style-type: none"> – NPS staff and the planning team actively solicited public participation in the planning process and gave equal consideration to input from all persons regardless of age, race, income status, or other socioeconomic or demographic factors. – Implementation of any of the alternatives would not result in any disproportionate human health or environmental effects on minorities or low-income populations and communities. – The impacts associated with implementation of the alternatives would not result in any effects that would be specific to any minority or low-income community. 	Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”
Other		
Visitor Use and Experience (including the park setting; visitor understanding, education, and interpretation; scenery and visual resources) (Retained)	<p>Use and enjoyment of the park by visitors is part of the purpose of Grand Teton National Park. The way that visitors use and experience Colter Bay could be affected by changes in visitor facilities.</p> <p>NPS <i>Management Policies 2006</i> direct the National Park Service to provide enjoyment opportunities that are uniquely suited and appropriate to the resources found in the park. How visitors use and experience the park is of concern both to visitors and to NPS managers. Therefore this topic was retained for detailed analysis.</p>	Enabling legislation (Grand Teton National Park Act of 1950); NPS <i>Management Policies 2006</i> ; <i>Grand Teton National Park Foundation for Planning and Management (2006)</i>
Park Operations (Retained)	Support facilities for serving visitors and staff require proper planning, design, programming, construction, operation, and maintenance. Facilities should be cost-effective (initial and long-term operation and maintenance), integrate sustainable design, and consider impacts on the landscape and resources of the park. Actions included in the plan, such as the size and location of visitor facilities, parking, etc., would result in impacts to NPS operations. Therefore, this topic was retained for detailed analysis.	NPS Organic Act; USDI Departmental Manual; NPS <i>Management Policies 2006</i> ; Director’s Order 80: <i>Real Property Asset Management</i>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic <i>(Retained or Dismissed from detailed analysis)</i>	Rationale	Relevant Law, Regulation, or Policy
Public Safety (Dismissed)	Facility improvements proposed as part of the alternatives could reduce the risk of health, safety, and or fire hazards for visitors and staff. However, critical repairs would be made to address serious health, safety, and fire concerns even under the no-action alternative (because they would be necessary to allow continued use of the existing visitor center). Thus, any impacts to public safety from implementing the action alternatives would be negligible to minor compared to the action alternative. Therefore, this impact topic was dismissed from detailed analysis.	CEQ regulations; Director’s Order 12 Handbook
Socioeconomics (Dismissed)	Project proposals within Grand Teton National Park have the potential to affect the social and economic conditions of gateway communities within the Greater Yellowstone Area June through September—Colter Bay is one of the busiest areas within the park. It has many commercial visitor amenities (e.g., campgrounds, cabins, tent cabins, stables, store/gift shop, restaurant/grill, marina, and laundry/showers). However, the alternatives in this plan propose no changes to these commercial facilities. Any socioeconomic effects from actions proposed in the alternatives would be no more than negligible to minor in intensity and limited to the local Colter Bay developed area. Therefore, this impact topic was dismissed from detailed analysis.	NEPA

ALTERNATIVES



INTRODUCTION

This chapter of the plan presents four alternatives, including the NPS preferred alternative, for future management of NPS visitor services at Colter Bay. Alternative 1, the no-action alternative, presents a continuation of current management direction and is included as a baseline for comparing the consequences of implementing the action alternatives—alternatives B, C, and D. These three alternatives present different ways of providing visitor services at Colter Bay, with alternative B being the NPS preferred alternative. Each alternative includes an overall concept, proposed actions related to the visitor facility and Vernon Collection, functions moved (if any) from the Colter Bay project area, parking and circulation, and costs of implementing the alternative. Mitigative measures that would be used to reduce or avoid impacts are listed after the descriptions of the alternatives. This chapter also includes a section on the environmentally preferable alternative and actions/alternatives dismissed from detailed analysis. At the end of the chapter there are two summary tables: a comparison of the alternatives and a comparison of the predicted impacts of the alternatives.

DEVELOPMENT OF THE ALTERNATIVES

The alternatives were developed by the planning team with consideration of earlier plans (e.g., the 1976 master plan for the park; the 1989 *Development Concept Plan, Colter Bay Village / Jackson Lake Lodge*; the 2004 *Initial Site and Value Analysis / Site and Design Charette, Colter Bay Visitor Center and Indian Arts Museum*”; the 2006 *Intermountain Region Visitor Center Strategy*”; and the 2011 “Colter Bay Parking and Traffic Data Collection and Analysis”; see chapter 1 for a brief description of these

plans). Public scoping comments, input from NPS staff, NPS mandates and policies, and project goals were also considered, as well as potential environmental, visitor experience, visitor safety, and operational impacts, and costs.

The alternatives were guided by several conditions that helped the project to proceed according to schedule and constrain planning and estimated construction costs. These conditions were as follows:

- The alternatives do not address *commercial* services at Colter Bay (e.g., lodge, store, marina, campground, restaurants, and stables)—they address NPS visitor services in the immediate project area only.
- With the exception of toilet facilities, visitor facilities would remain open during the summer season (early May through early October) only. That is, the alternatives do not consider expanding existing NPS visitor services at Colter Bay during the winter season.
- NPS staffing levels in the alternatives would not change as a result of implementing the alternatives, although duties and responsibilities of some park staff may be altered and/or staff may be shifted to different locations within the park.
- Alternatives that propose moving the Vernon Collection to a new museum collection facility in the park do not specify where in the park that alternate location would be. This decision would be addressed in a follow-up environmental planning process.
- Changes in parking capacity in the alternatives were based on NPS *Management Policies 2006*, section

9.2.4, which states: “Permanent parking areas would not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use.”

The action alternatives describe the general nature and layout of facilities and infrastructure; specific design details would be determined in subsequent design phases.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The NPS preferred alternative was identified through a process called “choosing by advantages.” Using this process, the planning team identified and compared the relative advantages of each alternative according to a set of criteria or “factors.” The benefits or advantages of each alternative were compared for the following choosing by advantages factors:

- provides for healthy, safe, and accessible visits and working conditions
- protects natural resources, especially fundamental park resources and values
- protects cultural resources, especially fundamental park resources and values
- improves the visitor experience, especially fundamental park resources and values
- improves efficiency, reliability, and sustainability of park operations

- provides other benefits to the National Park Service and its partners

The advantages of each alternative and its long-term life-cycle costs were considered in developing the preferred alternative. The latter included costs for building, maintaining, staffing, and operating the facilities, including future costs associated with a new museum collection exhibit facility. The planning team strove to develop a preferred alternative that provides the American public and the National Park Service with the greatest overall benefits for the factors listed above at the most reasonable long-term cost.

FUNDING AND IMPLEMENTATION

Approval of this plan would not guarantee that the funding needed to implement the plan would be forthcoming. The alternatives were developed with the expectation that federal budgets would be constrained for the foreseeable future. Individual elements of the plan may be implemented over time as funding becomes available.

Until this plan is implemented, the operation and maintenance of the existing Colter Bay Visitor Center will continue. The National Park Service improved and reconfigured the interior of the Colter Bay Visitor Center during the first few months of 2012. The objectives of these modifications and improvements were to display a consolidated selection of Vernon Collection artifacts while the remainder of the collection is in storage, and to reorganize the remaining visitor center space to reduce crowding at the ranger desk and Grand Teton Association sales area.

ALTERNATIVE A: NO-ACTION ALTERNATIVE

Alternative A provides a baseline for evaluating the changes and impacts presented in the other three “action” alternatives. In the no-action alternative, the National Park Service would continue to manage NPS visitor services at Colter Bay as it does now. There would be no changes in visitor facilities, functions, access, or parking and circulation. As in all of the alternatives, NPS managers would take necessary actions to resolve unanticipated problems that arise. NPS managers would continue to strive to protect and preserve natural and cultural resources in the Colter Bay area, while also providing for a safe, quality visitor experience.

The “Alternative A (no action)” map shows existing developments in the Colter Bay project area, including buildings, trails, parking areas, roads, and vehicle circulation flows.

VISITOR FACILITY

Under alternative A, the existing visitor center (12,326 square feet [sq ft]) would continue to operate as it does now. All of the functions and uses of the building, including visitor services and administrative uses, would remain as they are (see appendix B for details). Interpretive exhibits and the computer network server would remain.

Critical repairs would be made to allow continued use of the visitor center. These actions would include replacing the roof; fire detection system; and the HVAC systems, electrical, and plumbing systems.

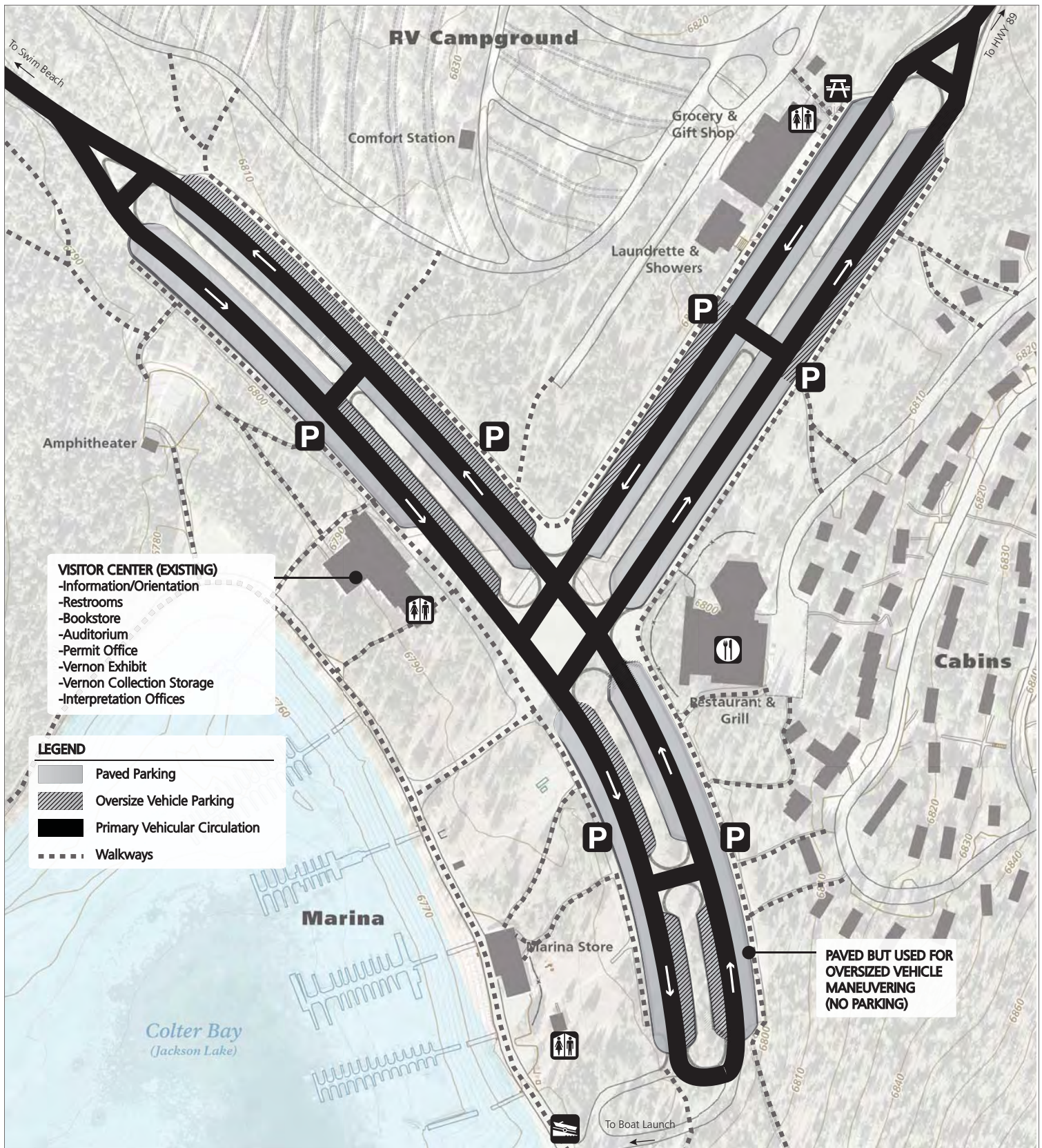
The visitor center would be open to visitors from early May through early October in this alternative. Vital building systems would remain operational during the winter to allow public use of the restrooms, to protect exhibits, prevent the water delivery system from freezing, and protect the computer network server.

VERNON INDIAN ARTS COLLECTION

Two Vernon Collection exhibit cases would remain in the Colter Bay Visitor Center to provide visitors with a sense of and appreciation for the collection. The rest of the Vernon Collection would continue to be stored at the NPS Western Archeological and Conservation Center (WACC) in Tucson, Arizona, which meets NPS standards for museum collections. The collection would remain at this facility until a suitable location within the park is available.

OTHER VISITOR FACILITIES IN THE PROJECT AREA

No new visitor facilities or upgrades would be provided under alternative A.



ALTERNATIVE A (no action)

Colter Bay Visitor Services Plan
Grand Teton National Park, Wyoming

August 23, 2011

For NPS Internal Review - FOIA Exempt



ACCESS, PARKING, AND CIRCULATION

No changes would occur in parking areas, roads, walkways, or vehicle and pedestrian circulation in the Colter Bay area under alternative A. A total of 389 passenger vehicle parking spaces, 38 oversized spaces (for RVs and vehicles towing boat trailers), and 5 bus parking spaces would continue to be available. Visitors in vehicles would continue to enter, circulate, and exit as they currently do (see Chapter 3: Affected Environment). Aside from resurfacing, no changes would be made to improve the physical condition of the roads and parking areas within the project area. The pavement footprint in the project area would remain approximately 11 acres.

ESTIMATED COST

The estimated construction cost of implementing alternative A is \$4.8 million in 2011 dollars (for critical repairs to the visitor center and for repairs and resurfacing roads, parking lots, and walkways within the project area). Funding for improvements may not come all at once, and may be partially obtained through partners, donations, or other non-NPS federal sources. Although the National Park Service hopes to secure this funding, the funding of these repairs is not guaranteed.

See appendix A for more information on construction and life-cycle costs of the alternatives.

ALTERNATIVE B: NPS PREFERRED ALTERNATIVE

Alternative B is the NPS preferred alternative for providing NPS visitor services at Colter Bay. The focus of the alternative is enhancing the visitor experience, improving Colter Bay's rustic character, increasing the long-term sustainability of facilities, and reducing the impact of the built environment on the area's natural and scenic resources as much as possible. The visitor experience would be enhanced by encouraging visitors to experience outdoor settings, improving wayfinding, and improving vehicular and

pedestrian circulation. The overall built environment footprint would be substantially decreased.

The text box below lists key changes in alternative B compared to alternative A (no action). The "Alternative B (preferred)" map shows conceptually the changes in the Colter Bay project area buildings, roads, parking areas, and vehicular and pedestrian circulation; specific design details would be determined in subsequent design phases.

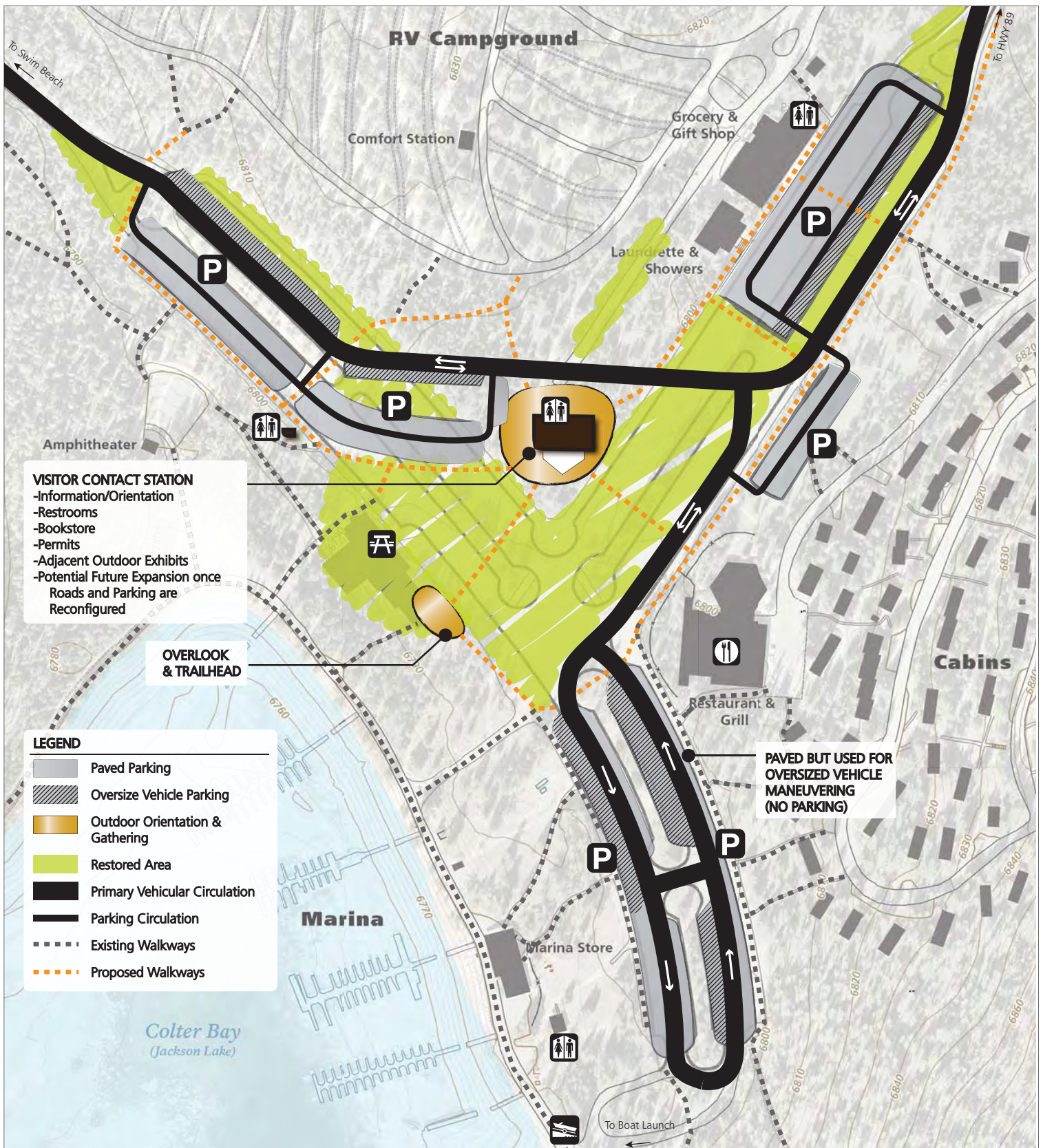
The Primary Differences of Alternative B from Alternative A (no action):

- The Colter Bay Visitor Center would be replaced with a smaller visitor contact station at a nearby location.
- A picnic area would be provided at the former visitor center site.
- Substantial changes would be made to parking and vehicular and pedestrian circulation while improving the rustic character of the area.
- The number of passenger vehicle parking spaces at Colter Bay would be reduced and the number of oversized parking spaces would be increased to better match visitor use patterns.

VISITOR FACILITY

In alternative B, the existing visitor center would be deconstructed and the site would be regraded, revegetated, and converted to a picnic area. A new visitor contact station (approximately 4,400 sq ft) would be built farther from the lakeshore at the north corner of the T-road intersection ("Alternative B (preferred)" map). The visitor contact station would provide key visitor services and operational functions, including information/orientation and permit services combined at one visitor services counter and a bookstore operated by the Grand Teton Association (see appendix B for functions and approximate space allocation). It would have about 60% less overall indoor space than the existing visitor center and would not include an Indian arts museum or a theater. However, the public restrooms would be approximately twice the size of those at the

existing visitor center. The visitor contact station would not exceed a single story in height and would be similar in character to the Mission 66-era visitor center that it would replace. Two cases containing portions of the Vernon Collection would be exhibited in the lobby of the new visitor contact station. Administrative space would be provided, including interpretive workspace and storage for interpretive activities. Office space and storage for the bookstore would be included. Space for audiovisual, information technology, and telecom facilities would be provided in the new visitor contact station (design of such facilities will meet the latest standards from ANSI/TIA/BICSI, NECA, and other industry-leading standards-making bodies). The computer network server (for NPS and concessions operations) and other storage space would be provided in the Colter Bay NPS operations area (see "Colter Bay Vicinity Map").



ALTERNATIVE B (preferred)

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North



The new visitor contact station would include an outdoor plaza and covered pavilion to accommodate certain functions that were formerly inside the existing visitor center. These functions would include interpretive panels, artist demonstrations, and park interpretive programs. Equipment not requiring a temperature-controlled environment (e.g., bear-proof food canisters and NPS lake-related equipment such as paddles and personal flotation devices) would be stored in an easily accessible storage shed close to the visitor contact station.

The new visitor contact station would meet all NPS safety standards and would be fully accessible, meeting the requirements of the Architectural Barriers Act of 1968 (ABA).

The new visitor contact station would be operational only during the primary visitor season, from early May to early October. For seven months of the year the facility would be shut down (not heated) and winterized.

VERNON INDIAN ARTS COLLECTION

In alternative B, a new collections/exhibit facility would be built in the park at an alternate location to be determined in a subsequent environmental planning process. This new facility would accommodate all of Grand Teton National Park's current and anticipated future needs for museum collection storage, curation, and exhibit space, including that for the Vernon Collection of Indian Arts. This facility would meet NPS standards for museum collections. In the meantime, the park would seek opportunities for "virtual" exhibits through alternative media or interim display of parts of the collection in locations that meet NPS museum standards.

OTHER VISITOR FACILITIES IN THE PROJECT AREA

Under this alternative a portion of the former visitor center site would be converted to a large picnic area with 8 to 12 picnic tables. Vault or similar toilets would be provided west of the new picnic area and these would also serve as winter restrooms for visitors.

A small paved pedestrian overlook (less than 0.1 acre in size, shown conceptually on the "Alternative B [preferred]" map) would be established south of the picnic area. This overlook would provide unobstructed views of Colter Bay with the Teton range as a backdrop, and serve as a focal point, gathering area, and trailhead.

ACCESS, PARKING, AND CIRCULATION

As shown in the "Alternative B (preferred)" map, there would be substantial modifications to vehicular circulation in the Colter Bay project area under alternative B. To reinforce the pedestrian connection between the visitor contact station and the lakeshore, the main roadway would be realigned north of the new visitor contact station so that visitors would not have to cross the roadway when walking between the contact station and the lakeshore. Any visitors who do not park and visit the contact station would ultimately come to the turnaround near the swim beach and circle back to the vicinity of the visitor contact station (see "Colter Bay Vicinity Map").

In general, parking areas within the project area would be separated from roads to improve traffic flow, decrease congestion, and improve pedestrian safety. Parking areas would be better aligned with visitor-use patterns. Passenger vehicle parking would be reduced from 389 spaces to approximately 270. Parking spaces for RVs and vehicles towing boat trailers would be increased from approximately 38 spaces to 55; these spaces would be parallel or "back-in" spaces.

Parking spaces for buses would remain at approximately 5, located adjacent to the visitor contact station. Areas no longer used for parking would be closed and restored with native vegetation. Overall, the rustic character of Colter Bay would be improved because the pavement footprint would be reduced by approximately 3 acres (see “Alternative B (preferred)” map).

The general layout for the parking area nearest the marina would remain as it is, but many of the parking spaces would be reallocated to parking for vehicles towing boat trailers. The overall road layout would discourage casual, drive-through marina traffic by virtue of requiring a left-hand turn off the main roadway and new signs. This layout would help keep the marina parking area from becoming congested with passenger vehicles.

To minimize runoff from the parking areas into Colter Bay (Jackson Lake) stormwater treatment would be incorporated.

Walkways would be relocated and/or new walkways would be built to improve pedestrian circulation, provide better access for disabled visitors, and to encourage visitors to walk within the Colter Bay area rather than drive. Wayfinding would be improved where possible through replacement of existing signs or installation of new signs.

Access by bicycle in the Colter Bay developed area would be encouraged. Where appropriate, roads within the project area would be designed and signed to accommodate bicycles as well as motor vehicles.

SUSTAINABILITY AND ENERGY CONSERVATION

In this alternative, the new visitor contact station would be designed to be more sustainable in terms of energy and water consumption. The facility would be at least 30% more energy efficient than a typical new building, which would meet federal sustainability standards. Materials from the existing visitor center and asphalt from the parking areas would be reused or recycled to the extent possible.

ESTIMATED COST

The estimated construction cost (class C) of implementing alternative B is approximately \$9.5 million in 2011 dollars. Major cost elements include the new visitor contact station; demolition of the existing visitor center; road, parking, and trail improvements; exhibits; the pedestrian overlook; picnic area; vault or similar toilet; and the computer network server at the Colter Bay operations area). This amount does not include the cost for a future museum collection/exhibit facility at an alternate location in the park, nor does it include long-term life-cycle (operations, maintenance, and staffing) costs. This estimate may be used for budgeting purposes, but actual construction costs may be higher or lower depending on the ultimate design, timing of implementation, opportunities for partnerships, and future economic conditions. Project funding may not come all at once, and may be partially obtained through NPS sources. Although the National Park Service would work to secure this funding; funding for these improvements would not be guaranteed.

See appendix A for more information on construction and life-cycle costs of the alternatives.

ALTERNATIVE C

Like alternative B, alternative C would enhance visitor experience, but more NPS services would be provided indoors and there would be less emphasis on maintaining or improving Colter Bay's rustic character. Improvements to roads, parking areas, and pedestrian circulation would improve wayfinding and parking convenience. The overall built environment footprint would be decreased, but not to the same extent as in alternative B.

The text box below lists key changes in alternative C compared to alternative A (no action). The "Alternative C" map shows conceptually the changes in the Colter Bay project area buildings, roads, parking areas, and vehicular and pedestrian circulation; specific design details would be determined in subsequent design phases.

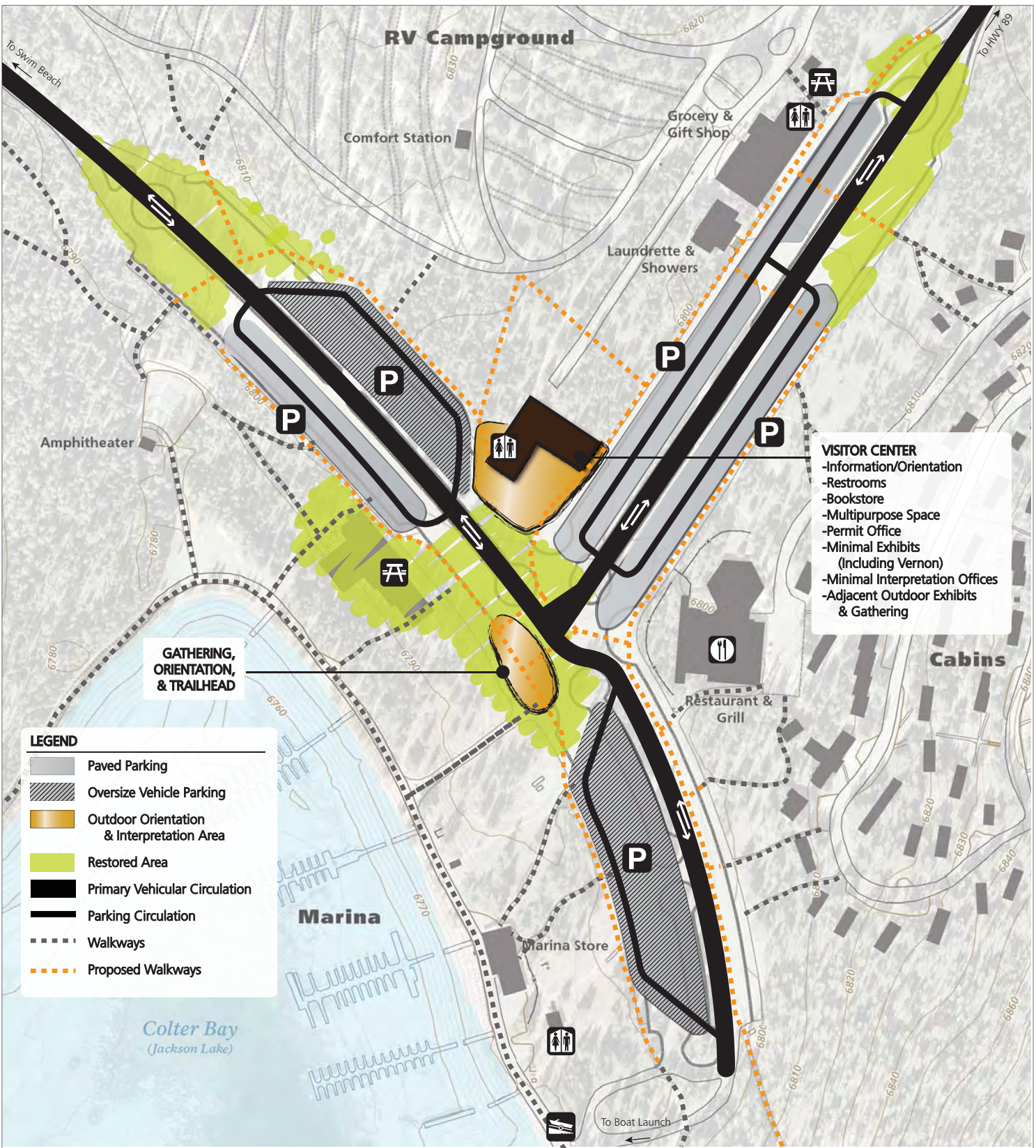
The Primary Differences of Alternative C from Alternative A (no action):

- The Colter Bay Visitor Center would be replaced with a new visitor center in a nearby location; this visitor center would include exhibits but not an Indian arts museum.
- A picnic area would be provided at the former visitor center site.
- Substantial modifications would be made to pedestrian/vehicle circulation.
- The number of passenger vehicle parking spaces at Colter Bay would be reduced and the number of oversized parking spaces would be increased to better match visitor use patterns.

VISITOR FACILITY

In alternative C, the existing visitor center would be deconstructed and the site would be regraded, revegetated, and converted to a picnic area. The visitor center would be replaced with a smaller one (about 9,200 sq ft) at the north corner of the T-road intersection ("Alternative C" map). The new visitor center would have about 25% less overall space than the existing visitor center and would include a visitor information desk/lobby area, public restrooms, a separate permit office, an interpretive exhibit area, a bookstore, and a theater/multipurpose room (see appendix B for functions and approximate space allocation). The visitor

center would accommodate some administrative functions, including minimal office space for interpretive staff. The visitor contact station would not exceed a single story in height and would be similar in character to the Mission 66-era visitor center that it would replace. The facility would meet NPS safety standards and would be fully accessible (meeting ABA requirements), meet federal sustainability requirements, and be energy efficient. Space for audiovisual, information technology, and telecom facilities to support the contact center would be provided in the new visitor contact station (design of such facilities will meet the latest standards from ANSI/TIA/BICSI, NECA, and other industry standards-making bodies).



VISITOR CENTER
 -Information/Orientation
 -Restrooms
 -Bookstore
 -Multipurpose Space
 -Permit Office
 -Minimal Exhibits (Including Vernon)
 -Minimal Interpretation Offices
 -Adjacent Outdoor Exhibits & Gathering

GATHERING, ORIENTATION, & TRAILHEAD

LEGEND

- Paved Parking
- Oversize Vehicle Parking
- Outdoor Orientation & Interpretation Area
- Restored Area
- Primary Vehicular Circulation
- Parking Circulation
- Walkways
- Proposed Walkways

ALTERNATIVE C

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For NPS Internal Review - FOIA Exempt



The new visitor center would be open during the primary visitor season, from early May to early October. With the exception of the restrooms, the facility would be shut down completely the rest of the year to save energy and staff resources.

The computer network server (for both NPS and concessions operations) and most interpretive office space would be moved to the Colter Bay operations area.

VERNON INDIAN ARTS COLLECTION

In this alternative, there would be a modest amount of interior space for exhibits. A small portion of the Vernon Collection would be displayed in the new visitor center; these would be items that can withstand climatic extremes without damage or that can be transported into/out of the visitor center seasonally. The vast majority of the Vernon Collection would be moved to a new museum collection/exhibit facility in an alternate park location to be determined in a subsequent environmental planning process. This new facility would meet NPS standards for museum collections and would accommodate all of Grand Teton National Park's current and anticipated future needs for museum collection storage, curation, and exhibit space. In the meantime, the park would seek opportunities for "virtual" exhibits through alternative media or interim display of parts of the collection in locations that meet NPS museum standards.

OTHER VISITOR FACILITIES IN THE PROJECT AREA

As in alternative B, a portion of a former visitor center site would be converted to a large picnic area with 8 to 12 picnic tables. A small paved pedestrian overlook (less than 0.1 acre in size, shown conceptually on the "Alternative C" map) would be established south of the picnic area. This overlook would provide unobstructed views of Colter Bay

and would serve as a focal point, gathering area, and trailhead.

ACCESS, PARKING, AND CIRCULATION

As shown in the "Alternative C" map, there would be substantial modifications to parking and circulation in the Colter Bay project area under alternative C. All parking areas would be separated from roadways to improve traffic flow, decrease congestion, and improve pedestrian safety. Parking would be better aligned with visitor-use patterns. Passenger vehicle parking would be reduced from the existing 389 spaces to approximately 290 spaces. Oversize parking spaces for RVs and vehicles towing boat trailers, west of the new visitor center and near the marina, would be increased from 38 spaces to approximately 55; these would be pull-through spaces instead of parallel or back-in spaces. Parking spaces for buses would remain at approximately 5, adjacent to the visitor center. Areas no longer used for parking would be closed and restored with native vegetation. The overall pavement footprint would be decreased by less than an acre.

Stormwater treatment would be incorporated to minimize runoff from the parking areas into Colter Bay.

Walkways would be relocated and/or new walkways would be built to improve pedestrian circulation, provide better access for visitors with disabilities, and to encourage visitors to walk within the Colter Bay area rather than drive. Wayfinding would be improved, where possible, through replacement of existing signs or installation of new signs.

Access by bicycle in the Colter Bay developed area would be encouraged. Where appropriate, roads within the project area would be designed and signed to accommodate bicycles as well as motor vehicles.

SUSTAINABILITY AND ENERGY CONSERVATION

Like alternative B, in alternative C, the new visitor center would be designed to be more sustainable in terms of energy and water consumption. The facility would be at least 30% more energy efficient than a typical new building, meeting federal sustainability standards. Materials from the existing visitor center and asphalt from the parking areas would be reclaimed, reused, or recycled to the extent possible.

ESTIMATED COST

The estimated construction cost (class C) of implementing alternative C is approximately \$16.2 million in 2011 dollars. Main cost items include the new visitor center; demolition of the existing visitor center; road, parking, and trail improvements; exhibits; the pedestrian

overlook; picnic area; the interpretive offices; and the computer network server at the Colter Bay operations area. This does not include the cost for a future museum collection/exhibit facility at an alternate location in the park, nor does it include long-term life-cycle (operations, maintenance, and staffing) costs. This estimate may be used for budgeting purposes, but actual construction costs may be higher or lower depending on the actual design, timing of implementation, opportunities for partnerships, and future economic conditions. Project funding may not come all at once, and may be partially obtained through non-NPS sources. Although the National Park Service would work to secure this funding; funding for these improvements would not be guaranteed.

See appendix A for more information on life-cycle and construction costs of the alternatives.

ALTERNATIVE D

The focus of alternative D would be on making relatively few changes to the Colter Bay project area while still improving the visitor experience and operational efficiency. The primary change in this alternative would be replacing the existing visitor center with a new, larger one in the same location. The new visitor center would include a museum collection facility for the entire park and extensive Vernon Collection exhibits.

Parking and walkways would be repaved, but the configuration would remain the same.

The text box below lists key changes in alternative D compared to alternative A (no action). The “Alternative D” map shows conceptually the changes in the Colter Bay project area buildings, roads, parking areas, and vehicular and pedestrian circulation; specific design details would be determined in subsequent design phases.

The Primary Differences of Alternative D from Alternative A (no action):

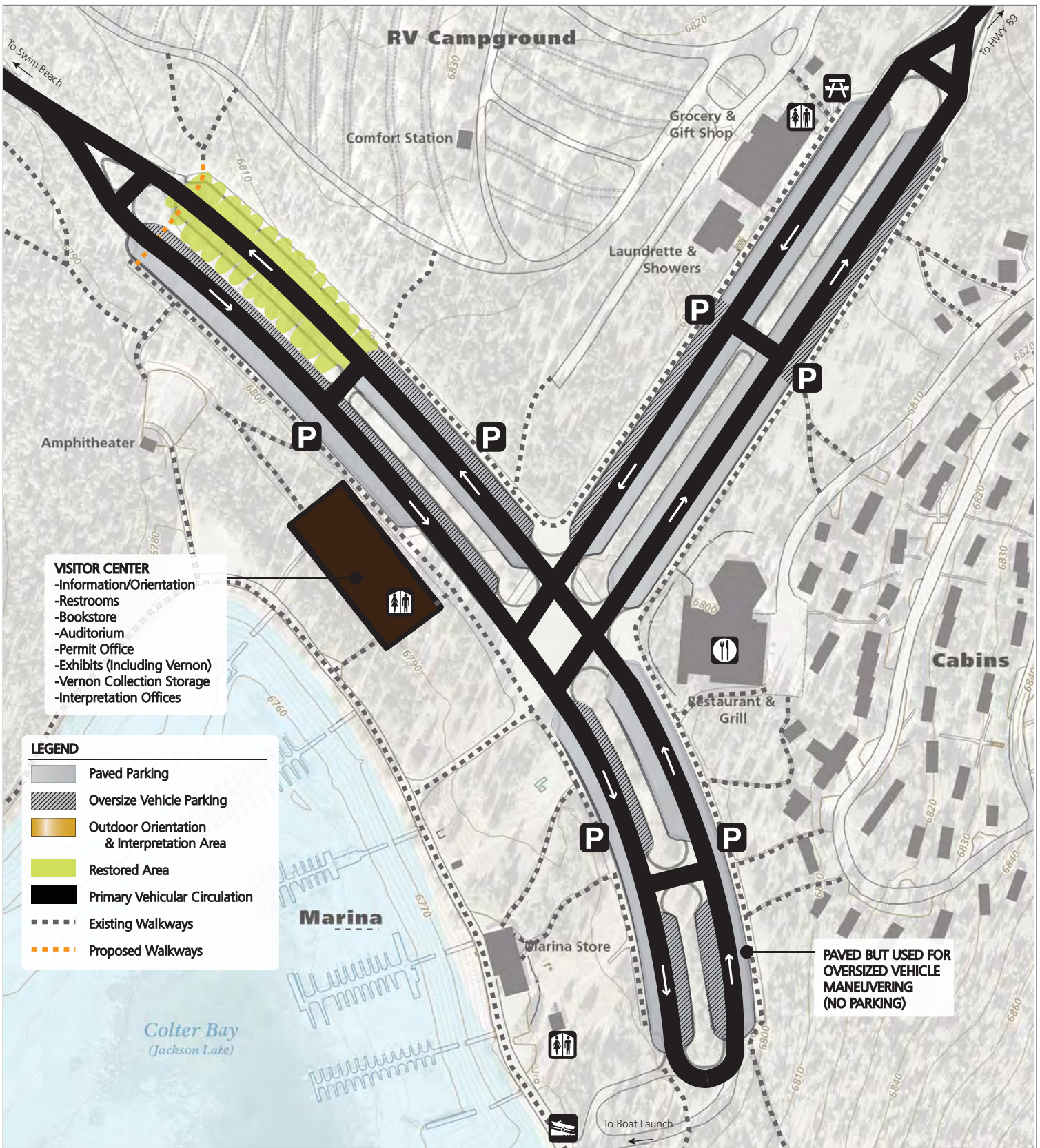
- The Colter Bay Visitor Center would be replaced with a new, larger visitor center in the same location.
- This new visitor center would include a variety of interpretive exhibits (including substantial Vernon Collection exhibits) and a museum collection facility that serves the entire park.
- Vehicular and pedestrian circulation would remain very similar to now.
- There would be a small reduction in passenger vehicle parking spaces at Colter Bay, but the number of oversized vehicle spaces would remain the same.

VISITOR FACILITY

In alternative D, the existing visitor center would be replaced with a new, larger one (approximately 18,100 sq ft) in the same location (“Alternative D” map). The new, larger visitor center would house a new museum collection facility for the entire park. It would include a visitor information desk/lobby area, public restrooms, a separate permit office, a variety of interpretive exhibits including Vernon Collection exhibits, a bookstore, and a multipurpose room that also would serve as a theater. The visitor center would accommodate certain administrative functions such as interpretive staff offices and the computer network server (see appendix B for functions and approximate

space allocation). Space for audiovisual, information technology, and telecom facilities to support the contact center would be provided in the new visitor contact station (design of such facilities will meet the latest standards from ANSI/TIA/BICSI, NECA, and other industry standards-making bodies). The facility would meet NPS safety standards, be fully accessible (meeting ABA requirements), meet federal sustainability requirements, and be energy efficient.

The visitor center would be open for visitor use from early May to early October (except for the public restrooms, which would remain open throughout the year). The facility would remain operational for NPS administrative purposes during the winter.



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VERNON INDIAN ARTS COLLECTION

The Vernon Collection would be stored (to NPS standards) in the museum collection facility portion of the new visitor center and a substantial portion of the Vernon Collection would be exhibited.

OTHER VISITOR FACILITIES IN THE PROJECT AREA

No other new visitor facilities would be provided under alternative D.

ACCESS, PARKING, AND CIRCULATION

The general parking and circulation layout would be largely the same in alternative D as it is now. The parking area and walkways would be repaired and repaved and accessibility improvements for persons with disabilities would be made. The least-used parking area (northwest of the visitor center) would be removed and the area revegetated (see “Alternative D” map). The number of car parking spaces would be reduced from 389 to approximately 328. The pavement footprint in the project area would be reduced by less than an acre. The number of parking spaces for oversized vehicles (RVs and vehicles towing boat trailers) would not change because some nearby passenger vehicle parking would be reallocated to this type of parking. Wayfinding would be improved where possible through replacement of existing signs or installation of new signs. Parking would continue to be allowed along the roadways.

To minimize runoff from the parking areas into Colter Bay (Jackson Lake) stormwater treatment would be incorporated.

SUSTAINABILITY AND ENERGY CONSERVATION

In alternative D, the new, larger visitor center would be designed to be more sustainable in terms of energy and water consumption. The facility would be at least 30% more energy efficient than a typical new building, meeting federal sustainability standards. Materials from the existing visitor center and asphalt from the parking areas would be reused/recycled to the extent possible.

ESTIMATED COST

The estimated construction cost (class C) of implementing alternative D is approximately \$19.1 million in 2011 dollars. Major cost items include the new visitor center/museum collection building; demolition of the existing visitor center; road, parking, and trail improvements; and exhibits. This does not include long-term life-cycle costs (operations, maintenance, and staffing). This estimate may be used for budgeting purposes, but actual construction costs may be higher or lower depending on the actual design, timing of implementation, opportunities for partnerships, and future economic conditions. Project funding may not come all at once, and may be partially obtained through partners, donations, or other non-NPS federal sources. Although the National Park Service would work to secure this funding, funding for these improvements would not be guaranteed. See appendix A for more information on construction and life-cycle costs of the alternatives.

MITIGATION MEASURES COMMON TO ALL ACTION ALTERNATIVES

Congress charged the National Park Service with managing the lands under its stewardship “in such manner and by such means as would leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 16 USC 1). As a result, NPS staff routinely evaluate and implement mitigative measures whenever conditions occur that could adversely affect the sustainability of national park system resources.

Mitigation measures are the practicable and appropriate methods that would be used under an action alternative to avoid or minimize harm to visitors and park natural and cultural resources. The following mitigation measures would be implemented during the action alternatives, as needed. The measures were developed to minimize the degree and/or severity of adverse effects and are specific to the project area and to the resource issues analyzed in this document. Unless otherwise noted, these measures would be applied to all of the action alternatives, subject to funding and staffing constraints. The National Park Service would obtain any required federal and state environmental permits required for this project. As part of the permitting process, additional mitigation measures could be required by other agencies.

GENERAL CONSTRUCTION BEST MANAGEMENT PRACTICES

Best management practices would be implemented, as appropriate, before, during, and/or after construction of the proposed improvements. Best management practices specific to the design cannot be proposed until the full design is complete and specifics of the proposed construction are known. The construction practices listed below are subject to change and additions during construction to mitigate impacts to resources.

- To minimize the amount of ground disturbance, staging and stockpiling areas would be located in previously disturbed sites, away from visitor use areas to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions and/or revegetated following construction. Parking areas for construction vehicles would be limited to these staging areas, existing roads, and previously disturbed areas.
- Construction zones would be identified and fenced with construction tape, snow fencing, or some similar material prior to any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities, including materials staging and storage, beyond the construction zone as defined by construction zone fencing.
- Construction debris would be placed in refuse containers at least daily, and refuse would be disposed of at least weekly. No burning or burying of refuse would be allowed inside the park.
- The storage, handling, and disposal of all hazardous materials and waste would comply with applicable federal and state regulations. Provisions would be made for storage, containment, and disposal of hazardous materials used on-site. To minimize possible petrochemical leaks from construction equipment,

all equipment would be monitored frequently to identify and repair any leaks and would be staged in designated areas suitable to contain leaking materials. Trained personnel would clean up and dispose of any leakage or spill from construction equipment such as hydraulic fluid, oil, or fuel. Fueling and fuel storage areas would be permitted only at approved locations and comply with park refueling guidelines.

- Fueling and fuel storage areas would be bermed and lined to contain spills. Provisions would be made (clay or plastic liners) for the containment and disposal of oil-soaked or contaminated soils.
- All construction equipment that has the potential to leave the road would be pressure washed before entering the park.
- Materials from deconstructing the visitor center, debris from new construction, and parking lot asphalt debris would be reused, recycled, or disposed of outside of the park.

CULTURAL RESOURCES

- Actions proposed in alternatives B and C would have an adverse effect on historic structures and cultural landscapes within the Colter Bay Village Developed Area Historic District (an adverse effect is found when an action may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association). Alternative D would have an adverse effect on historic

structures only. Prior to implementing any of the action alternatives, an appropriate mitigative strategy would be developed in consultation with the Wyoming state historic preservation officer (SHPO) and, if necessary, the Advisory Council on Historic Preservation. Mitigation agreed upon would be outlined in a memorandum of agreement negotiated among the National Park Service, state historic preservation officer, and Advisory Council on Historic Preservation, and consulting parties as necessary. Any mitigative documentation would be prepared in accordance with section 110 (b) of the National Historic Preservation Act, and the documentation submitted to the Historic American Buildings Survey / Historic American Engineering Record / Historic American Landscape Survey program.

- In the unlikely event that archeological resources are discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources cannot be preserved in situ, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and, as necessary, American Indian tribes.
- In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 would be followed. If non-Indian human remains were discovered, standard reporting procedures to the proper authorities would be followed, as would all

applicable federal, state, and local laws.

- Adherence to NPS standards and guidelines on the care and display of museum collections would be maintained, including museum collection items used in exhibits in the visitor center or visitor contact station.

resources outside the approved construction limits.

- Pre- and post-project nonnative plant monitoring would be conducted in the project area to ensure successful revegetation, maintain plantings, and replace plants that do not survive. Invasive weed control measures would be implemented and a management plan for continual maintenance would be drafted to monitor and mitigate impacts within the first three years of construction.

NATURAL RESOURCES

Vegetation

- A revegetation plan would be developed for the project that would incorporate, among other things, the use of native species, plant salvage potential, nonnative vegetation and noxious weed management, and pedestrian barriers to prevent establishment of user-created trails. The plan would incorporate screening structures and parking areas. Revegetation efforts would include imitating the natural spacing, abundance, and diversity of native plant species. Natural groupings of vegetation, rocks, or other natural features would be used for screening, as appropriate. Local native species would be used and there would be no irrigation needs beyond that needed for plant establishment.
- Existing native vegetation would be salvaged and preserved to the extent possible for use in revegetating disturbed areas. Existing trees would be preserved to the extent possible.
- Construction would follow best practices for topsoil management, revegetation preparation, and revegetation.
- Disturbance zones and construction and staging areas would be fenced or clearly marked to prevent impacts to

- In an effort to avoid introduction of nonnative plant species, only certified weed-free materials would be used for erosion control. Any proposed materials would be reviewed on a case-by-case basis; allowable materials for erosion control may include: rice straw, straw or hay determined by NPS staff to be weed-free purchased from a certified source, cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales.
- Topsoil would be re-spread in as near to the 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 would be damaged or removed without prior approval via the project documents or by park vegetation management staff.
- Construction workers and supervisors would be provided with tree pruning guidelines to minimize damage to trees during project implementation.

- Work limits, travel paths, and staging areas would be designated and enforced to mitigate impacts to vegetation. Fencing and barriers would be used as necessary to restrict contractor operations to these areas.

Wildlife and Special Status Species

- Section 7 consultation with the U.S. Fish and Wildlife Service, Wyoming office, would be completed prior to implementation of actions proposed in this environmental assessment.
- Construction workers and supervisors would be informed of the potential for special status species within the work vicinity. Contract provisions would require the cessation of construction activities if a special status species was discovered in the project area, until park staff re-evaluates the project. This would allow modification of the contract for any measures determined necessary to protect the discovery.
- Under the Migratory Bird Treaty Act, no migratory bird, nest, or egg would be disturbed, removed, or destroyed. To minimize the potential for “taking” a nest of any protected bird species, park resource managers would survey the site before tree removal and/or ground-breaking activities commence to mitigate any potential issues in advance of site construction.
- Appropriate measures would be taken to reduce the potential for bear-human conflicts. All contractors and employees would be trained and required to comply with the park’s bear management plan and food storage regulations during construction and rehabilitation activities. All project staff, trainees,

and other personnel would be briefed about food storage needs and bear safety protocols. Bear-proof garbage containers would be required. Food, fuel, and other attractants would be stored and handled to minimize potential conflicts (i.e., no food, garbage, drink, trash, or food and drink containers would be placed outside vehicles, trailers, or bear-resistant containers except during times when they are being used). All bear/human confrontations would be reported to resource management staff.

Soils

- To minimize soil erosion at the project site, erosion control best management practices, including protection measures such as sediment traps, silt fences, erosion check screens / filters, jute mesh, and hydro mulch, would be used if necessary to prevent the loss of soil. Compacted soils would be scarified and original contours reestablished.
- Excavated soil may be re-used within the project area; excess soil would be stored only in approved areas. Topsoil would be removed and returned to the same area once construction activities are completed. Live vegetation less than 3 feet in height, and limbs less than 2 inches in diameter may be incorporated as topsoil in the stockpiles. Care would be taken to ensure that topsoil and fill material are not mixed and are stockpiled in separate areas (i.e., topsoil to the right of the trench and fill to the left).
- Topsoil materials would be stockpiled in a predetermined designated area away from excavations and future work sites without intermixing with subsoils.

Stockpiles would then be graded and shaped to allow unimpeded surface water drainage. Stockpiles would be temporarily seeded and periodically treated to prevent wind from scattering topsoil and to prevent the introduction of nonnative plants.

- Any fill materials would be obtained from a park-approved source approved by the park ecologist. Borrow and aggregate materials from sources outside the park would be inspected to avoid importation of nonnative plants.
- The contractors would control dust during construction by minimizing soil exposure, water spraying, and use of other dust prevention methods.
- If construction is not completed 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.

Water Resources

- To the extent possible, construction activities would be conducted during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills reaching surface and/or groundwater.
- Equipment would be inspected for fluid leaks, including hydraulic and oil leaks, prior to use on construction sites, and inspection schedules implemented to prevent contamination of soil and water.
- Absorbent pads, booms, and other materials would be kept on-site during projects that use heavy equipment to contain oil, hydraulic

fluid, solvents, and hazardous material spills.

- Stormwater treatment would be incorporated as part of the construction plans to provide engineering methods and techniques specific to the finalized design drawings, which would minimize soil erosion and degradation in the project area during both construction and use of the area.
- In appropriate locations, storm drain inlet protection measures would be used to help prevent soil and debris (from site erosion) from entering storm drain drop inlets. Fabric barriers, straw bales, sandbags, block and gravel protection, etc., can be employed to create barriers. These barriers would be used in combination with other measures such as impoundments or sediment traps.
- Fueling and fuel storage areas would be bermed and lined to contain spills. Provisions would be made for the containment and disposal of oil-soaked or contaminated soils (clay or plastic liners). Construction equipment would be regularly inspected and maintained to prevent any fluid leaks. Contractors would promptly clean up 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 would be protected from snowmelt impacts.

Air Quality and Soundscapes

- Dust abatement measures would be employed to reduce airborne soil (including setting speed limits for

construction vehicles in unpaved areas). Dirt and debris to be hauled away in trucks would be covered. Dust generated by construction would be controlled by spraying water on the construction site, and/or applying other chemicals or compounds to reduce dust, if necessary.

- To reduce noise and emissions, construction equipment would not be permitted to idle excessively. Contractors would be required to work with NPS staff to devise procedures to eliminate unnecessary equipment and vehicle idling.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

According to CEQ regulations implementing the National Environmental Policy Act, the environmentally preferable alternative is the alternative “that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the responsible official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative.”

Alternative B is the environmentally preferable alternative for several reasons. The new visitor contact station would be more energy efficient (sustainable) in the long term. Energy-saving materials used in the design of the new building would be more sustainable in terms of energy and water consumption. As noted in the description of the alternative, the facility would be at least 30% more energy efficient than a typical new building. The new visitor contact station would require much less energy to heat and cool due to its smaller footprint, and thus, would be more energy efficient than the visitor center in alternatives C and D. While there would be some new ground disturbance that would affect the environment, disturbing and removing vegetation and soil on about 0.2 acre, alternative B would also remove and revegetate the largest amount of pavement. Although alternative B would have adverse impacts on the cultural landscape and historic structures due to reconfiguring parking areas and roads and removal of the historic visitor center, these adverse cultural impacts would benefit natural resources. For these reasons, alternative B would cause the least damage to the biological and physical environment and best protect, preserve, and

enhance natural resources, thereby making it the environmentally preferable alternative.

Although alternative A (no action) would not result in construction or ground-disturbing activities that would damage the environment, the alternative would have other impacts. The few Vernon Collection items that remain in the building would continue to be subject to potential damage due to substandard storage and display conditions. The existing visitor center building was built using 1950s construction standards, and is not energy efficient (sustainable). Thus, retaining the existing building would continue to require more energy to heat in the winter than would a new building. In addition, it is likely that stormwater runoff in the parking areas would continue to discharge pollutants from vehicles into Colter Bay (Jackson Lake). Therefore, alternative A would have greater environmental impacts than alternative B.

Alternative C would reconfigure parking areas and roads, and would remove the historic visitor center. These actions would have adverse impacts on the cultural landscape and historic structures. Although the alternatives would have beneficial natural resource impacts with the removal of portions of the parking areas, they also would have adverse impacts to soils, vegetation, and wildlife due to ground-disturbing activities related to new construction. Therefore, alternative C would have greater overall environmental impacts than alternative B.

As in alternatives B and C, alternative D would remove the historic visitor center, which would be an adverse impact. Alternative D would have fewer adverse impacts on the cultural landscape than alternative B because only a small portion of one parking area would be altered. But the larger visitor center construction footprint in alternative D and noise from construction

near the lake would likely result in more short-term adverse impacts to wildlife than construction activities in alternative B. Also, since the visitor center in alternative D would be open year-round, versus seasonally in alternative B, there would be more energy costs associated with heating the new visitor

center. Finally, as noted above, the smaller area being restored in alternative D would have fewer beneficial impacts compared to alternative B. For all of these reasons, alternative D would have greater overall environmental impacts than alternative B.

ALTERNATIVES AND ACTIONS CONSIDERED AND DISMISSED FROM FURTHER CONSIDERATION

During the planning process, some additional alternatives and management actions were considered but eliminated from detailed study. These alternatives and management actions, and the reasons for dismissing them, are described below.

MINIMAL SERVICES ALTERNATIVE

The concept of this alternative was to provide vital visitor and NPS services while minimizing construction and long-term maintenance costs associated with new facilities. This alternative was developed early in the planning process. It would have replaced the visitor center with a small visitor contact station at an alternate location, and moved the Vernon Collection and all exhibits to an alternative location. Substantial modifications would be made to roads, parking areas, and walkways consistent with providing minimal NPS visitor services, increased safety, and improved access for disabled visitors. Paved areas would be reduced and restored to more natural conditions. A picnic area would be provided at the site of the old visitor center, and an overlook/trailhead would be established near the picnic area. This alternative was dismissed because most of the key elements (with some modifications) were incorporated into the NPS preferred alternative (alternative B).

MAJOR REHABILITATION OF THE COLTER BAY VISITOR CENTER

This action consisted of rehabilitating the existing visitor center to bring it up to current NPS standards. The visitor center does not meet seismic codes, nor does it meet standards for fire detection and suppression. The structure does not meet NPS museum standards or ABA accessibility standards. The

building has poor ventilation and the heating and ventilation system is energy inefficient. Public restrooms are undersized for the level of visitation to Colter Bay. All of these deficient conditions would need to be corrected under this alternative. This alternative was dismissed from consideration because the cost of rehabilitating the building to eliminate the critical system and museum standard deficiencies is not cost effective. It would likely approach the cost of demolishing the building and replacing it with a new energy efficient structure that meets 21st century needs. An analysis of the facility's condition and deficiencies indicates that complete facility replacement is the most appropriate course of action. In addition, rehabilitating the visitor center does not meet the purpose and need of this plan.

REMOVE COLTER BAY VISITOR CENTER AND PROVIDE NO REPLACEMENT VISITOR FACILITY

This option would have removed the Colter Bay Visitor Center without providing a replacement. Visitors instead would obtain interpretive and orientation information at other park developed areas (e.g., Moose Visitor Center, Moran Entrance Station, Flagg Ranch Village).

This alternative was dismissed because there is a substantial need and demand for information and orientation information for visitors in the northern portion of the park. In 2011, more than 250,000 visitors used the Colter Bay Visitor Center. Colter Bay is the first large developed area encountered by visitors coming south from Yellowstone National Park into Grand Teton National Park. In addition, many visitors stay overnight at Colter Bay: the overnight capacity of the area is approximately 2,300

visitors per night, with its 350-site campground, rental cabins, and tent cabins. Many of these visitors use the existing visitor

center. Without such a facility, the quality of their experience would be diminished.

FUTURE PLANNING EFFORTS

Within three to five years of the approval of this visitor services plan, the park plans to finish the second phase of this planning effort, which will include completing an environmental assessment to determine

where the Vernon Collection will be housed in the park. Completion of the second phase is dependent upon the park receiving funding for this planning effort.

SUMMARY TABLES

COMPARISON OF THE ALTERNATIVES

TABLE 2. COMPARISON OF THE ALTERNATIVES

	Alternative A (No Action)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Overall Concept	Continue existing management direction for NPS visitor services at Colter Bay.	Enhance visitor experience, improving Colter Bay’s rustic character, increasing long-term sustainability of facilities, and reducing as much as possible the impact of the built environment on natural and scenic resources. Encourage visitors to experience outdoor settings, improve wayfinding, and improve vehicular and pedestrian circulation. Substantially decrease the overall built environment footprint.	Enhance the visitor experience but compared to alternative B provide more NPS services indoors and place less emphasis on maintaining or improving Colter Bay’s rustic character. Improvements to roads, parking, and pedestrian circulation would improve wayfinding and parking convenience. Decrease the overall built environment footprint (less than in alternative B).	Make relatively few changes to NPS visitor services in the project area while still improving the visitor experience and operational efficiency. Replace the Colter Bay Visitor Center with a larger modern facility that includes a museum collection and exhibit facility for the entire park. Keep existing functions in place. Make minor parking and walkway improvements.
Visitor Facility (see appendix B for details)	Make critical repairs to allow continued use of the existing visitor center (12,326 sq ft). Continue to operate the visitor center during winter even though building is unstaffed and closed to the public (except public restrooms). Provide moderate heat to interior spaces, including public restrooms, so water supply plumbing does not freeze, to protect the few remaining museum collection items, and to allow the computer network server to function.	Replace the Colter Bay Visitor Center with a new visitor contact station (approximately 4,400 sq ft) at a nearby location. Shut down the new visitor contact station completely during the 7-month off-season (early October to early May).	Replace the Colter Bay Visitor Center with a new smaller visitor center (fewer functions, approximately 9,200 sq ft) at a nearby location. Except for public restrooms, shut down the new visitor center completely during the 7-month off-season (early October to early May).	Replace the Colter Bay Visitor Center with a larger one (approximately 18,100 sq ft) at the same location that includes a parkwide museum collection facility. Except for the public restrooms, close the facility to public use during the 7-month off-season (early October to early May). Keep the facility operating for administrative purposes year-round.

TABLE 2. COMPARISON OF THE ALTERNATIVES

	Alternative A (No Action)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Vernon Indian Arts Collection	Continue to store the Vernon Collection at the Western Archeological and Conservation Center in Tucson, Arizona, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park. Provide modest exhibits in the existing Colter Bay Visitor Center.	Move the Vernon Collection (all but two exhibit cases from visitor center) to an alternate location in the park that meets NPS standards.	Provide exhibit space for a small portion ¹ of the Vernon Collection in new Colter Bay Visitor Center. Move Vernon Collection to an alternate location in the park that meets NPS standards.	Provide exhibits and curatorial storage at a parkwide museum collection facility in a new Colter Bay Visitor Center.
Visitor Facility Exhibits	Provide a variety of exhibits in the existing visitor center.	Provide minimal exhibits in the visitor contact station lobby, including two Vernon exhibit cases.	Provide modest exhibits in new visitor center.	Provide in new visitor center.
Bookstore	Would remain in existing visitor center.	Provide in visitor contact station.	Provide in new visitor center.	Provide in new visitor center.
Storage & Computer Network Server	Would remain in existing visitor center.	Move to NPS operations area at Colter Bay.	Move to NPS operations area at Colter Bay.	Provide in new visitor center.
Interpretive Offices	Would remain in existing visitor center.	Provide shared interpretive workspace in visitor contact station.	Provide minimal interpretive office in new visitor center.	Provide in new visitor center.
Theater	Would remain in existing visitor center.	No indoor theater.	Provide flexible multipurpose space that can be used as a theater in new visitor center.	Provide flexible multipurpose space that can be used as a theater in new visitor center.
Permit Office	Would remain in existing visitor center.	Combine with information desk; provide separate secure room for fee counting.	Provide in new visitor center.	Provide in new visitor center.
Access Point to Lakeshore	Would remain as is.	Create a lake overlook/gathering area/trailhead for pedestrians.	Create a lake overlook/gathering area/trailhead for pedestrians.	Reduce pavement and make wayfinding and minor aesthetic improvements.

¹ Assumes that only Vernon Collection items that can withstand climatic extremes without damage or that can be transported into/out of the visitor center seasonally are exhibited (visitor center shut down in winter).

TABLE 2. COMPARISON OF THE ALTERNATIVES

	Alternative A (No Action)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Picnic Area	Provide 4–6 picnic tables randomly dispersed near the store and visitor center.	Provide picnic area (8–12 tables) at site of former visitor center.	Provide picnic area (8–12 tables) at site of former visitor center.	Provide 2–3 picnic tables randomly arranged near store.
Vault Toilets	None	Provide vault (or similar) toilets that can also be used as winter restroom near picnic area.	None	None
Functions Moved Outdoors	None	<ul style="list-style-type: none"> –Information/orientation and interpretive panels (part) –Covered space (e.g., pavilion) for park programs and artist demonstrations. –Shed storage for cold-resistant equipment such as bear canisters and possibly lake-related equipment such as paddles and personal flotation devices. 	None	None
Functions Moved Elsewhere in the Park	None	<ul style="list-style-type: none"> –Move Vernon Collection from the Western Archeological and Conservation Center (Tucson, Arizona) to a new parkwide collection facility at a new location in the park. –Move computer network server and possibly some storage from the old visitor center to the Colter Bay operations area. 	<ul style="list-style-type: none"> –Move Vernon Collection from the Western Archeological and Conservation Center (Tucson, Arizona) to a new parkwide collection facility at a new location in the park. –Move computer network server and possibly some storage from the old visitor center to the Colter Bay operations area. –Move most interpretive office space to Colter Bay operations area. 	None

TABLE 2. COMPARISON OF THE ALTERNATIVES

	Alternative A (No Action)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Circulation (roads, parking areas, walkways)	No changes.	Make substantial modifications, separating parking from the roadway (except in the marina) to improve vehicular circulation, increase safety, and improve ADA access. Reduce pavement and better align parking with use; restore unused areas to more natural conditions. Arrange circulation and wayfinding to encourage visitors to walk instead of drive.	Make substantial modifications within similar footprint to reduce congestion, improve flow, increase safety, and improve ADA access. Separate parking from roadways. Provide pull-through parking for oversized vehicles. Reduce pavement; restore unused areas to more natural conditions. Arrange circulation and wayfinding to encourage visitors to walk instead of drive.	Repair and repave with minor modifications: improve ADA access, remove selected (least-used) parking. Improve wayfinding as possible given existing circulation system. Parking along roadways remains.
Construction Cost Estimate (general class C) (in 2011 dollars)	\$4.8 Million	\$9.5 Million	\$16.2 Million	\$19.1 Million

SUMMARY OF KEY IMPACTS

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Cultural Resources				
Historic Structures	Alternative A would have long-term, minor, site-specific, beneficial impacts on historic structures primarily from the repairs to the Colter Bay Visitor Center that would continue to occur. There would be potential for permanent, moderate, adverse cumulative impacts when the effects of alternative A are added to the effects of other NPS actions in the Colter Bay area. The beneficial impacts of alternative A would not lessen the overall adverse, moderate impacts of the cumulative actions.	Alternative B would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center. There would be the potential for permanent, moderate, adverse cumulative impacts when the effects of alternative B are added to the effects of other NPS actions in the Colter Bay area. Alternative B would add a large adverse increment to the overall adverse cumulative impact.	Alternative C would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center. There would be the potential for permanent, moderate, adverse cumulative impacts when the effects of alternative C are added to the effects of other NPS actions in the Colter Bay area. Alternative C would add a large adverse increment to the overall adverse cumulative impact.	Alternative D would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center. There would be the potential for permanent, moderate, adverse cumulative impacts when the effects of alternative D are added to the effects of other NPS actions in the Colter Bay area. Alternative D would add a large adverse increment to the overall adverse cumulative impact.
Cultural Landscapes	Alternative A would have beneficial, negligible, long-term impacts to cultural landscapes in the Colter Bay developed area due to the continuation of routine maintenance efforts. There would be the potential for permanent, minor, adverse cumulative impacts when the effects of alternative A are added to the effects of other NPS actions in the Colter Bay area. The beneficial impacts of alternative A would not diminish the overall adverse cumulative impacts.	Alternative B would have adverse, moderate, permanent, site-specific impacts to cultural landscapes in the Colter Bay developed area due to the substantial changes to contributing cultural landscape patterns and features. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative B are added to the effects of other NPS actions in the Colter Bay area. Alternative B would add a large adverse increment to the overall adverse cumulative impacts.	Alternative C would have adverse, moderate, permanent, and site-specific impacts to cultural landscapes in the Colter Bay developed area due to the substantial changes to contributing cultural landscape patterns and features (changes would not be as substantial as those in alternative B). There would be potential for moderate, permanent, adverse cumulative impacts when the effects of alternative C are added to the effects of other NPS actions in the Colter Bay area. Alternative C would add a moderate adverse increment to the overall adverse cumulative impacts.	Alternative D would have adverse, moderate, permanent, and site-specific impacts to cultural landscapes in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center from the cultural landscape. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative D are added to the effects of other NPS actions in the Colter Bay area. Alternative D would add a small adverse increment to the overall adverse cumulative impacts.

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Museum Collections	Alternative A would have adverse, minor, long-term impacts as well as beneficial, moderate, long-term impacts to museum collections because a small portion of the Vernon Collection would remain in the Colter Bay Visitor Center where it would be less protected compared with the majority of the collection that would remain at the NPS Western Archeological and Conservation Center where it is well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park. There would be no cumulative impacts.	Alternative B would have adverse, minor, long-term impacts as well as beneficial, moderate, long-term impacts to museum collections in the Colter Bay developed area because a small portion of the Vernon Collection would be exhibited in the Colter Bay visitor contact station where it would be less protected compared with the majority of the collection that would remain temporarily at the NPS Western Archeological and Conservation Center where it is well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park. There would be no cumulative impacts.	Alternative C would have adverse, minor, long-term impacts as well as beneficial, moderate, long-term impacts to museum collections because a portion of the Vernon Collection would be housed in a facility in the Colter Bay developed area that does not meet NPS museum standards compared to the rest of the collection remaining temporarily at the NPS Western Archeological and Conservation Center where it is well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park. There would be no cumulative impacts.	Alternative D would have moderate, long-term, beneficial impacts to museum collections at the NPS Western Archeological and Conservation Center and at the new Colter Bay Visitor Center (when completed and operational) because the collection would be protected according to NPS museum standards at each location. There would be no cumulative impacts.
Natural Resources				
Soils	Alternative A would have a long-term, negligible, adverse effect on soils in the Colter Bay area, primarily due to continued visitor use of the area. When the effects of alternative A are added to other NPS actions occurring in the area, there would be the potential for a long-term, negligible, adverse cumulative impact to soils.	Alternative B would have both long-term, minor, adverse and beneficial effects on soils in localized areas. Overall, the alternative would have a long-term, moderate, beneficial effect on soils, primarily due to restoration activities. There would be the potential for a long-term, minor to moderate, beneficial cumulative impact when the effects of alternative B are added to the effects of other actions in the Colter Bay area. Alternative B would add a large beneficial increment to the overall cumulative impact.	Alternative C would have both minor, long-term, adverse and beneficial effects on soils in localized areas. Overall, the alternative would have a long-term, moderate, beneficial effect on soils primarily due to restoration activities. When the effects of other actions are added to the effects of alternative C, there would be a long-term, minor to moderate, beneficial, cumulative impact on soils in the Colter Bay area. Alternative C would add a large beneficial increment to the overall cumulative impact.	Alternative D would not affect most soils of the project area. The alternative would have both adverse and beneficial impacts in localized areas. Overall, alternative D would have a long-term, minor, beneficial impact on soils due to restoration activities. When the effects of other actions are added to the effects of alternative D there would be a long-term, minor, beneficial, cumulative impact on soils in the Colter Bay area. Alternative D would add a considerable beneficial increment to this overall cumulative impact.

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Water Quality	Alternative A would continue to result in a minor, long-term, adverse impact on water quality, primarily due to some stormwater runoff from Colter Bay parking areas and discharges from boats in the marina. There would be a long-term, minor, adverse cumulative impact on water quality when the effects of alternative A are added to the discharges from motor boats in the marina.	Alternative B would, overall, result in a minor, long-term, beneficial impact on water quality due primarily to stormwater treatment for the parking areas and revegetation of part of the former parking areas and roads. There would be a negligible to minor, long-term, beneficial, cumulative impact when the beneficial effects of alternative B are added to the adverse effects of motorboat use at the marina. Alternative B would add a relatively large contribution to the overall cumulative impact.	Alternative C would have similar impacts on water quality as alternative B. Alternative C would, overall, have a minor, long-term, beneficial impact on water quality due primarily to incorporation of stormwater treatment for the parking areas and revegetation of some former parking areas and roads. There would be a negligible to minor, long-term, beneficial, cumulative impact when the beneficial effects of alternative C are added to the adverse effects of motorboat use in the marina. Alternative C would add a relatively large beneficial increment to this overall cumulative impact.	Alternative D would have a minor, long-term, beneficial impact on water quality due primarily to incorporation of stormwater treatment for the parking areas and revegetation of a small part of the existing parking area. When the beneficial effects of alternative D are added to the adverse effects from motorboat use in the marina, there would be a long-term, negligible to minor, beneficial, cumulative impact on water quality. Alternative D would add a relatively large beneficial increment to this overall cumulative impact.
Vegetation	Alternative A would have a minor, long-term, adverse effect on the vegetation in the Colter Bay project area, primarily due to people walking off paved paths and trampling vegetation. When the effects of alternative A are added to the effects of other actions in the area, there would be a minor, long-term, cumulative adverse effect on native vegetation in the Colter Bay area. Alternative A would add a small increment to the overall adverse cumulative impact.	Overall, alternative B would have a long-term, minor to moderate, beneficial impact on vegetation due to restoration of native vegetation associated with reconfiguring roads and parking areas. Alternative B would result in a long-term, minor, beneficial, cumulative effect when its effects are added to the effects of other reasonably foreseeable actions in the area. Alternative B would add a substantial increment to the overall beneficial cumulative effect.	Overall, alternative C would have a long-term, minor to moderate, beneficial impact on vegetation due to the restoration of native vegetation associated with reconfiguring roads and parking areas. There would be a long-term, minor, beneficial, cumulative impact when the effects of alternative C are added to other reasonably foreseeable actions in the area. Alternative C would add a large increment to the overall beneficial cumulative effect.	Alternative D would not affect most of the project area's vegetation. The alternative would have a long-term, minor, beneficial effect due to the removal and revegetation of part of a parking area. When the beneficial effects of alternative D are added to other reasonably foreseeable actions in the Colter Bay area there would be a negligible to minor, long-term, beneficial cumulative impact on the area's vegetation. Alternative D would add a relatively large increment to the overall beneficial cumulative effect.

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
Wildlife	Alternative A would continue to result in a long-term, negligible, adverse impact on wildlife populations and habitat, largely due to the presence of people and facilities in the Colter Bay area. When the effects of reasonably foreseeable actions in the area are added to the negligible adverse effects of alternative A, there would be a long-term, negligible, adverse cumulative impact on wildlife in the area. Alternative A would add a relatively large increment to the overall cumulative impact.	Alternative B would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative B would have a minor, long-term, beneficial effect on wildlife in the area, primarily due to the restoration of wildlife habitat. When the effects of alternative B are added to the effects of other reasonably foreseeable actions in the area there would be a long-term, minor, beneficial, cumulative impact. Alternative B would add a relatively large increment to the overall beneficial cumulative impact.	Alternative C would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative C would have a minor, long-term, beneficial effect on wildlife in the area, primarily due to the restoration of wildlife habitat. There would be a minor, long-term, beneficial, cumulative effect when the impacts of alternative C are added to the effects of other reasonably foreseeable actions in the area. Alternative C would add a relatively large increment to the overall beneficial cumulative impact.	Alternative D would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative D would have a negligible, long-term, beneficial effect on wildlife in the area, primarily due to restoration of wildlife habitat. There would be a long-term, negligible, beneficial, cumulative impact when the effects of alternative D are added to the effects of other reasonably foreseeable future actions in the area. Alternative D would add a relatively large increment to the overall cumulative impact.
Special Status Species	Alternative A would continue to have a negligible, long-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine primarily due to potential displacement or disturbance of a few individual animals by human activities. No new actions would occur under alternative A that would affect the four species, although reasonably foreseeable NPS actions in the area would continue to have the potential to cause short-term, negligible to minor, adverse effects. There could be the potential for long-term, minor, cumulative, adverse impacts when the effects of alternative A are added to NPS and other actions in the area. However, alternative A would add a very small increment to the overall adverse cumulative impact. In summary, this alternative may affect but would not be likely to	Alternative B could have both adverse and beneficial effects on the four special status species in the area. Alternative B would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine in the area, primarily from construction activities that would potentially displace or disturb animals in the immediate area. Overall, alternative B would have a long-term, negligible, beneficial impact on grizzly bear, and there could be a long-term, negligible, beneficial effect on the other three special status species, primarily due to the relocation of facilities away from the Colter Bay lakeshore. No population-level impacts to the four special status species would occur under alternative B. There would be the potential for long-term, minor,	Alternative C could have both adverse and beneficial effects on the four special status species in the area. Alternative C would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine in the area, primarily from construction activities potentially displacing or disturbing animals in the immediate area. Overall, alternative C would have a long-term, negligible, beneficial impact on grizzly bear, and there could be a long-term, negligible, beneficial effect on the other three special status species, primarily due to the relocation of facilities away from the Colter Bay lakeshore. No population-level impacts to the four special status species would occur under alternative C. There would be the potential for long-term, negligible,	Overall, alternative D would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine, primarily from construction activities potentially displacing or disturbing animals in the immediate area. However, no population-level impacts to the four special status species would occur as a result of the alternative. There would be the potential for long-term, minor, adverse, cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative D. In summary, alternative D may affect but would not be likely to adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
	adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.	cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative B. In summary, alternative B may affect but would not likely adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.	cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative C. In summary, alternative C may affect but would not likely adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.	
Scenic Resources	Alternative A would have long-term, adverse, minor impacts on scenery in a localized area. Alternative A would have long-term, beneficial, and adverse, minor cumulative impacts when past and future actions affecting scenic resources are added to the impacts of alternative A. Alternative A would add a small adverse increment to this overall cumulative impact.	Alternative B would have a long-term, beneficial, moderate impact on scenery in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative B would have beneficial, minor to moderate impacts on scenery. Alternative B would add a small beneficial increment to this overall cumulative impact.	Alternative C would have long-term, beneficial, minor impacts on scenery in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative C would have beneficial, minor, cumulative impacts on scenery. Alternative C would add a small beneficial increment to this overall cumulative impact.	The overall impacts on scenery from implementing alternative D would be long term, adverse, and minor in intensity in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative D would have an adverse, minor, cumulative impact on scenery. Alternative D would add a small adverse increment to this overall cumulative impact.
Visitor Use and Experience	Alternative A would result in a long-term, negligible, adverse impact on visitor use and experience. Combined with other past, present, and reasonably foreseeable impacts from construction disturbance, alternative A would have a negligible, adverse, cumulative impact on visitor experience. The no-action alternative would have a small adverse contribution to this cumulative effect.	Overall, implementation of alternative B would result in impacts to recreational opportunities and experiences that are long term, beneficial, and moderate in intensity. The changes to restrooms, information counter/orientation area would result in impacts that are long term, beneficial, and negligible to minor in intensity. The changes to the bookstore would result in long-term, adverse, minor impacts on visitor experience. The changes to the theater and visiting artist area would result in long-term, adverse, minor impacts on visitor experience. The impacts from changes to vehicle circulation and wayfinding would	Overall, the improvements under alternative C to recreational opportunities and experiences, facilities, and services; and vehicle circulation and wayfinding would result in impacts that are long term, beneficial, and minor to moderate in intensity. The reduction in the number of parking spaces would result in impacts that would be adverse and negligible to minor in intensity. The construction disturbance related to implementing alternative C would have short-term, adverse impacts that are moderate in intensity. Past, present, and reasonably foreseeable actions within Colter Bay would affect visitor	Overall, there would be no change to recreational opportunities and experiences as a result of alternative D. The changes to circulation, wayfinding, and parking would be long term, beneficial, and negligible in intensity. Display of the Vernon Collection at the replacement visitor facility would have an impact to visitor experience that is long term, beneficial, and moderate in intensity. Changes to the bookstore would result in a long-term, minor, adverse impact to visitor experience. The construction-related disturbances of implementing alternative D would have short-term adverse impacts that are moderate in intensity. Past,

TABLE 3. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (Preferred Alternative)	Alternative C	Alternative D
		result in a long-term, moderate, beneficial impact to visitor experience. The reduction in the number of parking spaces would result in impacts that are long term, adverse, and negligible to minor in intensity. The construction disturbance related to implementing alternative B would have short-term, adverse, impacts that are moderate in intensity. Combined with other past, present, and reasonably foreseeable actions on visitor use and experience, alternative B would have a minor, beneficial, cumulative impact. The NPS preferred alternative would add a small adverse increment to this overall cumulative impact.	experience the same as that for alternative B. The impacts of these related actions, in conjunction with the impacts of alternative C, would result in a minor, beneficial, cumulative impact. Alternative C would add a small adverse increment to this overall cumulative impact.	present, and reasonably foreseeable actions within Colter Bay would impact visitor experience the same as alternative A. The impacts of these related actions, in conjunction with the impacts of alternative D, would result in a minor, beneficial, cumulative impact. Alternative D would add a small adverse increment to the overall cumulative impact.
Park Operations	Alternative A would contribute beneficial and adverse, minor impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative A would have a beneficial, minor, cumulative impact to park operations. Alternative A would add a very small adverse increment to this overall cumulative impact.	Alternative B would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable impacts on park operations, the NPS preferred alternative would have a short- and long-term, beneficial, and adverse, minor to moderate, cumulative impact to park operations. Alternative B would add a very small beneficial increment to this overall cumulative impact.	Overall, alternative C would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable impacts on park operations, alternative C would have a short- and long-term, beneficial, and adverse, minor to moderate, cumulative impact to park operations. Alternative C would add a very small beneficial increment to this overall cumulative impact.	Overall, alternative D would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable impacts on park operations, alternative D would have a cumulative impact to park operations that is short term, adverse, and moderate in intensity. Alternative D would add a very small adverse increment to this overall cumulative impact.

SUCCESS AT MEETING PROJECT GOALS

TABLE 4. SUCCESS AT MEETING PROJECT GOALS

Project Goals	Alternative A: No Action	Alternative B: Preferred Alternative	Alternative C	Alternative D
Accommodate critical NPS visitor service functions (e.g., information and orientation services)	Yes, critical visitor services functions would continue to be accommodated in the existing visitor center.	Yes, critical visitor services functions would be accommodated in a new visitor contact station.	Yes, critical visitor services functions would be accommodated in a new (replacement) visitor center.	Yes, critical visitor services functions would be accommodated in a new (replacement) visitor center.
Increase the environmental sustainability of facilities	No, environmental sustainability would remain similar to now.	Yes, environmental sustainability would be improved by replacing the existing visitor center with a small, more efficient, seasonal visitor contact station and by reducing the amount of pavement in the project area.	Yes, environmental sustainability would be improved by replacing the existing visitor center with a smaller, more efficient, seasonal visitor center and by reducing the amount of pavement in the project area slightly.	No. The replacement visitor center would be more energy efficient, but it would be larger and would operate year round (for administrative purposes only between early October and early May). The amount of pavement would be only slightly reduced.
Decide whether the Vernon Collection should return to Colter Bay	No, the future “home” of the Vernon Collection would remain at the NPS Western Archeological and Conservation Center, until a new collection facility that meets NPS museum standards could be constructed in the park.	Yes, rather than being returned to Colter Bay most of the Vernon Collection would be moved to an alternate location (for storage and display) within the park that meets NPS standards.	Yes, rather than being returned to Colter Bay most of the Vernon Collection would be moved to an alternate location (for storage and display) within the park that meets NPS standards.	Yes, the Vernon Collection would be returned to a larger seasonal visitor center at Colter Bay.
Highlight views of the Teton Range and improve opportunities to connect with Jackson Lake	Yes, views of the Teton Range would be highlighted at the existing visitor center. However, opportunities to connect with Jackson Lake would remain lacking.	Yes, views of the Teton Range would be highlighted at a new paved pedestrian overlook and opportunities to connect with Jackson Lake would be improved.	Yes, views of the Teton Range would be highlighted at a new paved pedestrian overlook and opportunities to connect with Jackson Lake would be improved.	Yes, views of the Teton Range would be highlighted at the replacement visitor center. However, opportunities to connect with Jackson Lake would remain lacking.
Improve vehicular and pedestrian circulation; minimize traffic congestion	No, vehicular and pedestrian circulation would remain essentially the same as now.	Yes, vehicular and pedestrian circulation would be improved and traffic congestion minimized by reconfiguring roads and parking lots.	Yes, vehicular and pedestrian circulation would be improved and traffic congestion minimized by reconfiguring roads and parking lots.	No, vehicular and pedestrian circulation would remain very similar to now.
Improve access for people with disabilities	No, accessibility improvements would not be made.	Yes, the new visitor contact station would be accessible and accessibility improvements would be made to pathways, parking, etc.	Yes, the new visitor center would be accessible and accessibility improvements would be made to pathways, parking, etc.	Yes, the new visitor center would be accessible and accessibility improvements would be made to pathways, parking, etc.

TABLE 4. SUCCESS AT MEETING PROJECT GOALS

Project Goals	Alternative A: No Action	Alternative B: Preferred Alternative	Alternative C	Alternative D
Improve wayfinding for visitors	No, wayfinding for visitors would remain a challenge within the project area.	Yes, wayfinding would be improved by reconfiguring roads, parking, pathways, and by improving and updating signs.	Yes, wayfinding would be improved by reconfiguring roads, parking, pathways, and by improving and updating signs.	Yes, but wayfinding would be only minimally improved by improving and updating signs.
Update facilities in ways that encourage visitors to explore the Colter Bay area on foot, leaving behind their parked cars.	No, vehicular and pedestrian circulation would remain essentially the same as now.	Yes, the reconfigured roads, parking, and pathways would encourage visitors to explore on foot.	Yes, the reconfigured roads, parking, and pathways would encourage visitors to explore on foot.	No, vehicular and pedestrian circulation would remain very similar to now.
Reduce the impact of the Colter Bay built environment on natural and scenic impacts	No, the impact of the Colter Bay built environment on natural and scenic resources would remain about the same.	Yes, the impact of the Colter Bay built environment on natural and scenic resources would be reduced.	Yes, the impact of the Colter Bay built environment on natural and scenic resources would be reduced.	No, the impact of the Colter Bay built environment on natural and scenic resources would remain about the same.
Size pavement appropriately (parking, roads, and/or walkways)	No, pavement would remain more than ample to serve current and anticipated visitor and operational needs.	Yes, the amount of pavement would be reduced substantially to better match current and anticipated visitor and operational needs.	Yes, the amount of pavement would be reduced slightly to better match current and anticipated visitor and operational needs.	Yes, the amount of pavement would be reduced slightly to better match current and anticipated visitor and operational needs.
Minimize costs	Yes, construction costs would be low in this alternative.	Yes, construction costs would be fairly low in this alternative.	No, construction costs would be moderate in this alternative.	No, construction costs may be prohibitively expensive in this alternative, especially considering that it would be challenging to divide the project into phases that could be funded separately over time.

AFFECTED ENVIRONMENT



View of Mount Moran from Colter Bay

INTRODUCTION

This “Affected Environment” chapter describes the existing environment of Colter Bay. The focus of this chapter is on key topics that have the potential to be affected by the alternatives should they be implemented. These topics are: (1) cultural resources, (2)

natural resources, (3) scenic resources, (4) visitor use and experience, and (5) park operations. The topics in this chapter generally correspond to the impact topics identified in chapter one.

CULTURAL RESOURCES

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

The Colter Bay area of Grand Teton National Park was developed in the late 1950s and early 1960s in accordance with a 1954 General Development Plan (see “Colter Bay Vicinity Map”). Designed as part of the nationwide NPS Mission 66 program, the Colter Bay developed area represents the ideals of mid-20th century national park planning and design for visitor services. The Mission 66 program (also referred to as Mission 66 in this section) was formally launched by NPS Director Conrad L. Wirth in 1956. Mission 66 was a 10-year, billion-dollar parks improvement program designed to upgrade facilities in all national parks by 1966, the 50th anniversary of the National Park Service. The Colter Bay development served as a pilot project in the Mission 66 program; it exemplified management goals of the program and represented an outstanding example of the Mission 66 development type.

The design of the Colter Bay developed area centralized visitor services, along with park administrative uses (e.g., park employee housing). It streamlined the visitor experience by offering overnight facilities (guest cabins, tent village, campground with RV hookups), day-use facilities (laundry, showers), food (grocery store and restaurant), a gift shop, and interpretation and park orientation (Colter Bay Visitor Center) in one location. With an emphasis on catering to automobile tourists, the visitor services area of Colter Bay was designed to mimic the (then) modern shopping center model, which included ample parking spaces. The guest cabins and tent village offered convenient front-door parking and simple, one-way driving loops that reflected the Mission 66 efforts to modernize park facilities. The campground also offered easy to navigate, one-way driving loops.

As a (then) modern park design, the layout of the Colter Bay development was an important and conscientious solution to many of the post-World War II concerns in national parks. The development removed visitor services from the more sensitive areas of the park, focusing visitor contact within a defined area. NPS landscape architect Thomas Vint and private architect Gilbert Stanley Underwood were instrumental in the early planning of the Colter Bay developed area. While their master plan for the site catered to the modern automobile tourist, it did not lose sight of the national park setting and the environmental concerns and expectations visitors had for facilities in the park. Vint and Underwood used the rolling topography of the Colter Bay area to disguise the extent of the development. Tucked behind low hills and tall conifer trees, the different development clusters were hidden in the landscape. Efforts were made throughout the project to save as many conifer trees as possible, including tucking the guest cabins into the forested hillside. Similar efforts were made in the campground.

In 2011, the park completed a draft determination of eligibility (as required under section 110 of the National Historic Preservation Act) for the Colter Bay Village developed area. The park determined the area is eligible for listing in the national register as a historic district with 188 contributing historic structures and 13 contributing cultural landscape characteristics; the Colter Bay Visitor Center and Indian Arts Museum is one of the historic structures in the district. The contributing cultural landscape characteristics include special organization, cluster arrangements, vegetation, topography, and circulation in the visitor area. Historic structures and cultural landscape characteristics determined eligible for listing are managed and subject to the same cultural resource laws and policies as those resources

that are listed in the national register. Information on the condition of the Colter Bay Visitor Center is in the “NPS Facilities in Project Area” section of this chapter.

MUSEUM COLLECTIONS

Since 1972, the Colter Bay Visitor Center and Indian Arts Museum have been home to the David T. Vernon Collection. The Vernon Collection consists of Indian art purchased by Laurance S. Rockefeller from collector David T. Vernon, an American collector of American Indian art and artifacts. Mr. Rockefeller donated the Indian art collection to the park in 1976 with the stipulation that it continue to be displayed at Grand Teton National Park. The collection comprises 1,429 objects dating from the 1830s to the 1920s and includes: arm bands and garters; headdresses; jewelry; applied decoration; domestic decoration; toys and games; pipes and accessories; sashes; shields; warfare items (clubs, bows, arrows); musical instruments; tools and utensils; animal decoration; moccasins; bags and pouches (including medicine and ceremonial); baskets; bowls; textiles/rugs; blanket strips; trade beads; clothing; decorated clay, wood, and bark; projectile points; painted hides; cradleboards; beadwork; quillwork; and medicine bundles.

More than 100 North American Indian tribes are represented by the variety of materials in the collection from geographic areas ranging from what is now Alaska to the Southwest, Great Lakes, and the Southeast. The diversity of American Indian cultures is evident in the variety of materials (quills; glass beads; wool, sinew; elk, buffalo, and deer hide; wood;

antler; silver; and grasses), designs (floral, abstract, realistic, and regional), and construction techniques (sewn, quilted, stamped, painted, woven, and carved) used to make the items. Considered as a historical collection, the objects are a representative sample of the material culture, craftsmanship, and individuality of American Indian tribes from the 1830s to 1920s. The National Park Service evaluated and determined the Vernon Collection to be nationally significant because of the American Indian art, history, and material culture represented.

Concerned about the long-term preservation of the Vernon Collection, the National Park Service moved a portion of the collection to the NPS Western Archeological and Conservation Center in Tucson, Arizona, in April 2005, and remaining items in October 2011, for critical conservation treatment and temporary storage. Some restored artifacts from the Vernon Collection will return to the Colter Bay Visitor Center in 2012 and the Craig Thomas Discovery and Visitor Center in 2013 to temporary exhibits to remind park visitors that the collection is required to be housed permanently in Grand Teton National Park. Within three to five years of the approval of this visitor services plan, the park plans to finish the second phase of this planning effort, which will include completing an environmental assessment to determine where the Vernon Collection will be housed in the park. Completion of the second phase is dependent upon the park receiving funding for this planning effort. Park management staff plan for and expect the Vernon Collection to have a permanent home in the park within 10 years of the approval of this visitor services plan.

NATURAL RESOURCES

SOILS

The soils in the Colter Bay Visitor Center area are part of the Taglake-Sebud soil association (USDA Soil Conservation Service 1982). About 75% of this map unit is very stony sandy loam, 15% is Sebud stony sandy loam, and 10% is in Walcott soils. The Taglake-Sebud soils are gently sloping to steep, very deep, well-drained soils, on glacial moraines. Walcott soils are found on gently sloping to moderately steep areas on valley bottoms and side slopes.

The very deep, well-drained Taglake soil formed in glacial till. In a typical profile the surface is covered with 1 inch of forest duff. The subsurface layer is very stony sandy loam 4 inches thick. The subsoil is very cobbly sandy loam and very stony sandy loam to 60 inches or more. Permeability is moderately rapid. The available water capacity is low. Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

The very deep, well-drained Sebud soil formed in alluvium. In a typical profile the surface layer is dark grayish brown, stony sandy loam 6 inches thick. The upper 5 inches of the subsoil is grayish brown stony sandy loam, and the lower 6 inches is very stony sandy clay loam. The substratum is very stony sandy loam to 60 inches or more. Permeability is moderate. The available water capacity is low. Surface runoff is medium, and the erosion hazard is moderate. Walcott soils are very deep, well-drained and formed in alluvium, colluvium, and glacial till. These soils have a gravelly sandy loam surface layer 8 inches thick, and underlying material consisting of very gravelly sandy loam to 60 inches or more. Permeability is moderately rapid. Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

WATER QUALITY

Water quality has not recently been sampled in the Colter Bay area. However, water quality is generally considered to be excellent based on data collected through 1999 (NPS 2001). Water quality sampling at that time indicated the water was low in total dissolved solids, dissolved oxygen concentrations were near saturation (indicating low organic pollution), and the nutrient concentrations were generally low. One parameter, pH (acid level), exceeded the water quality criterion for protection of freshwater aquatic life, but this was probably due to the photosynthetic activity of algal blooms during the spring and summer months—a common occurrence in reservoirs (G. Rosenlieb, NPS Water Resources Div., pers. comm., 7-6-2011). There is no reason to expect that water quality in Colter Bay has changed appreciably since these measurements were taken.

Two potential sources of pollution in the bay are motorboats at the marina, and runoff from parking lots. The parking lots have stormwater outlets, but it is uncertain where the untreated outflow specifically terminates. It is likely that the unflow is untreated. Stormwater from paved parking lots can carry oils, grease, fuel, paint chips, and heavy metals, although substantial levels of these pollutants have not been detected at Colter Bay. Water samples taken in the Colter Bay area in 2001–2003 found small concentrations of polycyclic aromatic hydrocarbons (PAHs) in the water (USGS 2005). PAHs are hazardous compounds found in crude oil, used motor oil, and asphalt. The PAHs found in the Colter Bay samples may have come from motorboats in the marina and/or from runoff from the parking lot. However, while some measurable concentrations of PAHs were present near the marina and higher use areas, these PAHs did not appear to be persistent. The authors concluded that small concentrations of PAHs

in the water of Jackson Lake were not of concern.

Stormwater may also be adding nutrients (nitrogen and phosphorus) into the lake. Colter Bay has some of the highest nutrient concentrations in Jackson Lake (G. Rosenieb, NPS Water Resources Division, pers. comm., 8-3-2011). It is unlikely that the stormwater runoff is primarily responsible for the concentration of nutrients, but it no doubt is contributing some nutrients.

VEGETATION

The “Vegetation” map illustrates vegetation in the project area as of 2002. Lodgepole pine (*Pinus contorta*) forest is the largest vegetative community in the area. The lodgepole stands are generally a mix of mature and immature trees, with a strong subcomponent of mixed ages of sub-alpine fir (*Abies lasiocarpa*), and Engelmann spruce (*Picea engelmannii*). The understory is primarily composed of grasses and forbs. Drier sites have an understory of grouse whortleberry (*Vaccinium scoparium*), elk sedge (*Carex geyeri*), fescue (*Festuca* sp.), and kinnikinnick (*Arctostaphylos uva-ursi*). Sites with more soil moisture may have an understory of bluejoint reedgrass (*Calamagrostis canadensis*).

Three other small vegetative communities are present in the project area. A small pocket of mixed grassland herbaceous vegetation is in the west-central part of the project area, along the lakeshore trail. A combination of forbs and grasses are present, with less than 10% cover of shrubs or trees. These areas tend to be dominated by a combination of native and nonnative grasses and aster species. Common native species include

bluejoint big reedgrass (*Calamagrostis canadensis*), tufted hairgrass (*Deschampsia cespitosa*), and cotton-grass spikerush (*Eleocharis palustris*). A small stretch of stream deposit-sparse vegetation occurs along the exposed lake shoreline, composed primarily of grasses and forbs, with some small stands of willow (*Salix* spp.) and aspen (*Populus tremuloides*). A small pocket of sagebrush (*Artemisia arbuscula*) dry shrubland occurs in the northeast corner of the project area. Grasses and a mix of forbs are present under the shrubs, including mountain brome (*Bromus marginatus*), fescue (*Festuca* spp.), Hesperostipa (*Hesperostipa comata*), sedge (*Carex hoodii*), pussytoes (*Antennaria* spp.), aster (*Aster* spp.), and arrowleaf balsamroot (*Balsamorhiza sagittata*).

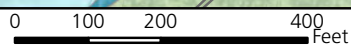
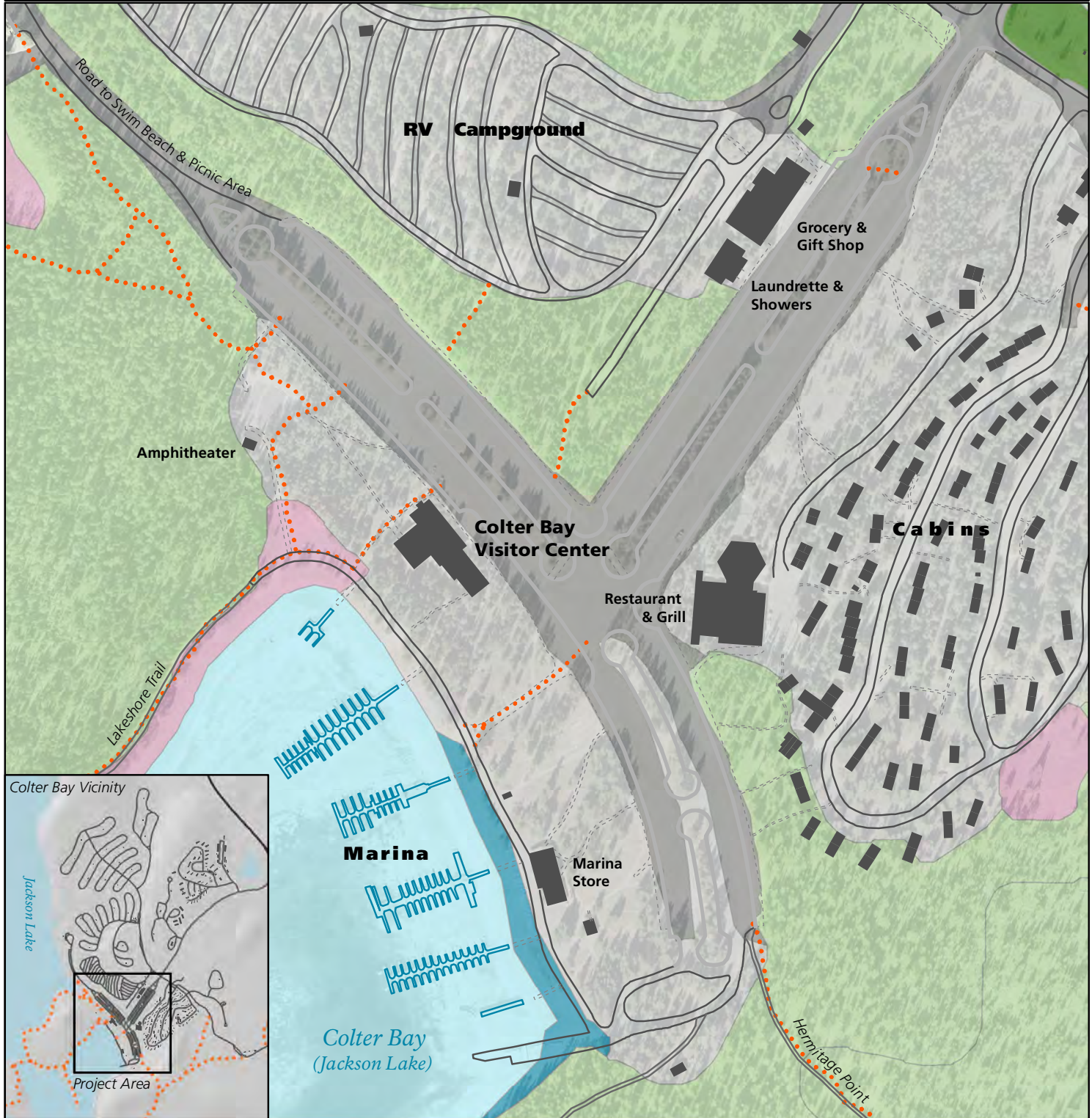
The entire project area was disturbed when facilities were developed in the 1950s and 1960s. As a result, the ecological integrity of the plant communities (in terms of species mix, age classes, disturbance regime, etc.) is relatively low compared to most other areas of the park. Facilities (roads, parking, structures, walkways, etc.) comprise more than half of the project area.

Nonnative Species

Several nonnative nuisance species are present along roadsides and other disturbed sites in the area. These include spotted knapweed (*Centaurea maculosa*), musk and Canada thistle (*Carduus nutans* and *Cirsium arvense*), butter-and-eggs / yellow toadflax (*Linaria vulgaris*), and cheatgrass (*Bromus tectorum*). Spotted knapweed is common throughout the project area.




Vegetation





Colter Bay Visitor Services Plan










Legend

Vegetation

-  Lodgepole Pine Forest
-  Mixed Grassland Herbaceous Vegetation
-  Sagebrush Dry Shrubland

-  Exposed Lake Shoreline
-  Waterbody
-  Residential and Facilities
-  Roads and Trails / Trailheads

-  Building Footprints
-  Road
-  Walkway
-  Dock
-  Trail
-  Walkway
-  Dock

WILDLIFE

Although Colter Bay is a developed area and the presence of humans, human-related activities, and facilities have altered much of the native wildlife habitat in the project area, wildlife still uses the area. No wildlife surveys have been conducted in the project area. Three snake species that typically occur near areas of water may be in the project area: wandering garter snake (*Thamnophis elegans vagrans*), and less frequently, valley garter snake (*Thamnophis sirtalis fitchi*) and rubber boa (*Charina bottae*).

Common amphibians present in the project area include western chorus frog (*Pseudacris triseriata*) and blotched tiger salamander (*Ambystoma tigrinum melanostictum*). The northern leopard frog (*Rana pipiens*) rarely occurs in the area.

Birds and mammals are the species most frequently found in the area. On Jackson Lake a variety of waterfowl may be seen such as Canada goose (*Branta Canadensis*), mallard (*Anas platyrhynchos*), Barrow's goldeneye (*Bucephala islandica*), common merganser (*Mergus merganser*), and sandhill crane (*Grus Canadensis*). In the lodgepole forests, common birds include olivesided flycatcher (*Contopus cooperi*), yellow-rumped warbler (*Dendroica coronata*), ruby-crowned kinglet (*Regulus calendula*), mountain chickadee (*Poecile gambeli*), white-crowned sparrow (*Zonotrichia leucophrys*), chipping sparrow (*Spizella passerine*), and dark-eyed junco (*Junco hyemalis*). Other common birds in the area include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), gray jay (*Perisoreus canadensis*), common raven (*Corvus corax*), barn swallow (*Hirundo rustica*), and mountain bluebird (*Sialia currucoides*).

Mammals commonly found in the area include deer mouse (*Peromyscus maniculatus*), Uinta ground squirrel (*Urocitellus armatus*), red squirrel (*Tamiasciurus hudsonicus*), pocket gopher (*Thomomys talpoides*), chipmunk (*Eutamias*

umbrinus), vole (*Microtus pennsylvanicus*), snowshoe hare (*Lepus americanus*), porcupine (*Erethizon dorsatum*), and beaver (*Castor canadensis*). Ungulates found in the area include elk (*Cervus Canadensis*), mule deer (*Odocoileus hemionus*), and moose (*Alces alces*). Predators using the area include striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and black bear (*Ursus americanus*).

Although the Colter Bay developed area is not prime wildlife habitat, the land near Jackson Lake is an important wildlife travel corridor. Elk range near the area during spring and fall migrations, although large numbers of elk do not move through the developed area, preferring to stay outside or on the periphery.

Special Status Species

Grizzly Bear. The grizzly bear (*Ursus arctos horribilis*) is listed as a federally threatened species. Grizzlies are relatively common in the southern Greater Yellowstone Area, and the northern portion of Grand Teton National Park falls within the grizzly bear primary conservation area. The Colter Bay area is not included in this zone, but is considered occupied grizzly bear habitat (NPS 2006). Grizzlies are commonly seen in the area while traveling along the Jackson Lake shoreline, and sometimes passing by the visitor center.

Grizzly bears have large home ranges (50 to 300 square miles for females; 200 to 500 square miles or more for males), encompassing diverse forests interspersed with moist meadows and grasslands in or near mountains (NPS 2006). The bears feed on a variety of food, depending on seasonal availability. In general, whitebark pine nuts, graminoids, and hooved animals are the most important foods in the grizzly bear's diet, but fish, small mammals, herbaceous vegetation, tubers, fruit, and insects also comprise a portion of their diet (Mattson and Knight 1991 as cited in NPS 2006). Ungulate

carcasses are an important high quality food source for bears (Mattson 1997 as cited in NPS 2006) and will often attract and keep bears in localized areas for periods of several days to a week or more.

The greatest threat to grizzly bears is human-caused mortality. Grizzly bears can become habituated to humans because of attractants such as garbage, pet foods, and improper camping practices. Park staff have been highly successful in promoting grizzly bear recovery and reducing bear-human conflicts (e.g., property damage, incidents of bears obtaining human food, and bear-inflicted injuries to humans) and human-caused bear mortalities. Recreational and administrative facilities, human activities, and human waste (garbage and sewage) in the park, including Colter Bay, are managed in a manner that results in few human-bear incidents.

The number of human-habituated (but not food-conditioned) grizzlies in the park has increased (NPS 2010a). These bears go about their daily routines in close proximity to humans and their developments, particularly roads, and because they are not afraid to approach developments or forage along park roads, may be more vulnerable to being hit by vehicles. This likely applies to Colter Bay as well.

Canada Lynx. The Canada lynx (*Lynx canadensis*) is listed as a federally threatened species (65 *Federal Register* [FR] 16051). The State of Wyoming classifies the lynx as a Species of Special Concern-Class 1, which indicates that habitat is limited and populations are restricted or declining (WGFD 2005). Lynx are considered rare in the Greater Yellowstone Area and are known to use boreal and montane forests.

Lynx are solitary carnivores generally occurring at low densities in boreal forest habitats, with their distribution and abundance closely tied to that of the snowshoe hare (*Lepus americanus*), their primary prey. However, this relationship may be muted or absent in more southern

populations (Halfpenny et al. 1982). In Wyoming, lynx occur primarily in spruce/fir and lodgepole pine forests with slopes of 8 to 12 degrees and at elevations from 7,995 feet to 9,636 feet (2,437 meters to 2,937 meters) (Ruediger et al. 2000). However, aspen stands and forest edges may also be important. Potential Canada lynx habitat areas for Grand Teton National Park have been identified based on these general habitat preferences. While none of the alternative project site locations are within this area, all are within 0.10 mile of potential lynx habitat (NPS 2000).

Information on lynx abundance and distribution within Grand Teton National Park is limited. Historical locations of lynx have been documented within the park (Reeve et al. 1986, McKelvey et al. 2000). More recent sightings and DNA detections have confirmed the continued occurrence of lynx in and adjacent to the park (Squires and Laurion 2000; Squires and Oakleaf 2005; Murphy et al. 2006; Holmes and Berg 2009; N. Berg, Utah State University, pers. comm., 2010). During the winter of 2007–2008, researchers documented lynx tracks in the Arizona Creek drainage near the park (N. Berg, pers. comm., 2010) and in the Colter Bay area (S. Patla, Wyoming Game and Fish Dept. biologist, pers. comm., 2010). Lynx tracks were detected on 10 occasions in the winter of 2008–2009 in the Togwotee Pass area (Holmes and Berg 2009). Identified lynx tracks included an area just south of the park boundary in the Spread Creek drainage. Radio-collared lynx from Colorado have been documented passing through the Teton Range and in the Togwotee Pass area. Whether any of the lynx recently detected are residents or transients, or if lynx currently reside in Grand Teton National Park, is unknown. Based on general habitat preferences and existing vegetative cover types, potential habitat for Canada lynx is present in the park. Forest cover types found in the general project area are within the elevation range and appear to be generally suitable habitat for lynx. However, low habitat quality (e.g., low densities of

snowshoe hares) may mean that Canada lynx, if present, would also occur at very low densities, perhaps only as transients (S. Cain, NPS wildlife biologist, pers. comm., 2002). The project area is within the Steamboat Lynx Analysis Unit.

Gray Wolf. Gray wolves (*Canis lupus*) were reintroduced into Yellowstone National Park and central Idaho in 1995 and 1996 as an “experimental nonessential” population. However, in national parks they are treated as a threatened species and all provisions of the Endangered Species Act apply. There is no critical habitat designated for gray wolves (USFWS 1994). Human-caused mortality and availability of prey are the two most limiting factors for wolf populations (Mech 1970). To date, most human-caused mortality of wolves in the Greater Yellowstone Area has come from management removals (mostly related to livestock depredations), illegal kills (from poaching), and by collisions with vehicles.

Gray wolves prey primarily on ungulates; elk, the principal prey species of wolves in the area, are abundant in the park. Wolves travel widely and are relatively tolerant of human presence, except while raising young near den and rendezvous sites. Wolf pups are born in mid-April to May, and packs use rendezvous sites into the fall.

All of Grand Teton National Park serves as suitable habitat for gray wolves. A variety of habitats and vegetation cover types are used. Wolf distribution varies depending on prey abundance. As of December 2011, about 500 gray wolves lived in the Greater Yellowstone Area, with about 50 wolves in 5 packs having territories in and adjacent to Grand Teton. The wolf population in the area has been stable the last several years. Territories of the Phantom Springs, Pacific Creek, and Huckleberry packs overlap the project area.

Wolverine. In December 2010, the North American wolverine (*Gulo gulo*) was designated a candidate species under the Endangered Species Act in the contiguous 48

states. Their current range is believed to include parts of Wyoming.

Wolverines are the second-largest member of the weasel family in North America. Breeding commences at 4 years of age or older, occurs only every 2 to 3 years, and produces litter sizes of just over one cub on average. Offspring accompany their mother for about a year before they disperse from the area. Female wolverines use natal (birthing) dens that are excavated in snow. Persistent, stable snow is strongly tied to wolverine habitat suitability and appears to be a requirement for natal denning because it provides security for offspring and buffers against cold temperatures. Wolverines are highly territorial and naturally occur at very low densities owing to their large spatial requirements. They are opportunistic feeders that consume a variety of foods, depending on availability. They primarily scavenge carrion, using an excellent sense of smell to find food beneath deep snow, but they also prey on small animals and birds, and feed on fruits, berries, and insects.

In the Rocky Mountain states where they typically prefer high elevations, and rugged and snowy terrain, the known breeding range of wolverines reaches its southernmost extent in Grand Teton National Park. In the Yellowstone region, where wolverines occur at a density of less than one per 100 square miles, long-term research has revealed that just two breeding females and two breeding male wolverines occupy the entire Teton Range. Because of the small wolverine population, the search for a mate and breeding territory requires covering long distances, sometimes traveling hundreds of miles; crossing low-elevation valleys between mountain ranges in the process. Recently, a radio-marked wolverine was tracked from just east of the park to Rocky Mountain National Park in Colorado.

In the park, wolverine observations are common in the Teton canyons across Jackson Lake from the project area. Several observations are documented in low-

elevation areas similar to and adjacent the project area. These include observations at Leeks Lodge in the Pacific Creek subdivision

on the park's east border, and along the Snake River at Deadman's Bar, Pacific Creek, Oxbow Bend, and Flagg Ranch.

SCENIC RESOURCES

GRAND TETON NATIONAL PARK

Grand Teton National Park is world renowned for its spectacular scenery and views. Protection of scenic resources is important to the purpose and significance of the park. Park significance (see “Chapter 1: Purpose and Need”) highlights the scenic resources, including stunning views of the Teton Range rising dramatically from the sagebrush flats and glacial lakes that reflect and expand the view. The opportunity for viewing wildlife is also identified in park significance.

The scenic resources of Grand Teton National Park have a high degree of cultural significance. Many of the views throughout the park are iconic and are reflected in the works of artists. The park is a favorite subject for professional and amateur artists, photographers, and writers whose work communicates the striking scenery to visitors and others.

Scenic vistas from many vantage points in and around the park are distinctive and memorable. The spectacular Teton Range, glacial lakes, sagebrush flats, wildlife, clean air, mutable skies and shadows, and panoramic views combine to offer a wealth of visual resources. As people travel through the park, whether by boat, horseback, bicycle, passenger vehicle, or on foot, they experience a sequence or pattern of visual resources that provide a cumulative visual experience of the various biological communities. This cumulative experience involves the interaction of multiple elements in relation to each other: the juxtaposition of individual features in the foreground and background, the interface of different surfaces, and the interplay of light reflecting off different colors and textures. Protecting this collection of visual resources is as important as protecting any one element.

Today, scenery is one reason the park is so popular. Sightseeing, wildlife viewing, and experiencing the wilderness and open space are the most frequently mentioned reasons for visiting Grand Teton National Park (Littlejohn 1998 and 2008). A visitor survey conducted in 1997 (Littlejohn 1998) found viewing the mountains to be the highest-rated recreation activity (98%). Viewing wildlife in general (88%), and elk and bison in particular, were the next most important reasons for nonlocal recreation trips in the Jackson Hole area. A 2008 study identified similar visitation trends (77% of visitor activities included “viewing scenery / scenic drives” and 42% participated in “wildlife viewing.” A 2010 visitor survey at Colter Bay had similar findings, with observing nature and wildlife as the two highest-ranked recreational opportunities (Williams, Darville, and Legg 2010).

COLTER BAY

The views across Jackson Lake to the Teton Range were a primary consideration for the development of Colter Bay. To take advantage of the views, the main circulation design was aligned with the view corridor at Colter Bay (figure 1). Today, Colter Bay continues to provide outstanding views of Jackson Lake and the Teton Range. A few of the key viewpoints are discussed below.

Main Entry Road

The entry/exit arm of the T-shaped parking system is oriented to provide stunning views of the Teton Range (figure 2). While the background (Teton Range) and mid-ground (Jackson Lake) of this view are intact there are distractions in the foreground, including vehicular congestion in front of the grocery store, mature lodgepole pines planted in the median, and the expanses of pavement

comprising the road and pedestrian circulation systems.

Main Access to the Lakefront

This viewpoint is perched approximately 25 feet above the shoreline of Colter Bay. The viewpoint has the potential to take advantage of the views of Jackson Lake and the Teton Range. The viewpoint also serves as the primary trail to the waterfront. The background (Teton Range) and mid-ground (Jackson Lake) are visible from this viewpoint

(figure 3). However, the foreground of immediate view is dominated by a large asphalt clearing.

Colter Bay Visitor Center

The visitor center was sited to take advantage of the views of Jackson Lake in the foreground with the Tetons in the background. The deck at the rear of the visitor center overlooks the lake. Vista clearing of pines is essential to maintaining the view.



FIGURE 1. COLTER BAY CA. 1960



FIGURE 2. ARRIVAL AT COLTER BAY PROJECT AREA



FIGURE 3. MAIN ACCESS TO THE LAKEFRONT; CLOSE-UP VIEW

VISITOR USE AND EXPERIENCE

VISITATION TRENDS

From 2000 to 2010, recreational visits to Grand Teton National Park ranged from 2.3 to 2.6 million people per year. Approximately 77% of recreational visits to the park occur between June 1 and September 30, with July and August as peak months for visitation (figure 4). Total visitation to the park, including nonrecreational visits, is approximately 4 million persons annually. Overall, park visitation has increased slightly for 7 of the past 10 years and is expected to continue to remain relatively steady or increase slightly. In July 2010, approximately 5,500 visitors per day stayed overnight in the park.

Colter Bay receives approximately 400,000 visitors per year. The majority of visitors to the North District of the park either visit or stay at Colter Bay. It is the first major developed area in Grand Teton National Park to serve visitors coming south from Yellowstone National Park. There are five visitor centers / contact stations in Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway: (1) Laurance S. Rockefeller Preserve Center, (2) Craig Thomas Discovery and Visitor Center, (3) Jenny Lake Visitor Center, (4) Colter Bay Visitor Center and Indian Arts Museum, and (5) the Flagg Ranch Information Station. Colter Bay is open to visitors from early May to early October.

VISITOR PROFILES

A 2010 Steven F. Austin State University survey of visitors at Colter Bay found that the majority (70%) of visitors to the area traveled as a family group with a mean of 2.6 children per group. The mean group size for all groups surveyed was 3.4 members. Visitors to Colter Bay stay an average of 4.2 days, slightly higher than the park average. The 2010 visitor survey at Colter Bay also found adult visitors to have a high level of education with 80% having completed a bachelor or graduate degree.

According to a 2008 National Park Service visitor survey, most park visitors are in the age group 41 years or older, and the next most numerous age groups is 15 years or younger. The majority of visitors are college educated or higher (31% have a bachelor's degree and 36% have a graduate degree); 7% of visitor groups included members with disabilities. Approximately 90% of park visitors are from the United States. The percentage of domestic travelers was slightly higher for Colter Bay respondents compared with the entire park. Visitors tend to travel from all 50 states, with the highest number of respondents in 2008 coming from California, Utah, and Wyoming. International visitors were most commonly from Canada, the United Kingdom, the Netherlands, and Germany.

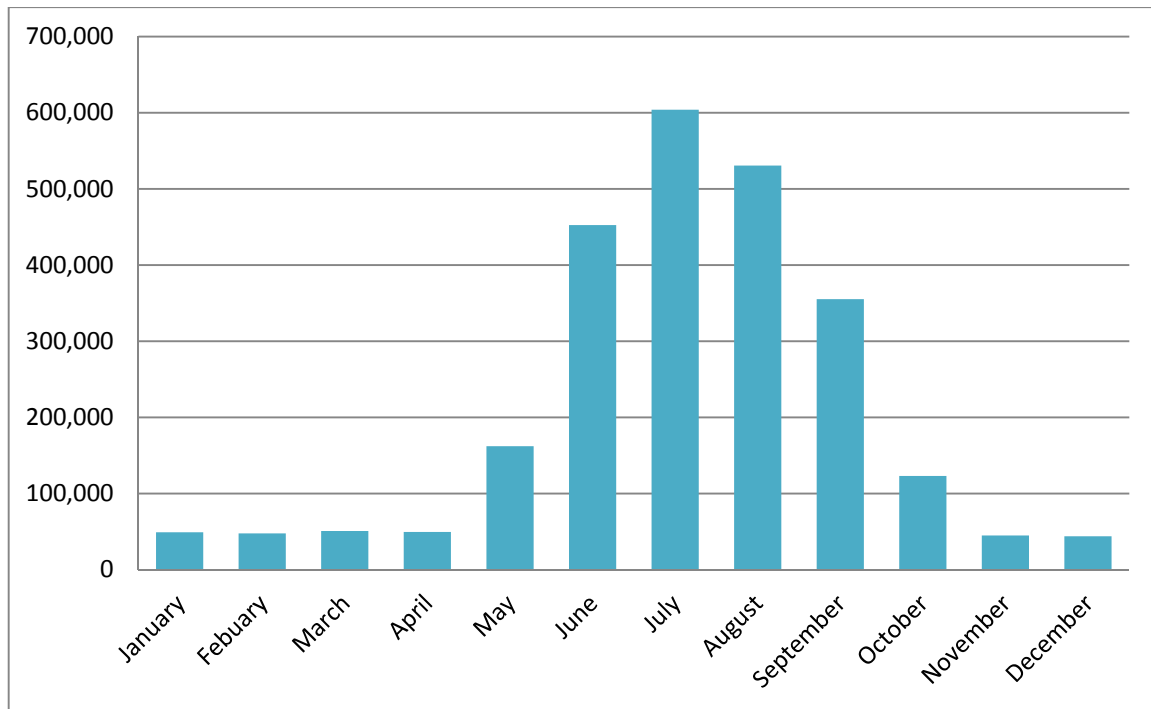


FIGURE 4. AVERAGE MONTHLY RECREATIONAL VISITS TO GRAND TETON NATIONAL PARK (2000–2010)

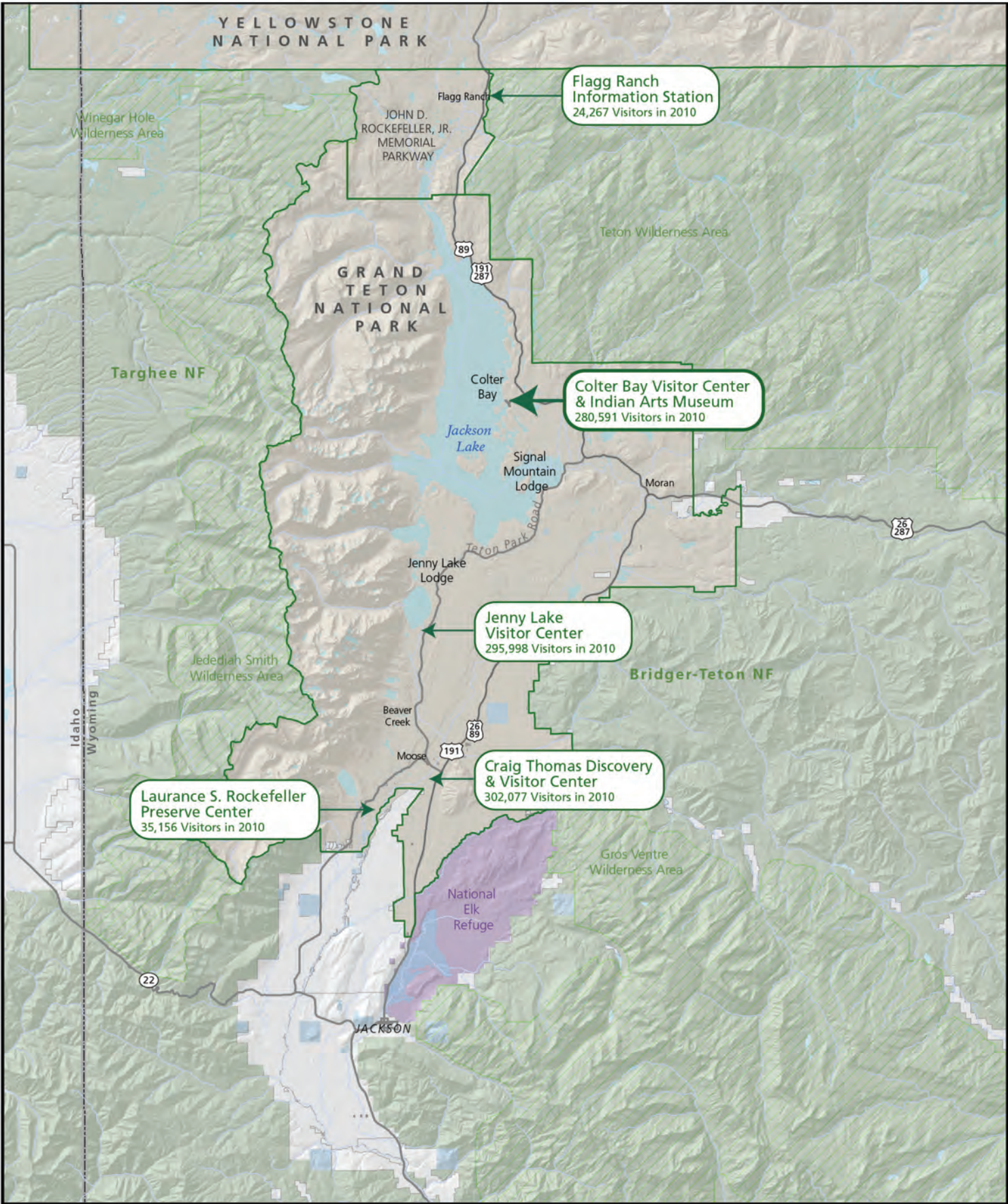
VISITOR TRAVEL AND ARRIVAL

Park visitors generally travel by private or rented automobile—77% of survey respondents at Colter Bay traveled by car, followed by mini-van, and RV. A small percentage of Colter Bay visitors arrive by bicycle and foot. Approximately five tour buses stop at the Colter Bay visitor center per day during the visitor season (figure 5).

The arrival experience at Colter Bay can be confusing and disorienting for many visitors. Upon entering the project area visitors encounter the bustling and often congested grocery store area. Many visitors assume this is the visitor center. Visitors who stop at the grocery store area often get back into their cars to drive another 100 yards to the visitor center. In addition to the confusing wayfinding and visual cues, this behavior could also be attributed to the overabundant

parking (that is, visitors are not concerned about finding another spot). It is fairly common for visitors, especially first-time visitors, to travel by vehicle to the various destinations within the project area or to circle the area by vehicle.

Visitors traveling in passenger vehicles are likely to find a parking space in a timely manner near their destination. However, during peak periods, the travel distance between parked vehicles and visitor destinations increases, as does “competition” for parking spaces. Three parking occupancy surveys conducted in the summer of 2010 and 2011 concluded that the number of passenger vehicle parking spaces adjacent to the general store, restaurant, visitor center, and marina substantially exceeds demand, even during peak use periods (see appendix C).



VISITOR CENTERS & CONTACT STATIONS

Colter Bay Visitor Services Plan
Grand Teton National Park, Wyoming

November 1, 2011



VISITOR ACTIVITIES

A variety of activities are available to Grand Teton National Park visitors. These activities range from casual walking, wildlife viewing, sightseeing, riding the Jenny Lake boat shuttle, and shopping, to more active endeavors such as hiking, backpacking, bicycling, camping, river floating, private boating, canoeing, kayaking, rock climbing, fishing, photography, bird watching, and horseback riding. A wide variety of activities are also available at Colter Bay. The Colter Bay project area provides opportunities for dining, walking, and shopping. The greater Colter Bay area offers boating, kayaking, fishing, photography, swimming, hiking, bicycling, and horseback riding.

The visitor-serving facilities in the larger Colter Bay area include: a visitor center, permit office, indoor theater, outdoor amphitheater, 166 cabins, 66 tent cabins, 112 RV sites with hookups, a 350-site campground, two restaurants, marina with boat rental, general store, laundry/shower facility, picnic area and swim beach, gas station, and two trailheads. The 2010 visitor survey found the general store to be the most popular service or facility followed by showers and then the visitor center. While the general store and showers may be more popular, the majority of visitors to Colter Bay still go to the visitor center (83%). The most frequented services and facilities offered at the visitor center include the restrooms, followed by the information counter, and then the bookstore.

The 2010 visitor survey asked visitors to Colter Bay to rank 19 recreational activities by importance. Table 5 presents the results in descending order of importance (1=most important, 19=least important). The survey found observing wildlife and nature to be the most important activities for visitors to Colter

Bay. The visitor center and the museum were ranked eighth and tenth, respectively.

OPPORTUNITIES FOR ORIENTATION, EDUCATION, AND INTERPRETATION

The Colter Bay Visitor Center provides visitors with opportunities for orientation, education, and interpretation. It has an auditorium for interpretive programs (during inclement weather), slide presentations, and interpretive videos. Backcountry and boating permits are also available at the permit office in the visitor center. Park and Grand Teton Association employees staff an information desk used to help orient visitors and respond to questions. The Grand Teton Association also sells educational and interpretive materials at the visitor center bookstore. Visiting artists display American Indian crafts, and occasionally present special demonstrations within the Indian Arts Museum.

In the past, the Indian Arts Museum displayed approximately 50% of the Vernon Collection. In recent years, this collection was sent to the NPS Western Archeological and Conservation Center in Tucson, Arizona, for conservation treatment and temporary storage. A few of the items that have undergone conservation treatment will be on display in 2012, with expanded interpretation of related topic matter. Additional exhibits focusing on climate change, stewardship, geology, and area orientation will be on display in the visitor center in 2012.

The National Park Service provides an expansive array of programs and activities at Colter Bay. These programs and activities include nightly ranger talks and campfire circles held at the amphitheater, interpretive hikes, and other activities.

TABLE 5. IMPORTANCE OF RECREATIONAL ACTIVITIES AT COLTER BAY (2010 VISITOR SURVEY)

Rank (1=most important)	Recreational Activities
1	Observing Wildlife
2	Observing Nature
3	Walking
4	Photography
5	Hiking, Day Only
6	Camping
7	Picnicking
8	Visitor Center
9	Ranger Program
10	Museum
11	Cabins
12	Nonmotorized Boating
13	Fishing
14	Swimming
15	Hiking in Backcountry
16	Bicycling
17	Horseback Riding
18	Motorized Boating
19	Jogging

PARK OPERATIONS

Two districts, the North District and the South District, make up Grand Teton National Park. The two districts comprise 310,044 acres within park boundaries. Colter Bay is in the North District, approximately 18 miles south of Yellowstone National Park.

Park headquarters is in the South District in Moose, Wyoming. Management of the park is under the office of the superintendent, which oversees the deputy superintendent, and, indirectly, the five primary divisions of the park: facility management, ranger activities, interpretation, science and resource management, and business resources and administration.

MANAGEMENT DIVISIONS

Facility Management Division

The Facility Management Division is the largest operational unit in the park. The division is responsible for planning, design, construction, operation, and maintenance of all roads, trails, buildings, and utility systems in the park. The Facility Management Division operates support facilities consisting of several buildings for administrative functions, offices, and equipment and shop space (plumbing and electrical, buildings and utilities, and buildings and quarters) in the NPS operations area near the intersection of Highway 26/89/191 and Colter Bay road. At Colter Bay, the division maintains the water and sewer systems, buildings, and roads (including snow removal), and also collects garbage.

Ranger Activities Division

The second-largest operational unit in the park is the Ranger Activities Division. Rangers are responsible for providing visitor services and resource protection, including

the management of programs such as law enforcement, wildland and structural fire, search and rescue, fee collection, emergency medical services, and a joint fire/law enforcement/dispatch center with the U.S. Forest Service. The division maintains a 24-hour per day operation during the busy summer season; however, hours of operation are reduced at other times of the year when the park is less busy. The North District Ranger Station is in the NPS operations area near the intersection of Highway 26/89/191 and Colter Bay road.

Interpretation Division

The Interpretation Division is organized into four interpretive districts: Colter Bay, Jenny Lake, Moose, and Laurence S. Rockefeller. This division responsible for operating park visitor centers and providing a wide variety of informational and educational programs to park visitors. These programs include guided walks, campfire programs, roving interpretation, and other services, as well as issuing permits for backcountry camping and boating. The division also manages the planning and design of media-based interpretation such as brochures, site bulletins, wayside exhibits, and other materials. The Colter Bay Interpretation Division offices are in the Colter Bay Visitor Center.

Science and Resource Management Division

The Science and Resource Management Division performs a wide variety of duties associated with stewardship of the park's natural and cultural resources. This includes research, wildlife and vegetation management activities, noxious weeds control, and programmatic duties related to ensuring

compliance with applicable laws, policies, and regulations.

The Business Resources and Administration Division

The Business Resources and Administration Division is responsible for contracting, procurement, and property; human resources; financial services; information technology; management of park concession contracts; commercial use authorizations; and special use permits.

BUDGET AND STAFFING

Grand Teton National Park's operational budget for fiscal year 2010 was approximately \$13.7 million, including funds for staff salaries, supplies and materials, and other operational needs. This amount does not include other funds, such as those for construction or special projects, which are allocated on a year-by-year, project-by-project basis. The park has approximately 150 permanent employees and 200 seasonal employees. Seasonal employees primarily work during the summer season.

NPS FACILITIES IN PROJECT AREA

Colter Bay Visitor Center

Perched just above Colter Bay, the 12,325 sq ft Colter Bay Visitor Center and Indian Arts

Museum (figure 6) is open to the public from early May to early October (8:00 a.m.–7:00 p.m.). As mentioned in the “Museum Collections” section in this chapter, the Vernon Collection of Indian art was recently moved from the Indian Arts Museum portion of the visitor center to a conservation facility in Tucson, Arizona. In the winter, the visitor center restrooms are open, but the rest of the building is closed to the public. Due to the climate control needs of the water systems, museum collections, and the computer network server, the Colter Bay Visitor Center is heated (or cooled) year-round. The visitor-serving functions include the interpretation lobby with an NPS information desk, an indoor theater used for an orientation video, small permit office, book sales area, museum and artist space, and public restrooms. The permit office issues boat, backcountry, and Yellowstone permits.

The visitor center houses operational functions, including interpretive staff offices (5 seasonal full-time equivalents (FTEs)/1 year-round FTE), storage, and the computer network server. The upper floor of the administrative area includes a library, copy room/break room, and offices. The lower floor of the administrative area is used for storage (interpretive props, publications, and boat gear), the computer network server, and HVAC system. Approximate square footages of the functions within the visitor center building as of 2012 are listed in table 6 below.



FIGURE 6. COLTER BAY VISITOR CENTER

TABLE 6. COLTER BAY VISITOR CENTER ROOMS/SIZE

Function	Area in Colter Bay Visitor Center
Indoor theater	1,440 sq ft
Permit office	130 sq ft
Book sales area	1,120 sq ft
Museum and artist space	840 sq ft
Vernon Collection space (two exhibit cases)	250 sq ft
Public restrooms	525 sq ft
Lobby & NPS information desk	1,380 sq ft
Offices, library, break room, and employee restrooms	1,795 sq ft
Storage	330 sq ft

The visitor center is nearing the end of its functional life. Visitor facilities are outdated, inefficient, and do not meet current life safety, accessibility, or museum standards. The facilities also do not meet operational

needs. Below is a list of the deficiencies associated with the visitor center.

- Operations: The restrooms at the visitor center are heavily used and a waiting line often forms. Staff report

that the toilets sometimes back up. The information desk and book sales areas are crowded and the ability of the NPS staff to meet visitor needs is challenged.

- **Heating, Ventilation, and Air-Conditioning Systems:** The visitor center’s HVAC system is inefficient and does not meet code requirements. Replacing the HVAC system is infeasible from a long-term cost, efficiency, and sustainability standpoint.
- **Electrical, Fire, and Security Systems:** The electrical system does not comply with building code. The visitor center fire detection system is often inoperable and the building does not have a fire suppression system. The security system is substandard.
- **Computer Network Server:** The computer network server for the North District of the park is housed in the basement of the visitor center. The room is too small, hard to access, and does not meet industry standards.
- **Seismic Design:** The visitor center does not meet current codes, and it is in a seismic zone in which earthquake events of magnitude 7.0–7.5 are expected.
- **Access for People with Disabilities:** Access to the visitor center for people with disabilities is available on the main level; access to the lower level does not meet accessibility standards.
- **Museum Standards:** The visitor center does not meet NPS museum standards for storage and treatment of museum objects.

Amphitheater

The amphitheater is approximately 400 feet northwest of the Colter Bay Visitor Center and is connected to the facility and parking

areas by paved footpaths. The amphitheater seats up to 400 people. The interpretive staff typically provide three programs a day at the amphitheater (campfire circle, ranger talk, and a midafternoon program). The amphitheater is in good condition.

Main Access to Waterfront

This area is approximately 350 feet southeast of the visitor center, near the intersection of the three arms of the road/parking system. This paved area is intended to serve as the main access point to the waterfront and provides glimpses of Jackson Lake and views of the Teton Range (figure 7). However, visitors have a difficult time finding this access point. The asphalt in this area is in poor condition (see “Alternative A (no action)” map).

Vehicular Circulation/Roads/Parking

The vehicular circulation and parking system in the vicinity of the visitor center is T-shaped, with each “arm” consisting of two uni-directional lanes of roadway and parking separated by a 30-foot-wide median containing mature lodgepole pines. The entry (northeastern) arm of “T” passes by the grocery/gift shop and laundry/shower facilities. The entry road was aligned to take advantage of views of the Teton Range and Colter Bay. The entry road ends at a large three-way intersection approximately 25 feet in elevation above the lakeshore trail. The northwestern arm of the T provides access to the Colter Bay Visitor Center and amphitheater (with a road connection to the picnic area and swim beach, which are outside the project area). The southwestern arm of the T provides access to the lakefront trail, marina, Hermitage Point trailhead, marina, marina store, with the “return” portion providing convenient access to the restaurant/grill.

Parking is almost entirely double-loaded (parking spaces are provided on both sides of the travel lane). The nose-in parking is at an

angle to traffic, and departing vehicles must back out into traffic. Congestion is common in the area near the grocery store and gift shop. Each one-way lane plus adjacent double-loaded nose-in parking measures approximately 60 feet wide. Parking for RVs, buses, and boat trailers is predominately parallel, although there are some angled spaces on the single-loaded return lane of the marina arm. The roads and adjacent parking vary in condition from serious to fair. Appendix C is a 2011 Federal Highway Administration report that provides additional information regarding parking and circulation within the Colter Bay project area.

Pedestrian and Bicycle Circulation

Paved paths, trails, and user-developed social trails connect the facilities and visitor opportunities at Colter Bay. Travel by foot and bicycle is encouraged, but not always practical given the dispersed layout of the area. The lack of visual connections and directional signs between destinations may also discourage travel by foot. Overnight visitors who have become familiar with the layout are much more likely to go from place to place on foot or by bicycle.

Access for people with disabilities is provided to some destinations. Since the Colter Bay area was developed before the passage of the American Barriers Act and the Americans with Disabilities Act, the buildings were not originally designed for access by people with disabilities. However, retrofits and upgrades to allow universal access have been made to many of the buildings. Some improvements to the walkways have also been made, but many lack curb cuts for wheelchair access.

Pedestrian travel along the entry and frontage roads is on attached asphalt primary walkways (sidewalks). These paved paths measure 15 to 50 feet wide. In most areas the primary walkways seem oversized (figure 8). The primary footpaths on the eastern side of the exit lane and the northern side of the visitor center arm are not frequently used. Although the primary footpaths are also used by bikes, user conflicts are likely rare because the paths are so wide and travel speeds are low. The main portion of the lakefront path near the marina is approximately 15 feet wide and 800 feet long.

There is a network of informal paved and unpaved paths or trails that connect facilities and visitor opportunities in the Colter Bay area. Overall, the paths and trails are in relatively poor condition. There are also user-created social trails in the Colter Bay area. Pedestrians cut through the medians that separate the one-way travel lanes.

The pedestrian and bicycle circulation infrastructure is in poor to fair condition. The National Park Service has assessed the condition of the pedestrian and bicycle infrastructure as follows.

- The trails in the area are in poor condition.
- The condition of the primary walkways is fair to poor. Maintenance of the walkways has been deferred and most of the walkways are uneven, poorly defined, and cracked.
- The walkway adjacent to the northern lane of the visitor center arm is wider than needed given that it gets little use. Weeds and trees are growing through the asphalt.



FIGURE 7. MAIN ACCESS TO THE WATERFRONT



FIGURE 8. LARGE PAVED AREA SOUTHEAST OF VISITOR CENTER

- Similarly, the walkway adjacent to the exit lane (visitor center arm) is wider than needed and shows evidence of disuse.
- The curbing along the entry road is inconsistent.
- Some medians show signs of heavy pedestrian use.

CONCESSION-OPERATED FACILITIES IN PROJECT AREA

[Note to reader: the following information is provided for context only; this plan does not propose changes to concession facilities (aside from changes to associated parking, roads, and pathways, etc.).]

Colter Bay Marina

Colter Bay has the largest and most protected marina in the park (figure 9). When the area was developed the bay was dredged and today it is a shallow bay. The water levels have varied over time and park staff report that there have been years when marina concessions did not operate because of the low water level. The marina has approximately 100 boat slips. The marina concessioner offers kayak, canoe, and 9.9 horsepower motorboat rentals; lake cruises; and guided fishing trips. There is also a marina store and restrooms. The marina is approximately 600 feet from the visitor center.

Grocery Store, Gift Shop, Laundry/ Shower Facility, Post Office, Picnic Tables, and Restrooms Area

This area is very popular and is where many visitors first get out of their car after arriving at Colter Bay. The grocery store (figure 10), gift shop, and laundry/shower facility are concessioner operated. The grocery store and gift shop share a large building and the restrooms and two picnic tables are in an area on the north side of the building.

Restaurant and Grill

At the eastern corner of the T-intersection are the John Colter Café Court (“grill”) and the Ranch House restaurant. The two eateries share a building and provide a range of food options at different price points. There is an employee dining area in the building.

Lodging

The following lodging options are available at Colter Bay.

- Cabins – The Grand Teton Lodge Company operates 166 cabins. The log cabins were relocated to Colter Bay from other areas in the park and refurbished. The cabins range in size, amenities (private bath or shared bath), and rental fee. The cabins are approximately 700 feet northeast of the visitor center.



FIGURE 9. COLTER BAY MARINA



FIGURE 10. COLTER BAY GENERAL STORE

- Tent Cabins – The Grand Teton Lodge Company operates 66 temporary summer cabins that have two log walls with the remaining two walls and roof made of canvas. The tent cabins have shared centralized restrooms. The tent cabins are approximately 0.5 mile northeast of the visitor center.
- Campground – The Grand Teton Lodge Company operates 350 individual campsites and 11 large group sites. The campground is mostly mixed RV and tents. Generators are not permitted in loop I. Smaller RVs and tents are allowed in loops A–G. The campground is approximately 1,500 feet north of the visitor center.
- RV Park – The Grand Teton Lodge Company operates 112 sites with pull-through access. The sites have standard hookups for water, sewer, and electricity. The RV park is approximately 250 feet north of the visitor center.

OTHER RELATED FACILITIES NEAR THE PROJECT AREA

Swim Beach and Picnic Area

A popular gravel swim beach is approximately 0.5 mile northwest of the visitor center. The protected swim area is closed to motorized watercraft. Adjacent to the beach area is a picnic area with restrooms.

NPS Operations Area, Concession and NPS Employee Housing Areas, and Public Fuel Station / Convenience Store

Near Highway 26/89/191 is the NPS maintenance and visitor protection area (law enforcement, emergency medical services, and fire). Law enforcement rangers work out of a triple-wide modular prefabricated structure that includes a meeting room and several offices. Adjacent to this area is the maintenance area (shops, parking, etc.). Nearby is the NPS employee housing area and the concession employee housing area. There is also a fuel station with small convenience store at the intersection of Highway 26/89/191 and Colter Bay road.



A picnic break at Colter Bay

ENVIRONMENTAL CONSEQUENCES



INTRODUCTION

The National Environmental Policy Act requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided. In this case, the proposed federal action would be the adoption of the plan that would guide decision making for certain NPS visitor facilities in the Colter Bay developed area of Grand Teton National Park. This chapter analyzes the environmental impacts of implementing the four alternatives on cultural resources, natural resources, scenic resources, visitor experience, and park operations. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

Impact analysis discussions are organized by impact topic and then by alternative under each impact topic. Existing conditions for the

impact topics are presented in the “Affected Environment” chapter. The analysis of the no-action alternative (continuation of current management) provides the baseline against which three action alternatives are assessed.

Cumulative impacts are assessed for each alternative. The discussion of cumulative impacts is followed by a conclusion statement. An impact summary table is provided at the end of chapter 2.

This plan is conceptual in nature. Specific details would be determined in the subsequent design phase. Thus, all quantitative impacts included in this chapter are estimates. As noted previously, this chapter does not analyze impacts of a future new collections/exhibit facility at an alternate park location (mentioned in alternatives B and C).

METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

The impact analysis and conclusions in this chapter are based primarily on information provided by experts in the National Park Service, review of existing literature and studies, and staff insights and professional judgment. Impacts have been assessed assuming that mitigative measures would be implemented to minimize or avoid impacts. If mitigative measures described in the “Alternatives” section, were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

For the purposes of analyzing impacts, the following assumptions were made:

- Construction takes approximately two years to complete. The construction season would run from June through October. No construction occurs during the winter.
- Commercial services at the Colter Bay developed area do not change during the project.
- Visitor facilities remain open during the summer season (early May through early October) and limited winter visitor services (parking and restrooms) are not expanded. Winter plowing continues.
- Although it is uncertain whether stormwater runoff from the parking areas enters Jackson Lake as noted in the “Affected Environment” chapter, for purposes of analysis it is assumed that the outflow does enter the lake.

The environmental consequences for each impact topic were identified and characterized based on impact type, intensity, context, and duration. These terms are

generally defined as follows, while more specific methods and assumptions, including specific impact thresholds, are provided for each resource at the beginning of each resource section.

Type describes the classification of the impact as either beneficial or adverse, direct or indirect:

- **Beneficial:** A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse:** A change that moves the resource away from a desired condition or detracts from its appearance or condition.
- **Direct:** An effect that is caused by an action and occurs in the same time and place.
- **Indirect:** An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable. This document discloses and analyzes both direct and indirect effects but does not differentiate between them in the discussions in order to simplify the narrative.

Impact intensity refers to the degree or magnitude to which a resource would be beneficially or adversely affected. Each impact was identified as negligible, minor, moderate, or major, in conformance with the definitions for these classifications provided for each impact topic.

Context refers to the setting within which an impact may occur, such as the affected region or locality. In this document most impacts are

localized (site-specific). Cumulative impacts are either parkwide or regional.

Impact duration refers to how long an impact would last. Impacts can either be short term and temporary in nature, generally occurring during the construction period, or long term, lasting several years beyond the construction period or perhaps permanently. Although an impact might only occur for a

short duration at one time, if it occurs regularly over a longer period of time the impact may be considered to be long term. For example, the noise from a vehicle driving in a parking area would be heard for a short time and intermittently, but because vehicles would be driving in the parking area for many years, the impact on the natural soundscape would be considered long term.

CUMULATIVE IMPACT ANALYSIS SCENARIO

A cumulative impact is described in CEQ regulation 1508.7 as follows:

“Cumulative impacts are the impacts that result from incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.”

Each cumulative impact analysis is additive, considering the overall impact of the alternative when combined with effects of other actions—both inside and outside the park—that have occurred or that would likely occur in the foreseeable future.

To determine potential cumulative impacts, past, present, and future potential actions and developments within and surrounding the Colter Bay developed area were considered by the planning team. The area of consideration included the remainder of Grand Teton National Park and surrounding lands.

In this case, most of the cumulative impacts that can be analyzed are due to actions that have occurred in the past. This developed area is in the interior of Grand Teton National Park and thus is relatively isolated from other land uses. With a few exceptions, no new actions or developments are foreseen within or adjacent to the Colter Bay developed area that would affect park resources and uses. As discussed in the Affected Environment chapter, most items in the Vernon Collection of American Indian

Art were moved (in two separate shipments, one occurring in 2005 and one occurring in 2011) from the Colter Bay visitor center to the NPS Western Archeological and Conservation Center in Tucson, Arizona. A new water main pipeline was installed in the Colter Bay campground in the summer of 2011. Other actions completed in 2011 included decommissioning of the nonhistoric Colter Bay service station (including the removal of underground fuel tanks), replacement of the nonhistoric Colter Bay maintenance facility, and thinning trees and removing tree limbs in the NPS employee housing area to reduce fire danger.

One continuing action is work on the Colter Bay campground, including the replacement of water and sewer distribution lines. Future actions would include the conversion of 8 to 10 campsites into fully accessible sites (meeting ABA requirements) and replacement of the Colter Bay water main with a new line extending from the water supply reservoir east of Highway 89 to the NPS operations area intersection with the entry road. Another future action would entail the selective removal of about 60 trees between the historic Colter Bay Visitor Center and Jackson Lake to restore the lake and mountain views.

Federal and other management agency efforts to reduce populations of elk parkwide and in Teton County would continue, including managing elk adjacent to the Colter Bay area.

Existing developments in the immediate vicinity of Colter Bay, including Jackson Lake Lodge, Leek’s Marina, the NPS-University of Wyoming Research Center, and the park road system would all continue to be maintained and/or improved.

No other new developments, including marinas, tourism developments, and roads, or other changes in land ownership and management of adjacent lands, are expected to occur that would directly or indirectly affect the Colter Bay developed area. No new uses of the developed area or changes in transportation are considered likely, independent of what is proposed in the

alternatives. The Grand Teton National Park Transportation Plan requires eventual construction of a multiuse pathway along North Park Road to Colter Bay. However, the plan does not discuss the pathway extending into the Colter Bay area itself. It would be reasonable to expect some increase in the amount of bicycle use at Colter Bay.

IMPACTS TO CULTURAL RESOURCES

In this environmental assessment, 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. The impact analysis is intended to comply with the requirements of the National Environmental Policy Act.

An assessment of effects under section 106 of the National Historic Preservation Act will be addressed separately from this environmental assessment. However, a section 106 determination for the actions proposed in this environmental assessment and the actions to be taken to comply with section 106 are discussed in chapter five.

In this environmental assessment, cultural resources that are eligible for listing in the National Register of Historic Places *are referred to as historic* and the impacts to them are analyzed just like they are for cultural resources that are listed in the national register per section 110 of the National Historic Preservation Act.

HISTORIC STRUCTURES

For historic structures the following impact intensity definitions were used:

Negligible:

- *Adverse Impact* – Impact(s) is at the lowest levels of detection; barely measurable with no perceptible consequences.
- *Beneficial Impact* – Impact(s) is at the lowest levels of detection; barely perceptible and not measurable.

Minor:

- *Adverse Impact* – Impacts would affect character-defining features of historic structures but would not diminish the overall integrity of the historic district.
- *Beneficial Impact* – Stabilization/preservation of character-defining features is accomplished in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Moderate:

- *Adverse Impact* – Impacts would alter a character-defining feature(s) of historic structures but would not diminish the overall integrity of the historic district.
- *Beneficial Impact* – Rehabilitation is accomplished in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Major:

- *Adverse Impact* – Impacts would alter a character-defining feature(s), diminishing the overall integrity of the historic district to the extent that it would no longer be eligible to be listed on the National Register of Historic Places.
- *Beneficial Impact* – Restoration is accomplished in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Alternative A (no-action alternative)

Analysis. Actions proposed under the no-action alternative would result in some repairs to the Colter Bay Visitor Center. All repairs would be performed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Thus, this alternative would have minor, long-term, site-specific, beneficial impacts to historic structures.

Any materials removed during repair efforts would be evaluated to determine their value to the park's museum collection.

Cumulative Impacts. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have moderate, permanent, adverse impacts to historic structures. When the effects of future actions are added to the minor, long-term, beneficial impacts of alternative A, there would be moderate, permanent, adverse cumulative impacts to historic structures. The beneficial impacts of alternative A would not lessen the overall adverse, moderate impacts of the cumulative actions.

Conclusion. Alternative A would have minor, long-term, site-specific, beneficial impacts on historic structures primarily from the repairs to the Colter Bay Visitor Center that would continue to occur. There would be potential for moderate, permanent, adverse cumulative impacts when the effects of alternative A are added to the effects of other NPS actions in the Colter Bay area. The beneficial impacts of alternative A would not lessen the overall moderate, adverse impacts of the cumulative actions.

Alternative B (NPS preferred alternative)

Analysis. Alternative B proposes demolishing the existing Colter Bay Visitor Center and constructing a new visitor contact station nearby. The visitor center is a

contributing historic structure in the Colter Bay Village Developed Area Historic District. Implementation of alternative B would have a moderate, permanent, site-specific, adverse impact to historic structures due to the removal of the existing Colter Bay Visitor Center. However, removal of the historic structure would not compromise the overall integrity of the historic district or its eligibility for listing in the national register. For a historic district to retain integrity as a whole, the majority of the components that make up the district's historic character must possess integrity (e.g., its historic identity). In addition, the relationships among the district's components must be substantially unchanged since the period of significance. The Colter Bay Village Developed Area Historic District is made up of 188 contributing buildings organized into 12 clusters covering approximately 600 acres of land. The historic character and the relationship of the historic district's components would remain intact with the removal of one of the 188 contributing buildings (*National Register Bulletin 15*).

Cumulative Impacts. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have moderate, permanent, adverse impacts to historic structures. When the effects of future actions are added to the moderate, permanent, adverse impacts of alternative B, there would be moderate, permanent, adverse cumulative impacts to historic structures. Alternative B would add a large adverse increment to the overall adverse cumulative impact.

Conclusion. Alternative B would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay Village Developed Area Historic District due to the removal of the Colter Bay Visitor Center. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative B are added to the effects of other NPS actions in the Colter Bay area. Alternative B would add

a large adverse increment to the overall adverse cumulative impact.

Alternative C

Analysis. Alternative C proposes demolishing the existing Colter Bay Visitor Center and constructing a new, smaller visitor center nearby. The visitor center is a contributing historic structure in the Colter Bay Village Developed Area Historic District. Implementation of alternative C would have a moderate, permanent, site-specific, adverse impact to historic structures due to the removal of the existing Colter Bay Visitor Center. However, as discussed for alternative B, the removal of the historic structure would not compromise the overall integrity of the historic district or its eligibility for listing in the national register.

Cumulative Impacts. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have moderate, permanent, adverse impacts to historic structures. When the effects of future actions are added to the moderate, permanent, adverse impacts of alternative C, there would be moderate, permanent, adverse cumulative impacts to historic structures. Alternative C would add a large adverse increment to the overall adverse cumulative impact.

Conclusion. Alternative C would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay Village Developed Area Historic District due to the removal of the Colter Bay Visitor Center. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative C are added to the effects of other NPS actions in the Colter Bay area. Alternative C would add a large adverse increment to the overall adverse cumulative impact.

Alternative D

Analysis. Alternative D proposes demolishing the existing Colter Bay Visitor Center and replacing it with a new, larger visitor center in the same location. The visitor center is a contributing historic structure in the Colter Bay Village Developed Area Historic District. Implementation of alternative D would have a moderate, permanent, site-specific, adverse impact to historic structures due to the removal of the existing Colter Bay Visitor Center. However, as discussed for alternative B, the removal of the historic structure would not compromise the overall integrity of the historic district or its eligibility for listing in the national register.

Cumulative Impacts. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have moderate, permanent, adverse impacts to historic structures. When the effects of future actions are added to the moderate, permanent, adverse impacts of alternative D, there would be moderate, permanent, adverse cumulative impacts to historic structures. Alternative D would add a large adverse increment to the overall adverse cumulative impact.

Conclusion. Alternative D would have a moderate, permanent, site-specific, adverse impact to historic structures in the Colter Bay Village Developed Area Historic District due to the removal of the Colter Bay Visitor Center. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative D are added to the effects of other NPS actions in the Colter Bay area. Alternative D would add a large adverse increment to the overall adverse cumulative impact.

CULTURAL LANDSCAPES

For cultural landscapes the following impact intensity definitions were used:

Negligible:

- *Adverse Impact* – Impact(s) is at the lowest levels of detection; barely measurable with no perceptible consequences.
- *Beneficial Impact* – Impact(s) is at the lowest levels of detection; barely perceptible and not measurable.

eligible to be listed on the National Register of Historic Places.

- *Beneficial Impact* – Restoration of a landscape or its patterns and features is accomplished in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Minor:

- *Adverse Impact* – Impacts would affect the pattern(s) or feature(s) of the landscape but would not diminish the overall integrity of the historic district.
- *Beneficial Impact* – Preservation of character-defining patterns and features are accomplished in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Alternative A (no-action alternative)

Analysis. Under the no-action alternative, no changes would occur to the parking area, roads, or vehicle and pedestrian circulation in the Colter Bay developed area. In terms of cultural landscape characteristics, this means there would be no change to the spatial organization or circulation. Routine maintenance, such as resurfacing the roads and parking spaces, would continue resulting in impacts to cultural landscapes that are negligible, long-term, site-specific, and beneficial because these efforts would help preserve landscape features and patterns.

Moderate:

- *Adverse Impact* – Impacts would alter the pattern(s) or feature(s) of the landscape but would not diminish the overall integrity of the historic district.
- *Beneficial Impact* – Rehabilitation of a landscape or its patterns and features is accomplished in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Cumulative Impacts. The past action of thinning trees and removing tree limbs in the NPS employee housing area to reduce fire danger has resulted in impacts to cultural landscapes that are negligible, long-term, localized, and beneficial. The future actions of removing approximately 60 trees for the purposes of restoring the view of the lake and the Teton Range, and removing pine beetle-killed trees in the project area would result in impacts to cultural landscapes that are minor, long-term, localized, and beneficial. The future action of converting 8 to 10 historic campsites to fully accessible campsites would have minor, long-term, site-specific, adverse impacts to cultural landscapes. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have minor, permanent, adverse impacts to cultural landscapes because historic structures are elements of cultural landscapes. When the effects of past and future actions are added to the negligible,

Major:

- *Adverse Impact* – Impacts would alter the pattern(s) or feature(s) of the landscape, diminishing the overall integrity of the historic district to the extent that it would no longer be

long-term, beneficial impacts of alternative A, there would be minor, permanent, adverse cumulative impacts to the park's cultural landscapes. The beneficial impact of alternative A would not diminish the overall adverse cumulative impact.

Conclusion. Alternative A would have negligible, long-term, beneficial impacts to cultural landscapes in the Colter Bay developed area due to the continuation of routine maintenance efforts. There would be the potential for minor, permanent, adverse cumulative impacts when the effects of alternative A are added to the effects of other NPS actions in the Colter Bay area. The beneficial impacts of alternative A would not diminish the overall adverse cumulative impacts.

Alternative B (NPS preferred alternative)

Analysis. Under alternative B, substantial changes would be made to the parking area, roads, and vehicle and pedestrian circulation in front of the Colter Bay Visitor Center to make the area more pedestrian friendly and more rustic. The modifications to cultural landscape characteristics would include modifying the circulation pattern by changing the road layout, separating most parking from the main road, and altering the Mission 66-era one-way loops to create a road with two-way traffic. The removal of the Colter Bay Visitor Center and the addition of a new visitor contact station would also impact cultural landscapes since historic structures are elements of cultural landscapes. Overall, the impacts would be moderate, permanent, site-specific, and adverse because of the substantial changes to contributing cultural landscape patterns and features, such as spatial organization, circulation, and historic structures. While the impacts would alter the patterns and features of the cultural landscape, including the overall Mission 66 site plan and design of the Colter Bay developed area, it would not diminish the overall integrity of the historic

district or compromise its eligibility for listing in the national register.

Cumulative Impacts. The past action of thinning trees and removing tree limbs in the NPS employee housing area to reduce the fire danger has resulted in impacts to cultural landscapes that are negligible, long-term, localized, and beneficial. The future actions of removing approximately 60 trees to restore the view of the lake and the Teton Range, and removing pine beetle-killed trees in the project area would result in impacts to cultural landscapes that are minor, long-term, localized, and beneficial. The future action of converting 8 to 10 historic campsites to fully accessible campsites would have minor, long-term, site-specific, adverse impacts to cultural landscapes. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have minor, permanent, adverse impacts to cultural landscapes because historic structures are elements of cultural landscapes. When the effects of past and future actions are added to the moderate, permanent, adverse impacts of alternative B, there would be moderate, permanent, adverse cumulative impacts to the park's cultural landscapes. Alternative B would add a large adverse increment to the overall adverse cumulative impacts.

Conclusion. Alternative B would have moderate, permanent, site-specific, adverse impacts to cultural landscapes in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center from the cultural landscape and the substantial changes to contributing cultural landscape patterns and features. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative B are added to the effects of other NPS actions in the Colter Bay area. Alternative B would add a large adverse increment to the overall adverse cumulative impacts.

Alternative C

Analysis. Under alternative C, substantial changes would be made to the parking area, roads, and vehicle and pedestrian circulation in front of the Colter Bay Visitor Center and marina store to improve traffic flow, decrease congestion, and improve pedestrian safety. The modifications to cultural landscape characteristics would include redesigning the circulation pattern by changing the road layout, separating parking from the main road and clustering it, and altering the Mission 66-era one-way loops to create roads with two-way traffic. The removal of the Colter Bay Visitor Center and the addition of a new visitor center would also impact cultural landscapes since historic structures are elements of cultural landscapes. Overall, the impacts would be moderate, permanent, site-specific, and adverse because of the substantial changes to contributing cultural landscape patterns and features, such as spatial organization, circulation, and historic structures. However, as discussed for alternative B, the changes in cultural landscape patterns and features would not compromise the overall integrity of the historic district or its eligibility for listing in the national register.

Cumulative Impacts. The past action of thinning trees and removing tree limbs in the NPS employee housing area to reduce the fire danger has resulted in impacts to cultural landscapes that are negligible, long-term, localized, and beneficial. The future actions of removing approximately 60 trees to restore the view of the lake and the Teton Range, and removing pine beetle-killed trees in the project area would result in impacts to cultural landscapes that are minor, long term, localized, and beneficial. The future action of converting 8 to 10 historic campsites to fully accessible campsites would have minor, long-term, site-specific, adverse impacts to cultural landscapes. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have minor, permanent, adverse impacts to cultural

landscapes because historic structures are elements of cultural landscapes. When the effects of past and future actions are added to the moderate, permanent, adverse impacts of alternative C, there would be moderate, permanent, adverse cumulative impacts to the park's cultural landscapes. Alternative C would add a moderate adverse increment to the overall adverse cumulative impacts.

Conclusion. Alternative C would have moderate, permanent, site-specific, and adverse impacts to cultural landscapes in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center from the cultural landscape and the substantial changes to contributing cultural landscape patterns and features (changes would not be as substantial as those in alternative B). There would be potential for moderate, permanent, adverse cumulative impacts when the effects of alternative C are added to the effects of other NPS actions in the Colter Bay area. Alternative C would add a moderate adverse increment to the overall adverse cumulative impacts.

Alternative D

Analysis. Under alternative D, the least-used parking area in front of the Colter Bay Visitor Center (the northwest portion of the parking lot) would be removed and the area revegetated. This slight modification would have minor, permanent, site-specific, adverse impacts to cultural landscapes in the Colter Bay developed area. The removal of the Colter Bay Visitor Center and the construction of a new visitor center in the same location would have moderate, permanent, adverse impacts to cultural landscapes since historic structures are elements of cultural landscapes. Overall, the impacts to cultural landscapes would be moderate, permanent, and adverse due to the removal of the Colter Bay Visitor Center. While these actions would alter the patterns and features of the cultural landscape, the change in the parking area would not cause the cultural landscape characteristics of

spatial organization and circulation to lose their integrity and the removal of one historic structure would not compromise the integrity of the remaining historic structures in the cultural landscape. Overall the historic district would not be adversely impacted and the Mission 66 site planning and design of the Colter Bay developed area would remain intact.

Cumulative Impacts. The past action of thinning trees and removing tree limbs in the NPS employee housing area to reduce fire danger has resulted in impacts to cultural landscapes that are negligible, long-term, localized, and beneficial. The future actions of removing approximately 60 trees to restore the view of the lake and the Teton Range, and removing pine beetle-killed trees in the project area would result in impacts to cultural landscapes that are minor, long term, localized, and beneficial. The future action of converting 8 to 10 historic campsites to fully accessible campsites would have minor, long-term, site-specific, adverse impacts to cultural landscapes. The future action of removing one of the historic comfort stations in the campground and replacing it with a fully accessible comfort station would have minor, permanent, adverse impacts to cultural landscapes because historic structures are elements of cultural landscapes. When the effects of past and future actions are added to the moderate, permanent, adverse impacts of alternative D, there would be moderate, permanent, adverse cumulative impacts to the park's cultural landscapes. Alternative D would add a small adverse increment to the overall adverse cumulative impacts.

Conclusion. Alternative D would have moderate, permanent, site-specific, and adverse impacts to cultural landscapes in the Colter Bay developed area due to the removal of the Colter Bay Visitor Center from the cultural landscape. There would be the potential for moderate, permanent, adverse cumulative impacts when the effects of alternative D are added to the effects of other NPS actions in the Colter Bay area. Alternative D would add a small adverse

increment to the overall adverse cumulative impacts.

MUSEUM COLLECTIONS

For museum collections the following impact intensity definitions were used:

Negligible:

- *Adverse Impact* – Impact(s) is at the lowest levels of detection; barely measurable with no perceptible consequences.
- *Beneficial Impact* – Impact(s) is at the lowest levels of detection; barely perceptible and not measurable.

Minor:

- *Adverse Impact* – Impact(s) would affect the integrity of a few items in the museum collection, but would not degrade the usefulness of the collection for future research and interpretation.
- *Beneficial Impact* – Impacts would stabilize the current condition of the collection or its constituent components to minimize degradation.

Moderate:

- *Adverse Impact* – Impact(s) would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.
- *Beneficial Impact* – Impacts would improve the condition of the collection or its constituent parts from the threat of degradation.

Major:

- *Adverse Impact* – Impact(s) would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.
- *Beneficial Impact* – Impacts would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.

Alternative A (no-action alternative)

Analysis. Under the no-action alternative, two Vernon Collection exhibit cases would remain at the Colter Bay Visitor Center while the rest of the collection would remain at the NPS Western Archeological and Conservation Center in Tucson, Arizona, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park at an alternate location. Keeping a small portion of the collection in the Colter Bay Visitor Center would have a minor, long-term, site-specific, adverse impact to museum collections because the visitor center does not meet NPS museum standards (e.g., temperature controls, pest infestations, etc.). Keeping most of the Vernon Collection at the Western Archeological and Conservation Center would have moderate, long-term, site-specific, beneficial impacts to museum collections because the facility meets NPS standards for storing museum collections.

Cumulative Impacts. There are no past, present, or future cumulative actions within and surrounding the Colter Bay developed area that involve museum collections; therefore, there would be no cumulative impacts to museum collections.

Conclusion. Alternative A would have minor, long-term, adverse impacts as well as moderate, long-term, beneficial impacts to museum collections because a small portion of the Vernon Collection would remain in the

Colter Bay Visitor Center where it is less protected compared with the majority of the collection that would remain at the NPS Western Archeological and Conservation Center where it would be well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park at an alternate location. There would be no cumulative impacts.

Alternative B (NPS preferred alternative)

Analysis. Under alternative B, all but two exhibit cases of the Vernon Collection would remain at the NPS Western Archeological and Conservation Center in Tucson, Arizona, until a new collections/exhibit facility that meets NPS museum standards could be built in the park at an alternate location. The items in the two exhibit cases would be able to withstand climatic extremes without damage or withstand being transported into/out of the visitor contact station seasonally (items would be taken to the new collections/exhibit facility for the winter). Impacts to museum collections would be negligible, long term, site-specific, and adverse because the new visitor contact station would not fully meet NPS standards for museum collections, but the items displayed would be able to withstand the environmental conditions without losing integrity. Temporarily keeping most of the Vernon Collection at the Western Archeological and Conservation Center would have moderate, long-term, site-specific, beneficial impacts to museum collections because the facility meets NPS standards for properly storing the museum collection.

Cumulative Impacts. There are no past, present, or future cumulative actions within and surrounding the Colter Bay developed area that involve museum collections; therefore, there would be no cumulative impacts to museum collections.

Conclusion. Alternative B would have minor, long-term, adverse impacts as well as moderate, long-term, beneficial impacts to museum collections because a small portion of the Vernon collection would be exhibited at the new visitor contact station where it would be less protected compared with the majority of the collection that would remain temporarily at the NPS Western Archeological and Conservation Center where it is well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park at an alternate location. There would be no cumulative impacts.

Alternative C

Analysis. Under alternative C, a modest portion of the Vernon Collection would be displayed in the new visitor center. The items displayed would be able to withstand climatic extremes without damage or withstand being transported into/out of the visitor center seasonally (items would be taken to the new collections/exhibit facility for the winter). Impacts to museum collections would be minor, long term, site-specific, and adverse because the new visitor center would not fully meet NPS standards for museum collections, but the items displayed would be able to withstand the environmental conditions without losing integrity.

The rest of the collection would be housed at a new collections/exhibit facility at an alternate location in the park that meets NPS museum standards. Until this new facility is constructed, the Vernon Collection would temporarily remain at the NPS Western Archeological and Conservation Center in Tucson, Arizona. Temporarily keeping the Vernon Collection at the Western Archeological and Conservation Center would have moderate, long-term, site-specific, beneficial impacts to museum collections because the facility meets NPS standards for properly storing the museum collection.

Cumulative Impacts. There are no past, present, or future cumulative actions within and surrounding the Colter Bay developed area that involve museum collections; therefore, there would be no cumulative impacts to museum collections.

Conclusion. Alternative C would have minor, long-term, adverse impacts as well as moderate, long-term, beneficial impacts to museum collections because a portion of the Vernon Collection would be housed in a new Colter Bay Visitor Center that does not fully meet NPS museum standards compared to the rest of the collection remaining temporarily at the NPS Western Archeological and Conservation Center where it is well protected, until a new collections/exhibit facility that meets NPS museum standards could be constructed in the park at an alternate location. There would be no cumulative impacts.

Alternative D

Analysis. Under alternative D, the Vernon Collection would be housed in the new visitor center and a substantial portion of the collection would be displayed. Impacts to museum collections would be moderate, long-term, site-specific, and beneficial because the new visitor center would meet NPS standards for storing and displaying museum items in the collection.

Until the new visitor center is constructed, the Vernon Collection would temporarily remain at the NPS Western Archeological and Conservation Center in Tucson, Arizona. Temporarily keeping the Vernon Collection at the Western Archeological and Conservation Center would have moderate, long-term, site-specific, beneficial impacts to museum collections because the facility meets NPS standards for properly storing the museum collection.

Cumulative Impacts. There are no past, present, or future cumulative actions within and surrounding the Colter Bay developed

area that involve museum collections; therefore, there would be no cumulative impacts to museum collections.

Conclusion. Alternative D would have moderate, long-term, beneficial impacts to museum collections at the NPS Western

Archeological and Conservation Center and at the new Colter Bay Visitor Center (when completed and operational) because the collection would be protected according to NPS museum standards at each location. There would be no cumulative impacts.

IMPACTS TO NATURAL RESOURCES

The effects of the alternatives on soils, water quality, vegetation, wildlife, and special status species (i.e., grizzly bear, gray wolf, Canada lynx, and wolverine) are analyzed in this chapter. The analysis was based on knowledge of the area's resources and the best professional judgment of planners, natural resource specialists, and biologists who have experience with similar types of projects.

[Note: The following context and duration threshold definitions apply to all natural resource impact topics.]

Duration

Short-term Impacts. Effects that occur during the two-year construction period and up to one year after the project is completed—a total of three years or less from the time construction begins.

Long-term Impacts. Effects that occur more than one year after the project is completed.

Context

Localized Impacts. Effects that occur in the project area and/or in the immediate vicinity of the project area.

Regional or Parkwide Impacts. Effects that occur beyond the vicinity of the Colter Bay project area and could extend to the surrounding habitats and adjacent water bodies throughout and beyond the park.

SOILS

The following impact intensity definitions for soils were used:

- *Negligible impact:* The action would result in a change in soils, but the change would be so small that it would not be detectable based on standard scientific methods. The effects on soil productivity would be slight.
- *Minor impact:* The action would result in a detectable change, but the change would be slight. There could be changes in topsoil in a relatively small area, but the change would not noticeably change the potential for erosion. Effects on soil productivity would be slight.
- *Moderate impact:* The action would result in a clearly detectable change in soils. There could be a loss or alteration of the topsoil in a small area, or the potential for erosion to remove small quantities of additional soil would noticeably increase or decrease. The effect on soil productivity would be apparent.
- *Major impact:* The action would result in the substantial loss or alteration of soils in a relatively large area, or there would be a strong likelihood that erosion would remove large quantities of additional soil. There would be a substantial change in soil productivity.

Alternative A (no-action alternative)

Analysis. The no-action alternative would result in no new construction, excavation, or ground disturbance in the Colter Bay project area. Although the vast majority of visitors stay on paved paths in the Colter Bay developed area, some soil compaction and

erosion would probably continue to occur due to visitors walking off paved paths. Thus, there would be some long-term, negligible, adverse impacts to soils in localized areas.

Cumulative Impacts. Past recent actions have altered and removed soils in localized areas in the Colter Bay project area, including development and replacement of water and sewer pipelines and removal of underground fuel tanks. Some negligible, long-term, adverse impacts to soils would occur in the future due to ground disturbance from replacement of utility lines, the conversion of campsites into accessible campsites, and the selective removal of trees (which would alter hydrology and vegetation and in turn affect the soils). When the negligible, long-term, adverse effects of these other NPS actions are added to the negligible, adverse impacts to soils from alternative A, there would be the potential for a long-term, negligible, cumulative impact to soils in localized areas.

Conclusion. Alternative A would have a long-term, negligible, adverse effect on the soils in the Colter Bay area, primarily due to continued visitor use of the area. When the effects of alternative A are added to other NPS actions occurring in the area, there would be the potential for a long-term, negligible, adverse cumulative impact to soils.

Alternative B (NPS preferred alternative)

Analysis. Alternative B would have both adverse and beneficial impacts on soils in the project area. Construction of a new overlook/trailhead would have no effect on soils because this area has been previously altered. Development of the new visitor contact station and adjacent outdoor exhibit space, and several new short walkways would result in the excavation and loss or alteration of approximately 0.2 acre of soils—a minor, long-term, adverse impact in localized areas. Alternatively, reconfiguring roads and parking areas would eventually benefit about 4.0 acres of soils. Ripping the ground

(allowing moisture to infiltrate), treating the soil to make it productive, and replanting vegetation would help restore the soil and soil functions over the long term in several areas. This action would have a moderate, long-term, beneficial effect to soils in localized areas. Overall, alternative B would have a moderate, long-term beneficial effect to soils, primarily due to the reconfiguring roads and parking areas and restoration of natural vegetation.

Cumulative Impacts. Past actions have altered and removed soils in localized areas in the Colter Bay project area, including development and replacement of water and sewer pipelines and removal of underground fuel tanks. Since these soils have been altered by past actions, the proposed project actions would have a long-term, negligible, adverse impact on soils in these localized areas. There would be a negligible, long-term impact to soils due to past recent actions and the future replacement of utility lines, the conversion of campsites into accessible campsites, and the selective removal of trees. When the moderate, beneficial, and negligible adverse effects of alternative B are added to the negligible adverse effects of other actions in the Colter Bay area there would be a long-term, minor to moderate, beneficial impact on soils. Alternative B would add a large beneficial increment to this overall cumulative impact.

Conclusion. Alternative B would have both long-term, minor, adverse and beneficial effects on soil in localized areas. Overall, the alternative would have a long-term, moderate, beneficial effect on soil, primarily due to restoration activities. There would be the potential for a long-term, minor to moderate beneficial cumulative impact when the effects of alternative B are added to the effects of other actions in the Colter Bay area. Alternative B would add a large beneficial increment to the overall cumulative impact.

Alternative C

Analysis. Alternative C would have similar adverse and beneficial impacts on soils as described for alternative B. Development of the new visitor center, overlook, and several new short walkways would result in the excavation and loss or alteration of approximately 0.2 acre of soils, which would be a minor, long-term, adverse impact in localized areas. Alternatively, reconfiguring roads and parking areas would eventually benefit about 2.6 acres of soils. Ripping the ground (allowing moisture to infiltrate), treating the soil to make it productive, and replanting vegetation would help restore the soil and soil functions in several areas over the long term. This action would have a moderate, long-term, beneficial impact on soils in localized areas. Overall, alternative C would have a moderate, long-term beneficial effect on soils, primarily due to reconfiguring parking areas and restoration of natural vegetation.

Cumulative Impacts. There would be a negligible, long-term adverse impact to soils due to recent past recent actions and the future replacement of utility lines, the conversion of campsites into accessible campsites, and the selective removal of trees in the project area. When the moderate, beneficial, and minor adverse effects of alternative C are added to the negligible effects of other actions in the Colter Bay area, there would be a long-term, minor to moderate, beneficial, cumulative impact on soils. Alternative C would add a large beneficial increment to this overall cumulative impact.

Conclusion. Alternative C would have both minor, long-term, adverse and beneficial effects on soils in localized areas. Overall, the alternative would have a long-term, moderate, beneficial effect on soil primarily due to restoration activities. When the effects of other actions are added to the effects of alternative C, there would be a long-term, minor to moderate, beneficial, cumulative impact on soils in the Colter Bay area.

Alternative C would add a large beneficial increment to the overall cumulative impact.

Alternative D

Analysis. Most of the soils of the project area would not be affected by alternative D. Replacing the existing Colter Bay Visitor Center with a larger one in the same location would result in approximately 0.1 acre of soil being excavated, altered, and/or lost. This action would constitute a minor, long-term, adverse impact. Alternatively, the removal and restoration of part of the paved parking area northwest of the visitor center would eventually benefit about 0.4 acre of soil; ripping the ground (allowing moisture to infiltrate), treating the soil to make it productive, landscaping, and replanting vegetation would help restore soil and soil functions in this area over the long term, resulting in a minor, long-term, beneficial impact. Overall, alternative D would have a minor, long-term beneficial effect on soils, primarily due to pavement removal and restoration of natural vegetation.

Cumulative Impacts. As noted in the previous alternatives, past actions have altered and removed soils in localized areas of the Colter Bay area, resulting in a long-term, negligible, adverse impact on soils in these localized areas. There would be a negligible, long-term adverse impact to soils due to recent past recent actions and the future replacement of utility lines, the conversion of campsites into accessible campsites, and the selective removal of trees in the project area. When the minor beneficial, effects of alternative D are added to the negligible effects of other actions in the Colter Bay area, there would be a long-term, minor, beneficial, cumulative impact on soils. Alternative D would add a considerable beneficial increment to this overall cumulative impact.

Conclusion. Alternative D would not affect most soils of the project area. The alternative would have both adverse and beneficial

impacts in localized areas. Overall, alternative D would have a long-term, minor, beneficial impact on soil due to restoration activities. When the effects of other actions are added to the effects of alternative D there would be a long-term, minor, beneficial, cumulative impact on soils in the Colter Bay area. Alternative D would add a considerable beneficial increment to this overall cumulative impact.

WATER QUALITY

For water quality the following impact intensity definitions were used:

- *Negligible Impact:* Changes would be either undetectable or barely detectable; any effects would be slight.
- *Minor Impact:* Changes in water quality would be measurable, although the changes would be small and may affect a few organisms. The changes could include increased or decreased loads of sediment, debris, chemical or toxic substances, or pathogenic organisms.
- *Moderate Impact:* Changes in water quality would be clearly measurable and potentially affect organisms or natural ecological processes.
- *Major Impact:* Changes in water quality would be readily measurable, result in substantial changes, and potentially affect organisms or natural ecological processes. These changes would be noticed on a parkwide or regional scale.

Alternative A (no-action alternative)

Analysis. Under alternative A, stormwater runoff from the parking areas would remain untreated and may continue to enter Jackson

Lake. Although it is not known what substances are contained in the runoff from vehicles in the parking areas, small quantities of petroleum products such as polycyclic aromatic hydro-carbons, heavy metals, pavement pollutants, and trash are likely present. It is likely that some stormwater runoff from the parking areas eventually enters the lake. Stormwater runoff discharges would be expected to result in small adverse changes in water quality. But given the large size of the lake and the small level of pollutants, any impacts would result in a minor, long-term, adverse impact to water quality in the bay.

Cumulative Impacts. No other recent past or reasonably foreseeable actions in the developed area would be expected to affect the lake's water quality. Some discharge of pollutants from motorboats, such as oil and other hydrocarbons, likely occurs at the marina, which would result in a long-term, minor, adverse impact on water quality. But given the large size of the lake, the small level of pollutants, and the seasonal nature of motorboating, any impacts would result in a minor, long-term, adverse impact to water quality in Colter Bay. When the minor, long-term, adverse effects of alternative A are added to the effects of discharges from boats in the marina, there would continue to be a minor, long-term, adverse, cumulative impact on water quality. Alternative A would add a small increment to the overall cumulative impact.

Conclusion. Alternative A would continue to result in a minor, long-term, adverse impact on water quality, primarily due to some stormwater runoff from Colter Bay parking. There would continue to be a long-term minor adverse cumulative impact on water quality when the effects of alternative A are added to the discharges from motor boats in the marina.

Alternative B (NPS preferred alternative)

Analysis. Construction activities associated with this proposed project would have the potential to result in adverse impacts to water quality if spills or equipment leakages were to occur, or if stormwater runoff from the construction sites were to carry sediments into Colter Bay (Jackson Lake). Discharges from construction equipment could result in pollutants such as diesel fuel, oil, and metals entering the lake, where they could degrade water quality. But implementation of the mitigation measures listed in chapter 2 should prevent most of the potential adverse impacts from discharges of construction equipment. Any adverse impacts that occur to water quality would be expected to be negligible and short term.

Under alternative B, stormwater runoff would be treated to prevent pollutants from vehicles in the parking lots entering Colter Bay. Stormwater treatment should reduce the potential for any water pollution. In addition, removing a portion of the parking areas and roads and revegetating the areas would eliminate the potential for some pollutants to enter the bay. The newly revegetated areas would help filter out pollutants. These actions would be expected to have a minor, long-term, beneficial impact on water quality in Colter Bay (Jackson Lake).

Compared to alternative A, alternative B would result in an overall reduction in the quantity of pollutants entering the lake due to treatment of stormwater. Therefore, alternative C would have a minor, long-term, beneficial impact on water quality in Colter Bay (Jackson Lake).

Cumulative Impacts. The motorboats arriving and departing from the Colter Bay marina would likely discharge some hydrocarbons into the water, resulting in a long-term, minor, adverse impact on water quality. When these minor adverse effects are added to the minor, beneficial effects of alternative B there would be a negligible to

minor, long-term, beneficial, cumulative impact on water quality. Alternative B would add a relatively large beneficial increment to this overall cumulative impact.

Conclusion. Alternative B would overall result in a minor, long-term, beneficial impact on water quality due primarily to stormwater treatment for the parking areas and revegetation of part of the former parking areas and roads. There would be a negligible to minor, long-term, beneficial, cumulative impact when the beneficial effects of alternative B are added to the adverse effects of motorboat use at the marina. Alternative B would add a relatively large contribution to the overall cumulative impact.

Alternative C

Analysis. Construction activities associated with this proposed project would have the potential to result in adverse impacts to water quality if spills or leakages from equipment were to occur, or if stormwater runoff from the construction sites were to carry sediments into the bay. Discharges from construction equipment could result in pollutants such as diesel fuel, oil, and metals entering the lake, where they could degrade water quality. However, implementation of the mitigation measures listed in chapter 2 should avoid most of the potential adverse impacts from discharges of construction equipment. Any adverse impacts that occur to water quality would be expected to be negligible and short term.

Under alternative C, stormwater would be treated to prevent pollutants from vehicles in the parking areas entering Colter Bay. This stormwater treatment should reduce the potential for any water pollution. In addition, removing a portion of the parking areas and roads, would eliminate the potential for some pollutants to enter the bay. The newly revegetated areas would help filter out pollutants. These actions would be expected to have a minor, long-term, beneficial impact on water quality in Colter Bay.

Compared to alternative A, alternative C would result in an overall reduction in the quantity of pollutants entering the lake due to treatment of stormwater. Therefore, alternative C would have a minor, long-term, beneficial impact on water quality in Colter Bay.

Cumulative Impacts. As in alternative B, continuing discharges from motorboats arriving and departing from Colter Bay marina would likely discharge some hydrocarbons into the water, resulting in a long-term, minor, adverse impact on water quality. When these minor adverse effects are added to the minor, beneficial effects of alternative C, there would be a negligible to minor, long-term, beneficial, cumulative impact on water quality. Alternative C would add a relatively large beneficial increment to this overall cumulative impact.

Conclusion. Alternative C would have similar impacts on water quality as alternative B. Alternative C would overall have a minor, long-term, beneficial impact on water quality due primarily to incorporation of stormwater treatment for the parking areas and revegetation of some former parking areas and roads. There would be a negligible to minor, long-term, beneficial, cumulative impact when the beneficial effects of alternative C are added to the adverse effects of motorboat use in the marina. Alternative C would add a relatively large beneficial increment to this overall cumulative impact.

Alternative D

Analysis. Like alternative C, proposed construction activities of alternative D would have the potential to result in adverse impacts to water quality if spills or leakages from equipment were to occur, or if stormwater runoff from construction sites were to carry sediments into the bay. Discharges from construction equipment could result in pollutants such as diesel fuel, oil, and metals entering the lake, where they could degrade water quality. But implementation of the

mitigation measures listed in chapter 2 should avoid most of the potential adverse impacts from discharges of construction equipment. Any adverse impacts that occur to water quality would be expected to be negligible and short term.

Under alternative D, stormwater runoff would be treated to prevent pollutants from vehicles in the parking areas entering Colter Bay (Jackson Lake). In addition removing a portion of a parking area and revegetating the area would reduce the potential for some pollutants to enter the bay. These actions would be expected to have a minor, long-term, beneficial impact on water quality in Colter Bay.

Compared to alternative A, alternative D would result in an overall reduction in the quantity of pollutants entering the lake due to treatment of stormwater. Therefore, alternative D would be expected to have a minor, long-term, beneficial impact on water quality in Colter Bay.

Cumulative Impacts. As in the previous alternatives, discharges from motorboats arriving and departing from Colter Bay marina would likely discharge some hydrocarbons into the water, resulting in a long-term, minor, adverse impact on water quality. When these minor adverse effects are added to the minor, beneficial effects of alternative D, there would be a negligible to minor, long-term, beneficial, cumulative impact on water quality. Alternative D would add a relatively large beneficial increment to this overall cumulative impact.

Conclusion. Alternative D would have a minor, long-term, beneficial impact on water quality due primarily to incorporation of stormwater treatment for the parking areas and revegetation of a small part of the existing parking area. When the beneficial effects of alternative D are added to the adverse effects from motorboat use in the marina, there would be a long-term, negligible to minor, beneficial, cumulative impact on water quality. Alternative D would

add a relatively large beneficial increment to this overall cumulative impact.

VEGETATION

For vegetation the following impact intensity definitions were used:

- *Negligible Impact:* The action might result in a change in vegetation or wildlife, but the change would not be measurable or would be at the lowest level of detection.
- *Minor Impact:* The action might result in a detectable change, but the change would be slight and have a local effect on a population. This could include changes in the abundance or distribution of individuals in a local area, but not changes that would affect the viability of local populations.
- *Moderate Impact:* The action would result in a clearly detectable change in a population and could have an appreciable effect. This could include changes in the abundance or distribution of local populations, but not changes that would affect the viability of regional populations.
- *Major Impact:* The action would be severely adverse or exceptionally beneficial to a population. The effects would be substantial and highly noticeable, and they could result in widespread change. This could include changes in the abundance or distribution of a local or regional population to the extent that the population would not be likely to recover (adverse) or return to a sustainable level (beneficial).

Alternative A (no-action alternative)

Analysis. The no-action alternative would result in no new construction, excavation, or ground disturbance from new facilities. Much of the Colter Bay area's vegetation has been substantially altered in the past, as noted in the "Affected Environment" chapter, and a large part of the project area is paved and/or covered by facilities. There likely would continue to be nonnative species present in the area. Some disturbance of vegetation would continue from people walking off paved paths, trampling vegetation, and forming social trails. However, the vast majority of people would be expected to remain on paved paths. Consequently, alternative A would result in a minor, long-term, adverse impact to native vegetation in the Colter Bay area.

Cumulative Impacts. As noted above, the vegetation in the Colter Bay area has been substantially altered in the past. But no major new disturbance has occurred in the recent past. In the reasonably foreseeable future, the selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, and the replacement of some utility lines would alter or eliminate some native vegetation and result in a long-term, minor, adverse impact to vegetation in these localized areas. When the effects of these actions are added to minor, long-term adverse impacts of alternative A, there would be a minor, long-term, cumulative adverse effect on native vegetation in the Colter Bay area. Alternative A would add small increment to the overall adverse cumulative impact.

Conclusion. Alternative A would have a minor, long-term, adverse effect on the vegetation in the Colter Bay project area, primarily due to people walking off paved paths and trampling vegetation. When the effects of alternative A are added to the effects of other actions in the area, there would be a minor, long-term, cumulative adverse effect on native vegetation in the Colter Bay area. Alternative A would add

small increment to the overall adverse cumulative impact.

Alternative B (NPS preferred alternative)

Analysis. Alternative B would have both adverse and beneficial impacts on vegetation in the area. Construction of the new overlook/trailhead would have a negligible to minor, long-term, adverse effect on vegetation because a relatively small area (less than 0.1 acre) would be affected and although there would be a loss of some native plants, this area also has been disturbed in the past—the area being affected is of relatively low ecological integrity. Any loss of plants, primarily a mixture of native and nonnative grasses, should not affect the viability of populations of native plants in the project area.

Development of the new visitor contact station and adjacent outdoor gathering and storage space would result in the excavation and loss or alteration of approximately 0.2 acre of vegetation, the majority being lodgepole pine, shrubs, and grasses. This area also has been disturbed in the past. Some trees would likely be selectively removed to provide views of Colter Bay and the Teton Range from the visitor contact station. Because this area has been disturbed in the past, a relatively small area would be affected, the loss of native vegetation would not affect the viability of local plant populations, and with the application of mitigation measures to minimize disturbance, there would be a long-term, minor, adverse impact on vegetation in this area.

The establishment of a staging area connected to the construction project would occur in an already disturbed area such as an existing parking area. With a relatively small, likely unvegetated area, few if any native plants would be lost. Thus, this action should have at most a negligible, short-term, adverse impact on native vegetation.

Implementation of the mitigation measures listed in chapter 2, including salvaging and preserving existing native vegetation to the extent possible, fencing disturbance zones, using only weed-free certified materials, reusing topsoil as near to the original location as possible, should avoid, reduce, and minimize most of the potential adverse vegetation impacts that occur due to the construction activities. A revegetation plan also would provide direction to restoring disturbed areas to a more natural state. However, in spite of all of these mitigation efforts with any ground disturbance there would still be the potential for the spread of some nonnative species such as spotted knapweed in the area. Consequently, there would be a long-term, minor, adverse impact on native vegetation due to all proposed construction.

Reconfiguring roads and parking areas would eventually result in restoration of about 4.0 acres of native vegetation over the long term, which would be a long-term, moderate, beneficial impact.

Overall, alternative B would have a long-term, minor to moderate, beneficial impact on native vegetation in the Colter Bay area, primarily due to reconfiguration of parking areas and roads and revegetation of selected areas.

Cumulative Impacts. The selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, and the replacement of some utility lines would alter or eliminate some native vegetation, resulting in a long-term, minor, adverse impact to vegetation in localized areas. When the effects of these actions are added to the minor to moderate, long-term, beneficial impact of alternative B, there would be a long-term, minor, beneficial, cumulative impact. Alternative B would add a substantial increment to the overall beneficial cumulative effect.

Conclusion. Overall, alternative B would have a long-term, minor to moderate,

beneficial impact on vegetation due to the restoration of native vegetation associated with reconfiguring roads and parking areas. Alternative B would result in a long-term, minor, beneficial, cumulative effect when its effects are added to the effects of other reasonably foreseeable actions in the area. Alternative B would add a substantial increment to the overall beneficial cumulative effect.

Alternative C

Analysis. Development of the new visitor center and adjacent outdoor gathering space, and the new overlook/trailhead would result in the excavation and loss or alteration of approximately 0.2 acre of vegetation, the majority being lodgepole pine, shrubs, and grasses. Some trees would likely be selectively removed to provide views of Colter Bay and the Teton Range from the visitor center. However, the area being affected is of relatively low ecological integrity. Because this area has been disturbed in the past, a relatively small area would be affected, the loss of native vegetation would not affect the viability of local plant populations, and with the application of mitigation measures to minimize the disturbance, there would be a long-term, minor, adverse impact on vegetation in this area.

The establishment of a staging area, connected to the construction project, would occur in an already disturbed area, such as an existing parking area. With a relatively small, likely unvegetated area, few if any native plants would be lost. Thus, this action should have at most a negligible, short-term, adverse impact on native vegetation.

Implementation of the mitigation measures listed in chapter 2, should avoid, reduce, and minimize many of the potential adverse vegetation impacts that could occur due to the proposed construction activities. A revegetation plan also would provide direction to restoring disturbed areas to a more natural state. However, in spite of all of

these mitigation efforts with any ground disturbance there would still be the potential for the spread of some nonnative species, such as spotted knapweed, in the area. Consequently, there would be a long-term, minor, adverse, impact on native vegetation in the area due to all proposed construction activities.

Reconfiguring roads and parking areas would eventually result in restoration of about 2.6 acres of native vegetation, which would result in a long-term, minor to moderate, beneficial impact.

Overall, alternative C would have a long-term, minor to moderate, beneficial impact on native vegetation in the Colter Bay area, primarily due to reconfiguring of parking areas and roads and revegetation of selected areas.

Cumulative Impacts. The selective removal of some trees near the visitor center, the conversion of some campsites into accessible sites, and the replacement of some utility lines would alter or eliminate some native vegetation, resulting in a long-term, minor, adverse impact to vegetation in localized areas. When the effects of these actions are added to the minor to moderate, long-term, beneficial impact of alternative C, there would be a long-term, minor, beneficial, cumulative impact. Alternative C would add a large increment to the overall beneficial cumulative effect.

Conclusion. Overall, alternative C would have a long-term, minor to moderate, beneficial impact on vegetation due to the restoration of native vegetation associated with reconfiguring roads and parking areas. There would be a long-term, minor, beneficial, cumulative impact when the effects of alternative C are added to other reasonably foreseeable actions in the area. Alternative C would add a large increment to the overall beneficial cumulative effect.

Alternative D

Analysis. Most of the vegetation in the project area would not be affected under alternative D. Replacing the existing Colter Bay Visitor Center with a larger one in the same location would result in approximately 0.1 acre of vegetation being disturbed and/or lost, the majority being lodgepole pine, shrubs, and grasses. A few trees would likely be selectively removed to improve views. However, the area being affected is of relatively low ecological integrity. Because this area has been disturbed in the past, a relatively small area would be affected, the loss of native vegetation would not affect the viability of local plant populations, and with the application of mitigation measures to minimize the disturbance, there would be a long-term, minor, adverse impact on vegetation in this area.

The establishment of a staging area connected to the construction project would occur in an already disturbed area such as an existing parking area. With a relatively small, likely unvegetated area, few if any native plants would be lost. Thus, this action should have at most a negligible, short-term, adverse impact on native vegetation.

Implementation of the mitigation measures listed in chapter 2, should avoid and minimize adverse vegetation impacts. A revegetation plan also would provide direction to restoring disturbed areas to a more natural state. However, in spite of all of these mitigation efforts with any ground disturbance there would still be the potential for the spread of some nonnative species, such as spotted knapweed, in the area. Consequently, there would be a long-term, minor, adverse impact on native vegetation in the project area due to all proposed construction activities.

The removal and revegetation of part of the paved parking area northwest of the visitor center would eventually result in restoration of about 0.4 acre of native vegetation—a long-term, minor, beneficial effect.

Overall, alternative D would have a long-term, minor, beneficial impact on native vegetation in the Colter Bay area due to the removal and revegetation of part of a parking area.

Cumulative Impacts. The selective removal of some trees by the visitor center, the conversion of some campsites into accessible sites, and the replacement of some utility lines would alter or eliminate some native vegetation, resulting in a long-term, minor, adverse impact to vegetation in localized areas. When the effects of these actions are added to the minor, beneficial impacts of alternative D there would be a long-term, negligible to minor, beneficial, cumulative impact. Alternative D would add a relatively large increment to the overall beneficial cumulative effect.

Conclusion. Alternative D would not affect most of the project area's vegetation. The alternative would have a long-term, minor, beneficial effect due to the removal and revegetation of part of a parking area. When the beneficial effects of alternative D are added to other reasonably foreseeable actions in the Colter Bay area there would be a negligible to minor, long-term, beneficial cumulative impact on the area's vegetation. Alternative D would add a relatively large increment to the overall beneficial cumulative effect.

WILDLIFE

For wildlife the following impact intensity definitions were used:

- *Negligible Impact:* The action might result in a change in vegetation or wildlife, but the change would not be measurable or would be at the lowest level of detection.
- *Minor Impact:* The action might result in a detectable change, but the change would be slight and have a local effect

on a population. This could include changes in the abundance or distribution of individuals in a local area, but not changes that would affect the viability of local populations. Changes to local ecological processes would be minimal.

- *Moderate Impact:* The action would result in a clearly detectable change in a population and could have an appreciable effect. This could include changes in the abundance or distribution of local populations, but not changes that would affect the viability of regional populations. Changes to local ecological processes would be of limited extent.
- *Major Impact:* The action would be severely adverse or exceptionally beneficial to a population. The effects would be substantial and highly noticeable, and they could result in widespread change. This could include changes in the abundance or distribution of a local or regional population to the extent that the population would not be likely to recover (adverse) or return to a sustainable level (beneficial). Key ecological processes would be altered, and “landscape-level” (regional) changes would be expected.

Alternative A (no-action alternative)

Analysis. The no-action alternative would result in no new construction, excavation, or ground disturbance in the Colter Bay project area. The project area would continue to provide low quality habitat due to the level of existing development and human use. The present level of human activity in the Colter Bay area creates a buffer of relatively unused habitat around the developed area, the size of which is based on species and individual

levels of tolerance for human activity. With no changes in vegetation and human use levels, wildlife use of the area would generally remain as it is currently. The presence of people and facilities in the area would continue to affect wildlife, with large mammals (e.g., elk, coyote, black bear) and certain birds that are sensitive to people (e.g., bald eagle, trumpeter swan, raptors) largely avoiding the area when people are present. The presence of the visitor center, within 100 feet of the lake shoreline, may inhibit the movement of some wildlife along the lake-shore. However, most wildlife have been affected by this developed area for many years, and wildlife remaining in the area have adapted to these conditions. Courtship, territory establishment, intraspecies communication, predation, predator avoidance, and effective use of habitat have already been altered in the area. Thus, alternative A would continue to have a long-term, negligible, adverse impact on wildlife.

Cumulative Impacts. Wildlife populations and habitat in the Colter Bay area have been substantially altered in the past by the NPS developments and presence of people in the area. In the recent past noise from the replacement of pipelines and storage tanks in the area may have adversely affected some wildlife in the Colter Bay area. But no major new disturbance has occurred recently. In the reasonably foreseeable future, the selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, and the replacement of some utility lines would alter or eliminate some native vegetation that a few animals may use for foraging, nesting or shelter. The continuing removal of pine beetle-killed trees also would remove some snags that cavity-nesting birds may use. All of these actions would result in a long-term, negligible, adverse impact to wildlife habitat and populations in localized areas. When the negligible adverse effects of these actions are added to the negligible adverse effects of alternative A, there would be a negligible, adverse, cumulative impact on wildlife. Of the cumulative impacts that would occur,

alternative A would add a relatively large increment to the overall impact.

Conclusion. Alternative A would continue to result in a long-term, negligible, adverse impact on wildlife populations and habitat, largely due to the presence of people and facilities in the Colter Bay area. When the effects of reasonably foreseeable actions in the area are added to the negligible adverse effects of alternative A, there would be a long-term, negligible, adverse cumulative impact on wildlife in the area. Of the cumulative impacts that would occur, alternative A would add a relatively large increment to the overall impact.

Alternative B (NPS preferred alternative)

Analysis. Alternative B would have both beneficial and adverse effects on wildlife in the area. As noted under vegetation, this area is of relatively low ecological integrity. Most wildlife in the Colter Bay area has already been affected by people and developments and would not be affected by the proposed actions under alternative B. No actions would affect areas that are important for breeding, nesting, or foraging. No actions would interfere with feeding, reproduction, or other activities necessary for the survival of wildlife species. There would be no effect on wildlife in the area during the winter.

Noise from construction activities would result in the short-term displacement of some wildlife such as mule deer, moose, and black bear. Construction of the new visitor contact station would result in the loss of about 0.2 acre of habitat, primarily affecting forest birds and small mammals (e.g., voles, squirrels, mice, hares, flycatchers, sparrows). In addition, noise from people using the new visitor contact station and adjacent area would displace some sensitive wildlife. Most displaced animals would likely relocate to similar habitat within the surrounding area. The permanent loss of a relatively small number of trees has the potential to adversely

affect some birds that use and depend on these trees for nesting, foraging, or shelter, although this loss would occur in an area with existing high human use and low habitat quality. Although the effects of construction activities would not have population-level impacts, they may cause increased competition, increased predation, and lower survival rates for some individuals. But for most animals in the area, the additional amount of habitat loss would have a negligible to minor adverse effect on their habitat, populations, and behavior. Existing development and human activity have already degraded habitat quality of this area and likely the ability of wildlife to freely use this habitat. Small mammal species would continue to use unmodified habitat within and adjacent to the project area. Summer range would continue to be widely available for all the ungulate species (e.g., elk and moose) in areas near the project area. A variety of birds, including sparrows, warblers, thrushes, and woodpeckers, would continue to use unmodified habitat within and adjacent to the project area. Overall, construction activities and use of the new visitor contact station in alternative B would be expected to result in short- and long-term, negligible to minor, adverse impacts to wildlife and their habitat in the project area.

Reconfiguring parking areas and roads, and restoring native vegetation on about 4.0 acres would reduce the presence of people in these areas and increase habitat for wildlife. Restoration of these previously disturbed areas would offset some of the direct habitat loss from new disturbance; however, vegetation structure in the restored area may not be similar to what is removed for site improvements. Thus, this action would likely have a long-term, minor, beneficial effect on wildlife in the project area.

Building the new replacement visitor contact station approximately 400 feet farther from the shoreline, and rerouting the road would be beneficial for wildlife. Fewer facilities and less human activity near the lakeshore would enable individual animals to more easily use

the shoreline as a travel corridor and move more directly through the Colter Bay developed area to other habitat, resulting in a long-term, minor, beneficial impact on wildlife in the area.

Overall, alternative B would have a long-term, minor beneficial impact on wildlife in the Colter Bay area, primarily due to reconfiguring parking areas and roads, revegetation, relocation of the visitor center and rerouting of the road away from the lakeshore.

Cumulative Impacts. In the reasonably foreseeable future, the selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, the replacement of some utility lines, and the removal of pine beetle-killed trees would alter or eliminate some native vegetation that a few animals may use for foraging, nesting or shelter, resulting in a few animals being disturbed or displaced. This would have a negligible, long-term adverse impact on wildlife populations and habitat. When these negligible adverse impacts are added to the minor beneficial impacts of alternative B, there would be a long-term, minor, beneficial cumulative impact on wildlife in the area. Alternative B would add a relatively large increment to the overall cumulative impact.

Conclusion. Alternative B would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative B would have a minor, long-term, beneficial effect on wildlife in the area, primarily due to the restoration of wildlife habitat. When the effects of alternative B are added to the effects of other reasonably foreseeable actions in the area there would be a long-term, minor, beneficial, cumulative impact. Alternative B would add a relatively large increment to the overall beneficial cumulative impact.

Alternative C

Analysis. Alternative C would have both beneficial and adverse effects on wildlife in the project area. As noted under vegetation, this area is of relatively low ecological integrity. Most wildlife in the Colter Bay area has already been affected by people and developments and would not be affected by the proposed actions under alternative C. No actions would affect areas that are important for breeding, nesting, or foraging. No actions would interfere with feeding, reproduction, or other activities necessary for the survival of wildlife species. The alternative would have no effect on wildlife in the area during the winter.

Noise from construction activities would result in short-term displacement of some wildlife such as mule deer, moose, and black bear. Construction of the new visitor center would result in the loss of about 0.2 acre of wildlife habitat, primarily affecting forest birds and small mammals (e.g., voles, squirrels, mice, hares, flycatchers, sparrows). In addition, noise from the new visitor center and adjacent area would displace some sensitive wildlife, which would likely relocate to similar habitat within the surrounding area. The permanent loss of a relatively small number of trees has the potential to adversely affect some birds that use and depend on those trees for nesting, foraging, or shelter, although this loss would occur in an area with existing high human use and low habitat quality. Although the effects of construction activities would not have population-level impacts, they may cause increased competition, increased predation, and lower survival rates for some individuals. But for most animals in the area, the additional amount of habitat loss would have a negligible to minor, adverse effect on their habitat, populations, and behavior. Existing development and human activity have already degraded habitat quality of this area and likely the ability of wildlife to freely use this habitat. Small mammal species would continue to use unmodified habitat within and adjacent to the project area. Summer

range would continue to be widely available for all ungulate species (e.g., elk and moose) in areas near the project area. A variety of birds, including sparrows, warblers, thrushes, woodpeckers, and others, would continue to use unmodified habitat within and adjacent to the project area. Overall, construction activities and use of the new visitor center under alternative C would be expected to result in short- and long-term, negligible to minor, adverse impacts to wildlife and their habitat in the project area.

Reconfiguring parking areas and roads, and restoring native vegetation on about 2.6 acres would reduce the presence of people in these areas and increase habitat for wildlife. Restoration of these previously disturbed areas would offset some of the direct habitat loss from new disturbance; however, vegetation composition in the restored area may not be similar to what is removed for site improvements. Thus, this action would likely have a long-term, minor, beneficial effect on wildlife.

Moving the new visitor center approximately 400 feet farther from the shoreline would be somewhat beneficial for wildlife. Fewer facilities and less human activity near the lakeshore, would make it easier for animals to use the shoreline as a travel corridor and move more directly through the Colter Bay developed area to other habitat, resulting in a long-term minor, beneficial impact on wildlife in the area.

Overall, alternative C would have a long-term, minor beneficial impact on wildlife in the Colter Bay area, primarily due to the reconfiguration of parking areas and roads, revegetation, and the relocation of the visitor center away from the lakeshore.

Cumulative Impacts. In the reasonably foreseeable future, the selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, the replacement of some utility lines, and the removal of pine beetle-killed trees would alter or eliminate some

native vegetation that a few animals may use for foraging, nesting or shelter, resulting in a few animals being disturbed or displaced. These actions would result in a long-term, negligible, adverse impact to some wildlife populations and habitat in the area, disturbing and displacing a few animals. When the negligible adverse impacts of these actions are added to the minor beneficial impacts of alternative C, there would be a long-term, minor, beneficial, cumulative impact. Alternative C would add a relatively large increment to the overall beneficial cumulative impact.

Conclusion. Alternative C would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative C would have a minor, long-term, beneficial effect on wildlife in the area, primarily due to the restoration of wildlife habitat. There would be minor, long-term, beneficial, cumulative effect when the impacts of alternative C are added to the effects of other reasonably foreseeable actions in the area. Alternative C would add a relatively large increment to the overall beneficial cumulative impact.

Alternative D

Analysis. As noted under vegetation, this area is of relatively low ecological integrity. Most wildlife in the Colter Bay area has already been affected by people and developments and would not be affected by the proposed actions under alternative D. No actions would affect areas that are important for breeding, nesting, or foraging. No actions would interfere with feeding, reproduction, or other activities necessary for the survival of wildlife species. The alternative would have no effect on wildlife in the area during the winter.

Noise from construction activities would result in the short-term displacement of some wildlife. Replacing the existing Colter Bay Visitor Center with a larger one would result in the loss of about 0.1 acre of forest habitat,

primarily affecting forest birds and small mammals (e.g., voles, squirrels, mice, hares, flycatchers, sparrows). Most displaced animals would likely relocate to similar habitat within the surrounding area. The permanent loss of a few trees has the potential to adversely affect some birds that use and depend on those trees for nesting, foraging, or shelter, although this loss would occur in an area with existing high human use and low habitat quality. Although the effects of construction activities would not have population-level impacts, they may cause increased competition, increased predation, and lower survival rates for some individuals. But for most animals in the area, the additional amount of habitat loss would have a negligible adverse effect on their habitat, populations, and behavior. Existing development and human activity have already degraded habitat quality of this area and likely the ability of wildlife to freely use the area. Small mammal species would continue to use unmodified habitat within and adjacent to the proposed project area. Summer range would continue to be widely available for all ungulate species (e.g., elk and moose) in areas near the project area. A variety of birds, including sparrows, warblers, thrushes, woodpeckers and others, would continue to use unmodified habitat within and adjacent to the proposed project area. Overall, construction activities in alternative D would be expected to result in short- and long-term, negligible, adverse impacts to wildlife and their habitat in the project area.

Removing part of the paved parking area northwest of the visitor center, and restoring native vegetation on about 0.4 acre would reduce the presence of people in these areas and increase habitat for wildlife. Restoration of this previously disturbed area would offset some of the direct habitat loss from new disturbance; however, vegetation composition in the restored area may not be similar to what is removed for site improvements. Thus, this action would likely have a long-term, negligible to minor, beneficial effect on wildlife in the area.

Overall, alternative D would have a long-term, negligible to minor beneficial impact on wildlife in the Colter Bay area, primarily due to the removal and revegetation of part of a parking.

Cumulative Impacts. The selective removal of some trees near the Colter Bay Visitor Center, the conversion of some campsites into accessible sites, the replacement of some utility lines, and the removal of pine beetle-killed trees in the reasonably foreseeable future would alter or eliminate some native vegetation that a few animals may use for foraging, nesting or shelter, resulting in a few animals being disturbed or displaced. These actions would result in a long-term, negligible, adverse impact to wildlife populations and habitat in the area. When these negligible adverse impacts are added to the negligible to minor beneficial effects of alternative D there would be a long-term, negligible, beneficial, cumulative impact on wildlife. Alternative D would add a relatively large increment to the overall cumulative impact.

Conclusion. Alternative D would result in both adverse and beneficial impacts to wildlife in the project area. Overall, alternative D would have a negligible, long-term, beneficial effect on wildlife in the area, primarily due to the restoration of wildlife habitat. There would be a long-term, negligible, beneficial, cumulative impact when the effects of alternative D are added to the effects of other reasonably foreseeable future actions in the area. Alternative D would add a relatively large increment to the overall cumulative impact.

SPECIAL STATUS SPECIES

For selected special status species (grizzly bear, gray wolf, Canada lynx, and wolverine) the following impact intensity definitions were used:

- *Negligible Impact:* The action could result in a change to a population or

individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence and would be well within natural variability. This impact intensity equates to a USFWS “may affect, not likely to adversely affect” determination.

- *Minor Impact:* The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable, but small and localized and not outside the range of natural variability. This impact intensity equates to a USFWS “may affect, not likely to adversely affect” or a “likely to adversely affect” determination.
- *Moderate Impact:* The action could result in a detectable change to a population or individuals of a species or designated critical habitat. Changes to the population or habitat might deviate from natural variability, but the changes would not threaten the continued existence of the species in the park. This impact intensity equates to a USFWS “may affect, not likely to adversely affect” or a “likely to adversely affect” determination.
- *Major Impact:* The action would result in a noticeable effect on the viability of a population or individuals of a species or designated critical habitat. Considerable changes may occur during key time periods for a species. Changes to the population or habitat would substantially deviate from natural variability and threaten or help ensure the continued existence of the species in the park. A major adverse impact would be considered a “take” situation and would equate to a USFWS “likely to adversely affect” determination.

Alternative A (no-action alternative)

Analysis. Human presence and associated activities have decreased grizzly bear habitat quality in and adjacent to the Colter Bay area. Most bears have adapted to the presence of people and largely avoid the area when people are present. Under alternative A, individual bears would continue to occasionally travel through this area—particularly along the lake shoreline. The presence of human foods associated with park visitors within the project area has the potential to attract bears, particularly human-habituated grizzly bears, and the potential for these bears to become human food-conditioned would exist. But as noted in the “Affected Environment” section, efforts of park staff and visitors have been highly successful in limiting bear-human incidents, and the potential for bears to become food conditioned is low. Thus, although there would continue to be the potential for bear mortality in the Colter Bay area because of threats to human safety (from food-conditioned bears), this potential for adverse impacts would remain low. The behavior of a few individual bears may continue to be altered due to the presence of people and facilities, but no population level impacts on this species would occur due to this alternative. Therefore, alternative A would continue to have a long-term, negligible, adverse impact on grizzly bears in the area.

For gray wolf, Canada lynx, and wolverine, most individuals would avoid the developed area and adjacent habitats. Transient individual animals may occasionally move through the area, although this would be uncommon. The behavior of individual animals could be altered due to the presence of people and facilities, but no population level impacts on the three species would occur due to this alternative. Therefore, alternative A would continue to have the potential for a long-term, negligible, adverse impact on gray wolf, Canada lynx, and wolverine in the area.

Cumulative Impacts. The past development of facilities and presence of people in the Colter Bay area likely have substantially altered the habitat use and behavior of all four special status species in the immediate area. These effects would continue. Other nearby developments, such as Jackson Lake Lodge, Leek's Marina, the NPS-University of Wyoming Research Center, and the park road system, also could negatively affect the four special status species, disturbing and altering the behavior of individual animals. No major new disturbance has occurred recently. The continuation of the park elk reduction program would increase the potential for grizzly bear mortality through a reduced prey base and increased chance of bears being shot if they encounter persons engaged in elk reduction activities. Reasonably foreseeable NPS activities in the area, including construction activities related to replacing utility infrastructure and minor facilities, would add short-term, negligible, adverse impacts to existing impacts. Past, present, and foreseeable NPS actions could have long-term, minor, cumulative adverse impacts on the four special status species when combined with the effects of alternative A. However, alternative A would add a very small increment to the overall adverse cumulative impact.

Conclusion. Alternative A would continue to have a negligible, long-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine primarily due to potential displacement or disturbance of a few individual animals by human activities. No new actions would occur under alternative A that would affect the four species, although reasonably foreseeable NPS actions in the area would continue to have the potential to cause short-term, negligible to minor, adverse effects. There could be the potential for long-term, minor, cumulative, adverse impacts when the effects of alternative A are added to NPS and other actions in the area. However, alternative A would add a very small increment to the overall adverse cumulative impact. *In summary, this alternative may affect but would not be likely to adversely affect*

grizzly bear, gray wolf, Canada lynx, and wolverine.

Alternative B (NPS preferred alternative)

Analysis. Under alternative B ongoing human activity would continue to deter grizzly bears from using the area— bears would be expected to infrequently pass through the project area. Adverse impacts associated with potential food-conditioning of bears would not vary noticeably between alternatives A and B. No construction activities under the alternative would affect areas that are important for bear breeding, denning, or foraging. Individual grizzlies that use habitats near the project area for foraging may avoid the area altogether due to construction activities and noise during the construction period. But any displacement or disturbance of individual grizzly bears, or their food sources, that would occur as a result of construction activities would be confined to the project's immediate area, and be limited in spatial and temporal extent. Consequently, construction activities would have short-term, negligible, adverse impacts on grizzly bears in the area.

Building the new replacement visitor contact station approximately 400 feet farther from the shoreline, and rerouting the access road to north of the visitor contact station would be beneficial for grizzly bears. Fewer facilities and less human activity near the lakeshore would allow bears to more easily use the shoreline more as a travel corridor, and to move more directly and easily through the Colter Bay developed area to other habitat, with less chance of encountering people. This action would result in a long-term, negligible, beneficial impact on bears in the area.

As in alternative A, transient individual gray wolves, Canada lynx, and wolverines may move through the project area, although this would be uncommon. The behavior of a few individual animals could be altered due to the presence of people and construction

activities, which could result in the animals' short term displacement. Therefore, alternative B could have the potential for a short-term, negligible, adverse impact on gray wolf, Canada lynx, and wolverine in the area. There could also be a long-term negligible benefit on the three species due to the relocation of facilities away from the lake-shore. This would reduce the possibility of these species encountering humans. None of the changes stemming from alternative B would result in population level impacts for the three species.

Overall, alternative B would be expected to have a long-term, negligible, beneficial effect on grizzly bear, and there could be a long-term, negligible beneficial effect on gray wolves, Canada lynx, and wolverines in the area, primarily due to the removal of the visitor center, installing a new, smaller visitor contact station farther from the shoreline, and rerouting the road.

Cumulative Impacts. The past development of facilities and presence of people in the Colter Bay area likely have substantially altered the habitat use and behavior of all four special status species in the immediate area. These effects would continue. Other nearby developments, such as Jackson Lake Lodge, Leek's Marina, the NPS-University of Wyoming Research Center, and the park road system would negatively affect the four special status species, disturbing and altering the behavior of individual animals. No major new disturbance has occurred recently. The continuation of the park elk reduction program would increase the potential for grizzly bear mortality through a reduced prey base and increased chance of bears being shot if they encounter persons engaged in elk reduction activities. Reasonably foreseeable NPS activities in the area, including construction activities related to replacing utility infrastructure and minor facilities, would add short-term, negligible, adverse impacts to existing impacts. When past, present, and foreseeable NPS and other actions are combined with the effects of alternative B, there could be long-term,

minor, cumulative impacts on the four special status species.

Conclusion. Alternative B could have both adverse and beneficial effects on the four special status species in the area. Alternative B would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine in the area, primarily from construction activities that would potentially displace or disturb animals in the immediate area. Overall, alternative B would have a long-term, negligible, beneficial impact on grizzly bear, and there could be a long-term, negligible, beneficial effect on the other three special status species, primarily due to the relocation of facilities away from the Colter Bay lakeshore. No population-level impacts to the four special status species would occur under alternative B. There would be the potential for long-term, minor cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative B. *In summary, alternative B may affect but would not likely adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.*

Alternative C

Analysis. Under alternative C ongoing human activity would continue to deter grizzly bears from using the area—bears would be expected to infrequently pass through the project area. Adverse impacts associated with potential food-conditioning of bears would not vary noticeably between alternatives A and C. No construction activities under the alternative would affect areas that are important for bear breeding, denning, or foraging. Individual grizzlies that use habitats near the project area for foraging may avoid the area altogether due to construction activities and noise during the construction period. But any displacement or disturbance of individual grizzly bears, or their food sources, that would occur as a result of construction activities would be confined to the project's immediate area, and be limited in spatial and temporal extent.

Therefore, construction activities in this alternative would have short-term, negligible, adverse impact on grizzly bears in the area.

Moving the visitor center approximately 400 feet farther from its current location near the shoreline (500 feet total distance from the lake) would be beneficial for grizzly bears. Fewer facilities and less human activity near the lakeshore would allow bears to more easily use the shoreline as a travel corridor, and to move more directly through the Colter Bay developed area to other habitat, with less chance for encountering people. This action would result in a long-term, negligible, beneficial impact on bears in the area.

Like alternative A, transient individual gray wolf, Canada lynx, and wolverine may move through the project area, although this would be uncommon. The behavior of individual animals could be altered due to the presence of people and construction activities, which could result in their short-term displacement. Therefore, alternative C could have the potential for a short-term, negligible, adverse impact on gray wolf, Canada lynx, and wolverine in the area. There could also be a long-term, negligible benefit on the three species due to the relocation of facilities away from the lakeshore, reducing the possibility of these species encountering human activities. None of the changes stemming from alternative C would result in population level impacts for the three species.

Overall, alternative C would be expected to have a long-term, negligible, beneficial effect on grizzly bears in the area, primarily due to the relocation of the visitor center farther from the shoreline. There also could be a short-term, negligible, beneficial impact on gray wolf, Canada lynx, and wolverine in the area.

Cumulative Impacts. The past development of facilities and presence of people in the Colter Bay area likely have substantially altered the habitat use and behavior of all four special status species in the immediate area. These effects would continue. Other

nearby developments, such as Jackson Lake Lodge, Leek's Marina, the NPS-University of Wyoming Research Center, and the park road system, also would affect the four special status species. No major new disturbance has occurred recently. The continuation of the park elk reduction program would increase the potential for grizzly bear mortality through a reduced prey base and increased chance of bears being shot if they encounter persons engaged in elk reduction activities. Reasonably foreseeable NPS activities in the area, including construction activities related to replacing utility infrastructure and minor facilities, would add short-term, negligible, adverse impacts to existing impacts. When past, present, and foreseeable NPS and other actions are combined with the effects of alternative C there could be long-term, minor, adverse cumulative impacts on the four special status species.

Conclusion. Alternative C could have both adverse and beneficial effects on the four special status species in the area. Alternative C would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine in the area, primarily from construction activities potentially displacing or disturbing animals in the immediate area. Overall, alternative C would have a long-term, negligible, beneficial impact on grizzly bear, and there could be a long-term, negligible, beneficial effect on the other three special status species, primarily due to the relocation of facilities away from the Colter Bay lakeshore. No population level impacts to the four special status species would occur under alternative C. There would be the potential for long-term, negligible, cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative C. *In summary, alternative C may affect but would not likely adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.*

Alternative D

Analysis. Under alternative D ongoing human activity would continue to deter grizzly bears from being in the area—bears would be expected to infrequently pass through the project area. Adverse impacts associated with potential food-conditioning of bears would not vary noticeably between alternatives A and D. No construction activities under the alternative would affect areas that are important for bear breeding, denning, or foraging. Individual grizzlies that may use habitats near the project area for foraging may avoid the area due to human presence and construction noise during construction activities. But any displacement or disturbance of individual grizzly bears, or their prey, that occurs as a result of construction activities would be confined to the project's immediate area, and be limited in spatial and temporal extent. Consequently, alternative D would likely have short-term, negligible, adverse impact on bears in the area.

As in alternative A, transient individual gray wolf, Canada lynx, and wolverine may move through the project area, although this would be uncommon. The behavior of individual animals would be altered due to the presence of people and construction activities, which could result in their short-term displacement. Therefore, alternative D could have the potential for a short-term, negligible, adverse impact on gray wolf, Canada lynx, and wolverine in the area. None of the possible changes due to alternative D would result in population level impacts for the three species.

Overall, alternative D would be expected to have a short-term, negligible, adverse effect on grizzly bear, gray wolf, Canada lynx, and wolverine in the area, primarily due to construction activities.

Cumulative Impacts. Like the previous alternatives, past and continuing development of facilities and the presence of people in the Colter Bay area have altered, and would continue to alter the habitat use and behavior of all four special status species in the immediate area. Other nearby developments would also affect the four special status species. No major new disturbance has occurred recently. The continuation of the park elk reduction program would increase the potential for grizzly bear mortality through a reduced prey base and increased chance of bears being shot if they encounter persons engaged in elk reduction activities. Reasonably foreseeable NPS and other activities in the area, including construction activities related to replacing utility infrastructure and minor facilities, would add short-term, negligible, adverse impacts to existing impacts. When past, present, and foreseeable NPS and other actions are combined with the effects of alternative D, there could be long-term, minor, adverse cumulative impacts on the four special status species.

Conclusion. Overall, alternative D would have a negligible, short-term, adverse impact on grizzly bear, gray wolf, Canada lynx, and wolverine, primarily from construction activities potentially displacing or disturbing animals in the immediate area. However, no population level impacts to the four special status species would occur as a result of the alternative. There would be the potential for long-term, minor, adverse, cumulative impacts on the four special status species when NPS and other actions are combined with the effects of alternative D. *In summary, alternative D may affect but would not be likely to adversely affect grizzly bear, gray wolf, Canada lynx, and wolverine.*

IMPACTS TO SCENIC RESOURCES

Information on scenic resources and visual quality was compiled from planning documents, research reports, surveys, and consultation with park resource specialists. Impacts were evaluated by comparing projected changes resulting from the Colter Bay Visitor Services Plan alternatives to existing conditions or the no-action alternative, as appropriate. These evaluations were based on consideration of the park's fundamental resources and values, information about what contributes or detracts from scenic and visual quality in and around Colter Bay, and professional experience.

Intensity impact thresholds for this topic are as follows:

- *Negligible*: Effects would be at or below the level of detection.
- *Minor*: Effects would be small, but detectable and mostly localized.
- *Moderate*: Effects would be readily apparent, but not widespread.
- *Major*: Effects would be severely adverse or exceptionally beneficial or readily apparent and widespread.

Alternative A (no-action alternative)

Analysis. Under alternative A, there would continue to be human-made structures and vehicle parking areas in Colter Bay that would affect the scenic quality of the area. The appearance of naturalness would continue to be adversely affected by the high degree of development attributed to the many structures and to the centrally located roads, parking areas, and walkways. Structures (visitor center, marina, and amphitheater) and vehicle areas would

continue to be adjacent to the waterfront. The proximity of this built environment adversely affects the scenic qualities of the area and the opportunities for viewing wildlife.

Views of the Teton Range and Jackson Lake, upon arrival to the project area, would continue to be negatively affected by vehicular congestion around the grocery store and views of structures, large vehicle areas, and paved walkways that are 20 feet to 13 feet wide. The main access to the lakefront would continue to serve as an informal viewpoint that leads visitors to the waterfront. The expanse of asphalt comprising the informal viewpoint would continue to detract from the views of the Teton Range, Jackson Lake, and Colter Bay.

The overall impacts on scenery from implementing alternative A would be long term, adverse, and minor in intensity. These impacts would be limited to a localized area.

Cumulative Impacts. The ongoing selective removal of lodgepole pine trees would reopen specific viewsheds to provide additional views of Jackson Lake and the Teton Range. Approximately 60 trees have been identified for removal between the Colter Bay Visitor Center and the lakefront to restore and maintain the viewshed. The removal of these trees and recent remodel of the interior of the Colter Bay Visitor Center will provide for new and improved viewing opportunities. The selective removal of these trees is being conducted intermittently by park staff between other more pressing projects. Beetle-killed trees in the Colter Bay area would be removed on an ongoing basis—as of 2011, approximately 24 trees were identified for removal. Many of these trees are within the parking islands and their removal would enhance views of Colter Bay and the Teton Range. Although the progression of the beetle infestation at Colter

Bay is occurring gradually (due to prolonged periods of cold temperatures, which kill the beetles) it is reasonably foreseeable that the appearance of Colter Bay would be altered in the coming years. The removal of beetle infested trees may provide additional opportunities to view the Teton Range and Colter Bay which would have a positive effect. At the same time, the removal of beetle infested trees would expose more of the built environment at Colter Bay thereby having an adverse impact.

Alternative A would contribute long-term, adverse, and minor impacts to scenic resources. Combined with other small past, present, and reasonably foreseeable impacts on scenic resources, the no-action alternative would have long term, beneficial and adverse, minor cumulative impact on scenery. Alternative A would add a small adverse increment to this overall cumulative impact.

Conclusion. Alternative A would have long-term, adverse, minor impacts on scenery in a localized area. Alternative A would have long-term, beneficial, and adverse, minor cumulative impacts when past and future actions affecting scenic resources are added to the impacts of alternative A. Alternative A would add a small adverse increment to this overall cumulative impact.

Alternative B (NPS preferred alternative)

Analysis. Under alternative B, the reduction in the developed footprint would enhance the rustic character and appearance of naturalness in the Colter Bay area. Views of the Teton Range and Jackson Lake upon arrival to the project area would be improved as a result of separating parking areas from the main roadway, vegetative screening, and restoring portions of the roadway to natural conditions. The separation of parking from the main roadway, in combination with approximately 20 feet to 30 feet of vegetative screening, would reduce vehicle congestion and the visual intrusion of the paved area and

human-made structures (grocery store, laundry/shower facility, and post office) upon entry into the project area. The realignment of the road near the grocery store would maintain the views while enhancing the rustic character and appearance of naturalness resulting from vegetated areas on both sides of the roadway. The future design of this area would aim to minimize foreground distractions allowing visitors a greater opportunity to experience the views of the Teton Range and Jackson Lake upon arrival.

The redesign of the Colter Bay area under alternative B would improve the scenic qualities of the waterfront area and possibly opportunities for viewing wildlife. Realignment of the road to north of the new visitor contact station (approximately 400 feet from the waterfront) would minimize foreground distractions and provide a greater opportunity to visually connect with the waterfront and the scenery beyond. The restoration of approximately 4 acres of formerly developed area near the waterfront (former visitor center, roads, medians, and other paved areas) would greatly enhance the rustic character and appearance of naturalness and possibly opportunities for viewing wildlife.

The main access to the lakefront (trailhead/overlook) would be moved approximately 150 feet to the north. Due to viewshed management and the location of the new viewpoint, this alternative would provide improved viewing opportunities of Jackson Lake and the Teton Range. Views from the original main access to the waterfront would still be available and the improvements to the landscape and design of the area (which would reduce the amount of asphalt and development), including the relocation of roads, would greatly reduce foreground distractions and improve the appearance of naturalness.

The overall impacts on scenery from implementing alternative B would be long term, beneficial, and moderate in intensity.

The impact would be limited to a localized area.

Cumulative Impacts. Alternative B would have long term, beneficial, and moderate impacts on scenic resources. The recent, current, and planned construction projects within Colter Bay that would impact visitor experience are the same as for alternative A, with the exceptions of the enhanced view resulting from the recent interior visitor center remodel and the degree of impact associated with the removal of beetle-killed trees. The exposure of the built environment as a result of the removal of beetle-killed trees would be addressed by revegetation and tree planting efforts associated with alternative B. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative B would have a beneficial, minor to moderate cumulative impacts on scenery. Alternative B would add a small beneficial increment to this overall cumulative impact.

Conclusion. Alternative B would have a long-term, beneficial, moderate impact on scenery in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative B would have beneficial, minor to moderate impacts on scenery. Alternative A would add a small beneficial increment to this overall cumulative impact.

Alternative C

Analysis. Under alternative C, the modest reduction in the developed footprint would slightly enhance the rustic character and appearance of naturalness of the Colter Bay area. Views of the Teton Range and Jackson Lake upon arrival to the project area would be improved as a result of separating parking areas from the main roadway and restoring portions of the roadway to natural conditions. The separation of parking from the main roadway, in combination with limited (approximately 5–10 feet) vegetative screening, would slightly reduce vehicle

congestion, the amount of visible paved area, and human-made structures (grocery store, laundry/shower facility, and post office) visible upon entry into the project area. However, the size of the two parking areas parallel to the waterfront would increase. These parking areas would be designed for pull through parking of oversized vehicles, so landscape medians that visually break up the parking lot would be eliminated. Simplifying the entry experience and reducing the number of decision points (foreground) for drivers would allow visitors a greater opportunity to experience the views of the Teton Range and Jackson Lake upon arrival to Colter Bay. Restoring approximately 0.65 acre of roadway (with parking), median, and walkway to natural conditions at the entrance of the project area would also improve the rustic character and appearance of naturalness and foreground views.

Alternative C would improve the scenic qualities of the waterfront area and possibly opportunities for viewing wildlife. Under alternative C, a new visitor center would be constructed approximately 400 feet from the waterfront and the former Colter Bay Visitor Center and associated circulation would be restored to natural conditions. Views of Jackson Lake and the Teton Range from the new visitor center would be slightly compromised by the new location. The distance to the lakefront would also create a greater number of foreground distractions.

The main access to the lakefront would continue to provide views of Jackson Lake and the Teton Range. Improvements to the landscape and design of the area would reduce foreground distractions and improve the appearance of naturalness.

The overall impacts on scenery from implementing alternative C would be long term, beneficial, and minor in intensity. The impact would be limited to a localized area.

Cumulative Impacts. Recent, current, and planned construction projects within Colter Bay that would impact visitor experience are

the same as for alternative A, with the exceptions of the enhanced view resulting from the recent interior visitor center remodel and the degree of impact associated with the removal of beetle killed trees. The exposure of the built environment as a result of the removal of beetle killed trees would be mitigated by revegetation and tree planting efforts associated with alternative C.

Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative C would have a beneficial, minor cumulative impact on scenery. Alternative C would add a small beneficial increment to this overall cumulative impact.

Conclusion. Alternative C would have long-term, beneficial, minor impacts on scenery in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative C would have beneficial, minor cumulative impact on scenery. Alternative C would add a small beneficial increment to this overall cumulative impact.

Alternative D

Analysis. Under alternative D, there would continue to be human-made structures and vehicle areas in Colter Bay that would affect scenic quality. The rustic character and appearance of naturalness would continue to be adversely affected by the high degree of development attributed to the many structures and centrally located roads and large parking areas and walkways. Structures (visitor center, marina, and amphitheater) and vehicle areas would remain close to the waterfront. The proximity of this development adversely affects the scenic qualities and opportunities for viewing wildlife.

Views of the Teton Range and Jackson Lake upon arrival to the project area would continue to be affected by vehicular

congestion around the grocery store and foreground views of structures, parking areas, and paved walkways that are 20 feet to 13 feet wide. The main access to the lakefront would continue to serve as an informal view point; however, this expanse of asphalt would continue to detract from the views of the Teton Range and Jackson Lake.

A new larger visitor center would replace the existing Colter Bay Visitor Center at the same site. The new visitor center would offer outstanding interior and exterior views of the Teton Range and Jackson Lake. These views would be enhanced by the ongoing selective tree removal.

The overall impacts on scenery from implementing alternative D would be long term, localized, adverse, and minor in intensity. The impact would be limited to a localized area.

Cumulative Impacts. Recent, current, and planned construction projects within Colter Bay that would impact visitor experience are the same as for alternative A, with the exceptions of the enhanced view resulting from the recent interior visitor center remodel. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative D would have a adverse, minor cumulative impacts on scenery. Alternative D would add a small adverse increment to this overall cumulative impact.

Conclusion. The overall impacts on scenery from implementing alternative D would be long term, adverse, and minor in intensity in a localized area. Combined with other past, present, and reasonably foreseeable impacts on scenic resources, alternative D would have a adverse, minor cumulative impact on scenery. Alternative D would add a small adverse increment to this overall cumulative impact.

IMPACTS TO VISITOR USE AND EXPERIENCE

Information about visitor use and experience was compiled from various sources including park staff, other NPS specialists, public comments, visitor surveys, and other planning documents and research reports. The methods for assessing impacts on visitor use and experience are based on how the no-action and action alternatives would affect visitors, particularly with regard to visitors' enjoyment of resources and values and other important recreational opportunities.

Impact thresholds for visitor use and experience are defined as follows:

- *Negligible*: Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.
- *Minor*: Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
- *Moderate*: Changes in visitor use and/or experience would be readily apparent. Visitors would be aware of the effects associated with the alternative, and would likely be able to express an opinion about the changes.
- *Major*: Changes in visitor use and/or experience would be readily apparent and have substantial consequences. Visitors would be aware of the effects associated with the alternative, and would likely express a strong opinion about the changes.

Duration

Short-term Impacts. Effects lasting for the duration of construction.

Long-term Impacts. Effects lasting longer than the duration of construction.

Alternative A (no-action alternative)

Visitation over the next 5 to 10 years is expected to remain relatively steady or increase slightly. Visitation trends are difficult to predict and are influenced by a wide variety of factors including population growth, economic trends, demographics, recreational preferences, gas prices, and weather. The anticipated visitation trends over this period would result in negligible impacts to visitor use and experience.

Recreational Opportunities and Experiences

Under the alternative A, no changes would be made regarding the types of recreational opportunities and experiences that are available to Colter Bay visitors.

Facilities and Services

The facilities and services provided at Colter Bay would not change. The visitor center would continue to display a limited number of Vernon Collection items in two exhibit cases and the rest of the collection would remain at the NPS Western Archeological and Conservation Center in Tucson, Arizona. Visitor center exhibits would continue to be displayed. Opportunities for picnicking would remain available at the areas near the visitor center and near the grocery store, and at the picnic area near the swim beach.

Vehicle Circulation, Wayfinding, and Parking

Under alternative A, no changes to vehicular circulation, wayfinding, or parking would be made. The confusing and disorienting arrival experience would have an adverse effect on visitor experience. Many first-time visitors would continue to stop first at the grocery store area, under the assumption that this is the primary Colter Bay destination. Many visitors would continue to drive from place to place within Colter Bay because of the auto-centric design (wide roads, large intersections, and large parking areas).

Alternative A would result in a long-term, negligible, adverse impact on visitor use and experience.

Cumulative Impacts. Past actions that have exposed visitors to construction-related sights, sounds, and/or traffic or parking disturbances include installation of the new water main pipeline and actions related to the decommission of the old Colter Bay service station. Ongoing and future construction projects include replacement of water and sewerlines in the campground, replacement of a campground comfort station, and accessibility improvements to several campsites. Overall, these construction projects would have a localized, short-term, minor, adverse impact on visitor use and experience.

Another past action that impacted visitor use and experience is the temporary relocation of the Vernon collection to the NPS Midwest Archeological Conservation Center in Tucson, Arizona. A small number of items are currently displayed but the depth and range of the museum collections on display has been greatly reduced. As a result, visitors can no longer have the museum experience of viewing several hundred items from the Vernon Collection. The visitor center exhibits installed in late 2011 provide visitors with updated and improved interpretation of topics that relate to the Colter Bay area in an updated interior space. Overall, the changes associated with the 2011/2012 interior

remodel of the Colter Bay Visitor Center would result in both beneficial and adverse, minor to moderate impacts to visitor use and experience.

Alternative A would result in a long-term, negligible, adverse impact on visitor use and experience. Combined with other past, present, and reasonably foreseeable impacts from construction disturbance, alternative A would have a negligible adverse cumulative impact on visitor experience. Alternative A would have a small adverse contribution to this cumulative effect.

Conclusion. Alternative A would result in a long-term, negligible, adverse impact on visitor use and experience. Combined with other past, present, and reasonably foreseeable impacts from construction disturbance, alternative A would have a negligible adverse cumulative impact on visitor experience. The no-action alternative would have a small adverse contribution to this cumulative effect.

Alternative B (NPS preferred alternative)

Recreational Opportunities and Experiences

Under alternative B, the three most highly ranked recreational opportunities and experiences (observing wildlife, nature, and walking) would be improved. Moving the visitor contact station and road farther from the waterfront would improve opportunities for visitors to observe nature and to view wildlife and scenery in the vicinity of the waterfront. In general, this area of Colter Bay would assume a more resource-focused character, which would enhance the opportunities for the three most highly ranked visitor opportunities and experiences. The former location of the visitor center would be restored and used as a picnic area with views of Jackson Lake and the Teton Range. The pedestrian overlook and trailhead near the visitor contact station would provide visitors with better orientation

and more direct access to the trails in the area. The improvements to these key recreational opportunities would result in impacts that are long term, beneficial, and moderate in intensity.

Facilities and Services

Alternative B moves many of the visitor-serving functions outdoors in an effort to provide visitors with a more resource focused experience.

In the new visitor contact station the size/capacity of the restrooms would be nearly doubled, thereby reducing wait times for visitors. Unlike alternative A, the heated restrooms would not be open during the winter months, but new vault (or similar) toilets near the picnic area would be available for winter visitors. These actions would have minor beneficial impacts on visitor experience.

The information counter and associated circulation area would be reduced from the current 1,379 sq ft to approximately 1,000 sq ft. Occasional crowding around the visitor counter would likely occur on inclement weather days. The permitting function would also be at the information counter, placing additional demands on the staff working at the information counter and possibly increasing wait times for visitors. To reduce this demand, visitors would have access to interpretation and orientation panels in the outdoor plaza area before entering the building. These panels would provide much of the commonly requested visitor information. NPS staff would provide orientation services in the outdoor plaza. Despite the space reductions and additional permitting function at the information counter, more information would be available to visitors with the orientation panels in an outdoor setting with visual connections to many of the destinations. The changes to the information counter and how information is delivered to visitors would result in a minor beneficial impact to visitor experience.

The size of the bookstore in alternative B would be similar to that prior to the recent interior improvements at Colter Bay Visitor Center, but considerably smaller than the bookstore in alternative A. A smaller bookstore would likely have fewer items for sale and possibly result in some crowding. The park would work closely with the Grand Teton Association (bookstore operator) during the design phase to ensure an efficient and functional bookstore space. The changes to the bookstore would result in a minor adverse impact to visitor experience.

A covered outdoor pavilion space would be provided for visitors to attend interpretive programs and visiting artist demonstrations. The pavilion would partially replace the indoor theater in the no-action alternative. Regular showings of the videos would probably be discontinued. Visiting artists would use the covered pavilion space to provide demonstrations and sell their art. These changes would result in minor adverse impacts to visitors and visiting artists. The two exhibit cases displaying a limited number of Vernon Collection items would continue to be displayed in the visitor contact station. These exhibits would provide visitors with a small glimpse of what would eventually be on display at a new collections/exhibit facility open to the public year round. The new collections facility would be built at an alternative location to be determined in a future environmental planning process.

Vehicle Circulation, Wayfinding, and Parking

Alternative B would improve visitor experience through changes to vehicular circulation, wayfinding, and parking. As a result of separating parking from the roadway, congestion would be reduced and the arrival and overall driving experience would be improved for visitors. Drivers would no longer be required to back their vehicles into oncoming traffic and passengers would not be exiting their vehicles onto the roadway. The number of decision points for the driver would be limited to the signed parking lot entrance, thereby simplifying and

improving wayfinding. The three destination zones (grocery store; marina; and visitor contact station and lakefront) would have designated parking, further reducing driver confusion. Improved pedestrian connections between the zones would encourage visitors to leave their parked vehicle and travel on by foot. Overall, the above improvements would provide for an improved pedestrian and driving experience for visitors to Colter Bay. Changes to vehicle circulation and wayfinding would result in a moderate, beneficial impact to visitor experience.

The number of passenger parking spaces would be reduced from the existing 389 spaces to approximately 270 spaces. As a result, some competition for parking spaces during periods of peak use may occur and visitors would be more inclined to leave their car parked and walk to the various destinations at Colter Bay. The number of oversized parking spaces would increase from the existing 38 spaces to approximately 55 spaces to better meet demand. Changes to the parking area at Colter Bay would result in moderate beneficial impacts and minor adverse impacts to visitor experience.

Construction Disruptions

There would be no interruption in the services provided at the visitor center/visitor contact station. The park could continue to operate the existing visitor center while the visitor contact station is built. The visitor center would be demolished and the area regraded and restored for use as a picnic area once the visitor contact station is open to visitors. The construction project would take place over two years because of the short construction season. Construction-related noise, the presence of machinery and trucks, and views onto construction sites would have short-term adverse impacts on visitor experience. The construction season generally coincides with the visitor season at Colter Bay and short-term, adverse, moderate impacts to visitor experience would occur.

The parking area and roadway construction would have short-term, moderate, adverse

impacts to visitor experience. Depending on implementation phasing, improvements could take as little as one season to complete. During that time, visitors would experience some traffic delays. Parking may be farther from the destination and possibly be more limited during construction phases, especially for the grocery store area.

Cumulative Impacts. Past actions that have exposed visitors to construction-related sights, sounds, and/or traffic or parking disturbances include the installation of the new water main pipeline and actions related to the decommission of the old Colter Bay service station. Ongoing and future construction projects include replacement of water and sewerlines in the campground, replacement of a campground comfort station, and accessibility improvements to several campsites. Overall, these construction projects would have a short-term, minor, adverse impact on visitor use and experience.

Another past action that impacted visitor use and experience is the temporary relocation of the Vernon collection to the NPS Midwest Archeological Conservation Center in Tucson, Arizona. A small number of items would continue to be displayed in the new visitor contact station but the depth and range of the museum collections on display has been greatly reduced. As a result visitors can no longer have the museum experience of viewing several hundred items from the Vernon collection at Colter Bay, although this experience will eventually be provided elsewhere in the park (pursuant to a future environmental planning process). The changes associated with the Vernon Collection would result in a minor, adverse impact to visitor use and experience.

Combined with the other past, present, and reasonably foreseeable actions on visitor use and experience, alternative B would have a minor, beneficial, cumulative impact. The NPS preferred alternative would add a small adverse increment to this overall cumulative impact.

Conclusion. Overall, implementation of alternative B would result in impacts to recreational opportunities and experiences that are long term, beneficial, and moderate in intensity. The changes to restrooms, information counter/orientation area would result in impacts that are long term, beneficial, and negligible to minor in intensity. The changes to the bookstore would result in long-term, adverse, minor impacts on visitor experience. The changes to the theater and visiting artist area would result in long-term, adverse, minor impacts on visitor experience. The impacts from changes to vehicle circulation and wayfinding would result in a long-term, moderate, beneficial impact to visitor experience. The reduction in the number of parking spaces would result in impacts that are long term, adverse, and negligible to minor in intensity. The construction disturbance related to implementing alternative B would have short-term, adverse, impacts that are moderate in intensity. Combined with the other past, present, and reasonably foreseeable actions on visitor use and experience, alternative B would have a minor, beneficial, cumulative impact. The NPS preferred alternative would add a small adverse increment to this overall cumulative impact.

Alternative C

Recreational Opportunities and Experiences

Under alternative C, the three most highly ranked recreational opportunities and experiences (observing wildlife, nature, and walking) would have minor improvements. The visitor center would be relocated farther from the waterfront, thereby reducing the amount of development near the lakeshore. As a result, opportunities for visitors to observe nature and to view wildlife in the vicinity of the waterfront would be improved. The old visitor center site would be restored and used as a picnic area with views of Jackson Lake and the Teton Range, thus creating an enhanced visitor opportunity. This alternative would encourage pedestrian

travel or “walking” in the Colter Bay area through development of new trail segments that better connect facilities and services. The improved overlook and trailhead would provide visitors with better orientation, but visitors would have to cross the road from the visitor center to get there. The improvements to these key recreational opportunities would result in impacts that are long term, beneficial, and minor in intensity.

Facilities and Services

In alternative C, visitors would experience no change in restroom wait times and seasonal availability. The information counter and associated circulation area would be reduced from the existing 1,379 sq ft to approximately 1,140 sq ft. The permit office would remain separate from the orientation counter. To reduce the need for the information counter, visitors would have access to interpretation and orientation panels before entering the building. These panels would provide much of the information that is commonly requested at the information desk. During peak visitation times, NPS staff would be stationed in this outdoor plaza area to provide orientation services. Despite the minor space reductions, more information would be available to visitors with the orientation panels in an outdoor setting with visual connections to many of the destinations. The changes to the information counter and how information is delivered to visitors would result in a minor beneficial impact to visitor experience.

The size of the bookstore in alternative C would be similar to the bookstore size prior to the 2012 interim interior improvements at the Colter Bay Visitor Center, but considerably smaller than the bookstore in the no-action alternative. Visitors would experience a smaller merchandise selection and possibly some crowding. The park would work closely with the Grand Teton Association (bookstore operator) during the design phase to ensure an efficient and functional bookstore space. The changes to the bookstore would result in a minor adverse impact to visitor experience.

The visitor center would have a multipurpose theater room that is slightly smaller (300 sq ft) than the theater in the no-action alternative. Visiting artist demonstrations would be accommodated in the visitor center in a space that is less than half the size of the space in the no-action alternative. Visitors would experience some crowding in these spaces during periods of peak visitation or inclement weather.

The two exhibit cases displaying a limited number of Vernon Collection items would continue to be displayed in the visitor contact station. This would provide visitors with a small glimpse of what would eventually be on display at a new collections/exhibit facility open to the public year round. The new facility would be built at an alternative location to be determined in a future environmental planning process.

Vehicle Circulation, Wayfinding, and Parking

Alternative C would improve visitor experience through changes in vehicular circulation, wayfinding, and parking. As a result of separating the parking areas from the roadways, congestion would be reduced and the arrival and driving experience would be improved for visitors. Drivers would no longer be required to back their vehicles into oncoming traffic and passengers would not be exiting their vehicles into the roadway. The number of decision points would be limited to signed entrances to the parking lots, thereby simplifying and improving wayfinding. Improved pedestrian connections between the zones would encourage visitors to leave their parked vehicle and walk to services and facilities. Overall, the above improvements would provide for an improved pedestrian and driving experience for visitors to Colter Bay. Changes to vehicle circulation and wayfinding would result in a moderate, beneficial impact to visitor experience.

The number of passenger parking spaces would be reduced from the existing 389 spaces to approximately 290 spaces. As a

result, some competition for parking during periods of peak use may occur and visitors would be more inclined to leave their parked car and walk to the various destinations at Colter Bay. The number of oversized parking spaces would increase from 38 spaces to approximately 55 spaces to better align with demand. Changes to parking areas at Colter Bay would result in moderate beneficial impacts and minor adverse impacts to visitor experience.

Construction Disruptions

There would be no interruption in the services provided at the visitor center. The park could continue to operate the visitor center while the new visitor center is being built. The visitor center would be demolished and the area regraded and restored for use as a picnic area after the new visitor center is open to visitors. This construction would take place over two years because of the short construction season. Construction-related noise, the presence of machinery and trucks, and views onto construction sites, would have a short-term adverse impact on visitor experience. The construction season generally coincides with the visitor season at Colter Bay and short-term, adverse, moderate impacts to visitor experience would occur.

The parking and roadway construction would have short-term, moderate, adverse impacts to visitor experience. Depending on implementation phasing, the improvements could take as little as one season to complete. During that time, visitors would experience some traffic delays. Parking may be farther from the destination and possibly be more limited during construction intervals.

Cumulative Impacts. Past, present, and reasonably foreseeable actions within Colter Bay would impact visitor experience the same as that for alternative B. The impacts of these related actions, in conjunction with the impacts of alternative C, would result in a minor, beneficial cumulative impact. Alternative C would add a small adverse increment to this overall cumulative impact.

Conclusion. Overall, the improvements in alternative C to recreational opportunities and experiences, facilities, and services; and vehicle circulation and wayfinding would result in impacts that are long term, beneficial, and minor to moderate in intensity. The reduction in the number of parking spaces would result in impacts that would be adverse and negligible to minor in intensity. The construction disturbance related to implementing alternative C would have short-term, adverse impacts that are moderate in intensity. Past, present, and reasonably foreseeable actions within Colter Bay would affect visitor experience the same as that for alternative B. The impacts of these related actions, in conjunction with the impacts of alternative C, would result in a minor, beneficial cumulative impact. Alternative C would add a small adverse increment to this overall cumulative impact.

Alternative D

Recreational Opportunities and Experiences

In alternative D, no changes would be made regarding the types of recreational opportunities and experiences that are available to Colter Bay visitors.

Facilities and Services

Visitors would have an improved range of visitor opportunities and services available at the new visitor center. Visitors would no longer experience waiting lines for the restrooms. The information desk would be approximately the same size as the existing one.

The size of the bookstore in alternative D would be similar to the bookstore size prior to the remodel of the Colter Bay Visitor Center in 2012, but considerably smaller than the bookstore under alternative A. Visitors would experience a smaller merchandise selection and possibly some crowding. The park would work closely with the Grand Teton Association (bookstore operator) during the design phase to ensure an efficient

and functional bookstore space. The changes to the bookstore would result in a minor adverse impact to visitor experience.

Much of the Vernon Collection would be displayed in approximately 2,800 sq ft of museum space within the visitor center (because the visitor center would include collections storage, curation, and exhibits). The opportunity for visitors to view the collection at Colter Bay would have a moderate beneficial impact on visitor experience.

Vehicle Circulation, Wayfinding, and Parking

Under alternative D, no changes to vehicular circulation or wayfinding would be made. Visitors would continue to experience a confusing and disorienting arrival to Colter Bay. Many first-time visitors would continue to stop at the grocery store area first, assuming this is the primary Colter Bay destination. Many visitors would continue to drive from the various destinations within Colter Bay because of the auto-centric design (oversized roads and intersections, and more parking than needed). A relatively small portion of the parking area that is underused would be removed and restored to more natural conditions. The changes to parking and circulation would result in a long-term, beneficial, negligible impact on visitor experience.

Construction Disruptions

Visitors seeking orientation and other visitor services would utilize a temporary visitor facility during demolition of the existing one and construction of the replacement visitor center. The temporary facility would be substantially smaller and there would likely be a noticeable reduction of services provided before the new facility would be operational. The construction phase would take over two years because of the short construction season. Construction-related noise, the presence of machinery and trucks, and the visible construction sites would have short-term adverse impacts on visitor

experience. The construction season generally coincides with the visitor season at Colter Bay and short-term, adverse, moderate impacts to visitor experience would occur.

Removal of the small portion of parking lot northwest of the existing visitor center and subsequent restoration/revegetation would have negligible impacts on visitor experience because there are seldom cars parked in this area.

Cumulative Impacts. Past, present, and reasonably foreseeable actions within Colter Bay would impact the visitor experience the same as alternative A. The impacts of these related actions, in conjunction with the impacts of alternative D, would result in a minor, beneficial, cumulative impact. Alternative D would add a small adverse increment to the overall cumulative impact.

Conclusion. Overall, there would be no change to recreational opportunities and experiences as a result of alternative D. The changes to circulation, wayfinding, and parking would be long term, beneficial, and negligible in intensity. Display of the Vernon Collection at the replacement visitor facility would have an impact to visitor experience that is long term, beneficial, and moderate in intensity. Changes to the bookstore would result in a long-term, minor, adverse impact to visitor experience. The construction-related disturbances of implementing alternative D would have short-term adverse impacts that are moderate in intensity. Past, present, and reasonably foreseeable actions within Colter Bay would impact visitor experience the same as alternative A. The impacts of these related actions, in conjunction with the impacts of alternative D, would result in a minor, beneficial, cumulative impact. Alternative D would add a small adverse increment to the overall cumulative impact.

IMPACTS TO PARK OPERATIONS

Information about park operations was compiled from various sources including Grand Teton National Park staff, National Park Service facilities specialists, and other knowledgeable individuals. The information gathered includes park staffing and maintenance records; campground locations and capacities; and secondary sources such as park environmental assessments, visitor surveys, and other planning documents and research reports. Examples of operational considerations include needs for maintenance, protection, and patrol activities. Other considerations include the disruption to park operations during the implementation phase of the project.

Impact thresholds for NPS operations are defined as follows:

- *Negligible:* Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.
- *Minor:* The effect would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be relatively simple and likely successful.
- *Moderate:* The effects would be readily apparent and would result in a change in park operations in a manner noticeable to staff and the public. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.
- *Major:* The effects would be readily apparent and would result in a change in park operations in a

manner noticeable to staff and the public, and would be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, would be extensive, and their success could not be guaranteed.

Duration

Short-term Impacts. Effects lasting for the duration of construction.

Long-term Impacts. Effects lasting longer than the duration of any construction.

Alternative A (no-action alternative)

Analysis. Under alternative A, NPS operations would be conducted much as they are now. The interpretive staff would continue to work in the visitor center. Storage of lake patrol supplies and interpretive materials would remain conveniently on site in the lower level of the Colter Bay Visitor Center. North District interpretive staff would continue to benefit from the locational efficiency of the visitor center, with close proximity to the areas where interpretive services are provided.

The age, design, and condition of the visitor center building and systems would continue to require an investment in NPS staff time and park funds. The National Park Service would continue to maintain access (shoveling snow from building entrance, restroom area, and roof) and heat to the building, which is not well-insulated, during the winter months. To ensure the safety of the building and museum collections and operation of the water, HVAC, and computer network systems, daily maintenance is required throughout the year. NPS staff would continue to maintain the public restrooms year-round. These restrooms would continue

to present routine maintenance challenges due to their age and because they were designed for lower levels of visitation. The upkeep, energy requirements, and maintenance of the Colter Bay Visitor Center would have a minor adverse impact on park operations.

Alternative A would have long-term, beneficial, and adverse, minor impacts on park operations.

Cumulative Impacts. A past action that would contribute to the cumulative scenario is the replacement of the maintenance facility in the administrative area of Colter Bay. This facility serves as the primary, all-season, maintenance operations and emergency response support facility in the North District. The building was marginally operational for several years prior to its replacement in 2011. The new building provides park staff with a safe and efficient workspace in the North District, better supporting the maintenance and emergency response functions. This action would have a small beneficial impact. The ongoing effort to remove mature lodgepole pine trees for vista management or safety (standing dead trees) would have a negligible adverse impact on park operations. The efforts to remove the trees would occur on a time-available basis, thereby not impacting existing park projects.

The relocation of the Vernon Collection to the Western Archeological and Conservation Center has reduced the amount of NPS staff time and park funds spent on curation activities. The workload reduction allowed the small park curation staff (one Park Curator, plus volunteer staff) to better meet the needs of the park, resulting in a long term, beneficial, negligible impact to park operations.

Alternative A would contribute beneficial and adverse, minor impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative A would have a beneficial, minor cumulative impact.

Alternative A would add a very small adverse increment to this overall cumulative impact.

Conclusion. Alternative A would contribute beneficial and adverse, minor impact to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative A would have a beneficial, minor cumulative impact to park operations. Alternative A would add a very small adverse increment to this overall cumulative impact.

Alternative B (NPS preferred alternative)

Analysis. Under the NPS preferred alternative, the visitor center would be demolished and the site would be converted to a picnic area. A visitor contact station would be constructed at a new location, farther from the waterfront within the project area. The roads and parking areas within the project area would be reconfigured. There would be moderate increases in park staff workload during the planning, design, and construction periods for the park staff involved in these efforts. During the construction period, park staff would continue to operate out of the visitor center and visitor services would not be interrupted. However, the improvements would result in minor to moderate short-term workload increases for park staff involved in the planning, coordination, and management of these actions.

The interpretive staff offices would be in the new visitor contact station. The new location would continue to provide convenient access to the areas where interpretive services are provided. The size of the office and work space would be reduced and efficiencies in park operations would be created, including a consolidated counter for the sale of permits and for general orientation and information. Other efficiencies would include a shared National Park Service and Grand Teton Association break room, fee counting room, staff locker area, and restroom. Interpretive

programs would be moved to the outdoor pavilion area and interpretive and orientation information would be available in the courtyard. Lake patrol supplies and interpretive materials storage would be housed at the new visitor contact station. Compared to the no-action alternative, the NPS preferred alternative would have a negligible adverse impact on the services and functions provided.

Park staff workload associated with building maintenance would be moderately reduced. The new smaller contact station would be more energy efficient and would be completely shut down for seven months of the year, substantially reducing energy and maintenance needs. Since the contact station would be closed in winter, the new vault (or similar) toilets at the picnic area would serve park visitors in winter and would require periodic servicing.

The computer network server would be moved to the Colter Bay NPS operations area. The network server would be housed in a room that meets industry standards and is easier for park staff to access.

The Vernon Collection would be moved to a new collections facility within Grand Teton National Park, the location to be determined in a future environmental planning effort. The new facility would consolidate park museum collections that are scattered throughout the park. The new consolidated storage site would create efficiencies in park operations by reducing the travel time for park staff among the various sites and eliminating redundancies in maintenance activities.

The construction-related impacts on park operations from implementing the NPS preferred alternative would be short term, adverse, and moderate in intensity. The overall impacts from the improvements would be long term, beneficial, and negligible to moderate in intensity.

Cumulative Impacts. A past action that would contribute to the cumulative scenario is the replacement of the maintenance facility in the administrative area of Colter Bay. This facility serves as the primary all-season maintenance, operations, and emergency response support facility in the North District. The building was marginally operational for several years prior to its replacement in 2011. This action would have a small positive impact. The ongoing effort to remove mature lodgepole pine trees for vista management or safety precautions (standing dead trees) would have a negligible adverse impact on park operations. The efforts to selectively remove the trees would occur on a time-available basis, thereby not impacting existing scheduled park projects.

The NPS preferred alternative would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, the NPS preferred alternative would have a short- and long-term, beneficial, and adverse, minor to moderate cumulative impact to park operations. The NPS preferred alternative would add a very small beneficial increment to this overall cumulative impact.

Conclusion. The NPS preferred alternative would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, the NPS preferred alternative would have a short- and long-term, beneficial, and adverse, minor to moderate cumulative impact to park operations. The NPS preferred alternative would add a very small beneficial increment to this overall cumulative impact.

Alternative C

Analysis. Under alternative C, Colter Bay Visitor Center would be demolished and the site would be converted to a picnic area. A

new visitor center would be constructed at a nearby location, farther from the waterfront but within the project area. The roads and parking areas within the project area would be reconfigured. There would be moderate increases in park staff workloads during the planning, design, and construction periods. During the construction period, park staff would continue to operate out of the visitor center and visitor services would not experience interruption. However, the improvements would result in minor to moderate short-term workload increases for park staff involved in the planning and coordination of these actions, and communicating with local communities and park visitors.

There would be minor adverse impacts to park operations associated with locational efficiency. The interpretive staff offices would be relocated to the Colter Bay operations area. The new location would have a minor impact on staff efficiency because staff would have to travel a minimum of 0.5 mile between their new offices and where interpretive services are provided. Storage for boating and interpretive supplies would also be moved to the Colter Bay operations area and additional travel would be required to move stored items.

Park staff workload associated with maintenance of the visitor facility would be moderately reduced. The new smaller visitor center would be more energy efficient and, except for the restrooms, would shut down for the majority of the year, reducing energy needs. Any museum objects that are not tolerant of variable environmental conditions would need to be transported seasonally to a NPS-approved facility. The restroom facilities at the visitor center would remain open during the winter for park visitors and would require regular maintenance and upkeep.

The computer network server would be moved to the Colter Bay NPS operations area. The network server would be housed in

a room that meets industry standards and is easier for park staff to access.

Most of the Vernon Collection would move to a new collections facility within Grand Teton National Park, the location to be determined in a separate environmental planning effort. The Colter Bay visitor center would exhibit a limited number of museum objects; some of which would be transported seasonally to a NPS-approved facility. The new facility would consolidate museum collections scattered throughout the park.

The construction-related impacts on park operations under alternative C would be short term, adverse, and moderate in intensity. The overall impacts from the improvements would be long term, beneficial, and adverse, and minor to moderate in intensity.

Cumulative Impacts. A past action that would contribute to the cumulative scenario is the replacement of the maintenance facility in the administrative area of Colter Bay. This facility serves as the primary all-season maintenance, operations, and emergency response support facility in the North District. The building was marginally operational for several years prior to its replacement in 2011. The building replacement would have a small positive impact. The ongoing effort to remove mature lodgepole pine trees for vista management or safety precautions (standing dead trees) would have a negligible impact on park operations. The effort to selectively remove the trees would occur on a time-available basis, thereby not impacting existing park projects.

Alternative C would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative C would have a short- and long-term, beneficial, and adverse, minor to moderate cumulative impact to park operations. Alternative C would add a very

small beneficial increment to this overall cumulative impact.

Conclusion. Overall, alternative C would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative C would have a short- and long-term, beneficial, and adverse, minor to moderate cumulative impact to park operations. Alternative C would add a very small beneficial increment to this overall cumulative impact.

Alternative D

Analysis. Under alternative D, the Colter Bay Visitor Center would be demolished and a larger replacement visitor center would be built at the same location. There would be moderate increases in park staff workloads during the planning, design, and construction periods. During the construction period, park staff would have to operate out of a temporary visitor center and visitor services would experience some disruption. The planning, design, and construction phases would result in moderate short-term workload increases for park staff involved in the planning and coordination of these actions, and with communicating with local communities and park visitors.

Under alternative D, NPS operations would be conducted much as they are now. The interpretive staff offices would be in the new visitor center. North District interpretive staff would continue to benefit from the locational efficiency of the visitor center, with close proximity to the areas where interpretive services are provided. The convenience of on-site storage of boat patrol supplies and interpretive materials would continue in the new visitor center.

Park staff workloads associated with maintenance of the new visitor center would undergo a negligible reduction. Because the visitor center would be more energy efficient,

energy needs would be reduced even though the facility would be larger. The facility would be temperature controlled year-round because it would be operational for administrative purposes as well as housing the museum collection and computer network server. The restroom facilities at the visitor center would remain open for park visitors throughout the winter and would require regular servicing.

The computer network server would be located in the visitor center in a room that meets industry standards and is easier to access.

The construction-related impacts on park operations under alternative D would be short term, adverse, and moderate in intensity. The overall impacts from the improvements would be long term, beneficial, and negligible in intensity.

Cumulative Impacts. A past action that would contribute to the cumulative scenario is the replacement of the maintenance facility in the administrative area of Colter Bay. This facility serves as the primary all-season maintenance, operations, and emergency response support facility in the North District. The building was marginally operational for several years prior to its replacement in 2011. This action would have a small positive impact. The ongoing effort to remove mature lodgepole pine trees for vista management or safety precautions (standing dead trees) would have a negligible impact on park operations. The efforts to selectively remove the trees would occur on a time-available basis, thereby not impacting existing park projects.

Alternative D would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past, present, and reasonably foreseeable actions on park operations, alternative D would have a cumulative impact to park operations that is short term, adverse, and moderate in intensity. Alternative D would add a very

small adverse increment to this overall cumulative impact.

Conclusion. Overall, alternative D would contribute short- and long-term, beneficial, and adverse, minor to moderate impacts to park operations. Combined with other past,

present, and reasonably foreseeable actions on park operations, alternative D would have a cumulative impact to park operations that is short term, adverse, and moderate in intensity. Alternative D would add a very small adverse increment to this overall cumulative impact.



Kayaking at Colter Bay

CONSULTATION AND COORDINATION

5



CONSULTATION AND COORDINATION

The National Park Service consulted with various agencies, tribes, organizations, and interested persons in preparing this environmental assessment. The process of consultation and coordination is an important part of this project.

INTERNAL SCOPING

Scoping is a process to identify the breadth of issues, actions, alternatives, and impacts to be considered in an environmental document. Scoping also helped to refine the plan/environmental assessment's purpose and need, and determine impact topics to be analyzed. Internal (agency) scoping was conducted by an interdisciplinary team made up of staff from Grand Teton National Park and other professionals from the NPS Denver Service Center. The team met with park staff beginning August 3, 2010, and then throughout the course of the planning process to discuss the purpose, need, and goals for the project; identify preliminary planning issues; formulate alternatives; identify potential environmental impacts and projects that might have cumulative effects; and identify possible mitigation measures. Among the topics discussed were: visitor center functions and operations; maintenance requirements; accessibility; pedestrian and vehicular circulation and wayfinding; parking and the parking lots; condition of the museum; facility sustainability; and organization of services. The team also gathered background information and conducted field visits and site surveys.

EXTERNAL SCOPING

External scoping was conducted to inform the public about NPS visitor services,

facilities, and related infrastructure at Colter Bay and to generate input on the preparation of this plan/ environmental assessment. Public scoping for the plan/environmental assessment began on October 21, 2010, with publication of a scoping newsletter. The newsletter provided background information on the project, preliminary project sideboards, and preliminary planning ideas about what the plan should address, and a comment/response form. A press release regarding initiation of the Colter Bay visitor services plan effort was issued on December 6, 2010. Scoping was also achieved through use of the NPS PEPC website. The comment period for the scoping newsletter ended on January 7, 2011. A total of 26 comments, including 4 from stakeholder organizations, were received during this comment period. Topics and issues raised by the public included the disposition of the Vernon Collection, public access and access for people with disabilities, changes to trails, the area layout, and general improvements needed for the area.

AGENCY CONSULTATION

In accordance with the Endangered Species Act, the National Park Service checked the USFWS website for federally listed special status species in Teton County. As noted in chapter 1 under impact topics considered and dismissed, with the exception of the grizzly bear, gray wolf, Canada lynx, and wolverine, all federally listed and candidate species in the county were dismissed from further analysis.

Section 106 and the State Historic Preservation Office

Under ACHP regulations, a determination of either adverse effect or no adverse effect

must be made by the park for affected NRHP-listed or eligible cultural resources (for this environmental assessment that would include historic structures and cultural landscapes). An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the national register, e.g., diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, Assessment of Adverse Effects). When a determination of adverse effect is made, a memorandum of agreement is executed among the National Park Service, the applicable SHPO or tribal historic preservation officer, and consulting parties, and if necessary, the Advisory Council on Historic Preservation, in accordance with 36 CFR 800.6(b). Measures are identified in the memorandum of agreement that would minimize or mitigate adverse impacts to cultural resources, which would reduce the intensity of impact under the National Environmental Policy Act from major to moderate. A determination of no adverse effect means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the national register.

Based on the actions proposed in the preferred alternative, the park's preliminary section 106 determination for historic structures and cultural landscapes is adverse effect. The adverse effect determination is due to the removal of the NRHP-eligible Colter Bay Visitor Center and the change in the NRHP-eligible cultural landscape characteristics of spatial organization and circulation near the visitor center. An adverse effect determination under 36 CFR Part 800 would require the park to initiate section 106 compliance and enter into a

memorandum of agreement with the Wyoming SHPO. The agreement would discuss how the adverse effect to historic structures and cultural landscapes would be mitigated, such as through photographs and detailed drawings of the impacted resources.

The park sent a letter dated October 12, 2011, to the Wyoming SHPO initiating the section 106 consultation process, including a request to discuss entering into a memorandum of agreement. Once the park has received the concurrence of the Wyoming SHPO with the park's finding of adverse effect, the park would need to enter into section 106 consultation (at 36 CFR 800.11[e]) with the Advisory Council on Historic Preservation. The park would continue to consult with the Wyoming SHPO and the Advisory Council on Historic Preservation under 36 CFR Part 800 until the section 106 compliance process is completed.

As required under the National Environmental Policy Act, park staff invited the Wyoming SHPO and the Advisory Council on Historic Preservation to participate in this environmental planning process (the invitation to participate is separate from the section 106 process as described above). Both organizations were mailed a copy of the scoping newsletter on October 22, 2010. The Wyoming SHPO did not send a response letter. The Advisory Council on Historic Preservation sent a response letter dated July 2, 2010, asking the National Park Service to inform them if any adverse effects to cultural resources were identified during the planning process.

CONSULTATIONS WITH TRADITIONALLY ASSOCIATED AMERICAN INDIAN TRIBES

In 2007, a contractor hired by the National Park Service researched and identified 17 American Indian tribes that have been traditionally associated with Grand Teton

National Park. The tribes identified include: Apache (various groups), Arapaho, Assiniboine Sioux, Blackfoot, Cheyenne, Comanche, Coeur d’Alene, Crow, Eastern Shoshone, Gros Ventre, Kiowa, Nez Perce, Salish-Kootenai (including Flathead, Pend d’Oreille-Kalispel, Chelan, Wentachee, and Entiat), Shoshone-Bannock, Northern Paiute, Teton Sioux, Umatilla (including Cayuse and Walla Walla), and Yakima (including Palouse, Kittita, Klikitat, and Taitnapam).

On March 25, 2011, the park superintendent mailed a letter to the traditionally associated American Indian tribes inviting them to review and comment on the scoping newsletter through the NPS PEPC website. The letter also asked the tribes to consult with the park about the remaining Vernon Collection items being moved to the Western Archeological and Conservation Center in Tucson, Arizona, in October 2011 (initial consultation regarding the move of

the Vernon Collection happened in 2005). A follow-up letter, dated May 16, 2011, was sent to the same tribes with updated information on where to electronically review and comment on the scoping newsletter. A hard copy of the newsletter was also included with the letter. In response to the March 25 correspondence, the park received a letter from the Bishop Paiute Tribe asking the park for the opportunity to collaborate on the interpretation of their items in the Vernon Collection when it is brought back to the park. The park staff did not receive any other written or verbal replies from the tribes regarding the newsletter. Consultation with traditionally associated American Indian tribes will take place in the future when the park starts the planning process to create a new museum collections facility. Consultation will also take place when the park starts the planning process to move the Vernon Collection back to the park.

TABLE 7. AMERICAN INDIAN TRIBES TRADITIONALLY ASSOCIATED WITH THE VERNON COLLECTION

Tribe Name	City	State
Arapaho Tribe of the Wind River Reservation	Fort Washakie	WY
Blackfeet Tribe of the Blackfeet Indian Reservation of Montana	Browning	MT
Campo Band of Diegueno Mission Indians of the Campo Indian Reservation	Campo	CA
Central Council of the Tlingit & Haida Indian Tribes	Juneau	AK
Cherokee Nation	Tahlequah	OK
Cheyenne and Arapaho Tribes	Concho	OK
Cheyenne River Sioux	Eagle Butte	SD
Chinik Eskimo Community (Golovin)	Golovin	AK
Chippewa-Cree Indians of the Rocky Boy's Reservation	Box Elder	MT
Chitimacha Tribe of Louisiana	Charenton	LA
Choctaw Nation of Oklahoma	Durant	OK
Citizen Potawatomi Nation	Shawnee	OK
Comanche Nation	Lawton	OK
Confederate Tribes of the Umatilla Indian Reservation	Pendleton	OR
Confederate Tribes of Warm Springs	Warm Springs	OR
Confederated Salish and Kootenai Tribe	Pablo	MT

TABLE 7. AMERICAN INDIAN TRIBES TRADITIONALLY ASSOCIATED WITH THE VERNON COLLECTION

Tribe Name	City	State
Confederated Tribes and Bands of the Yakama Nation	Toppenish	WA
Crow Creek Sioux Tribe	Fort Thompson	SD
Crow Tribe of Montana	Crow Agency	MT
Death Valley Timbi-Sha Shoshone Band	Death Valley	CA
Duckwater Shoshone Tribe of the Duckwater Reservation	Duckwater	NV
Elko Band of the Te-Moak Tribe of Western Shoshone Indians of Nevada	Elko	NV
Ely Shoshone Tribe of Nevada	Ely	NV
Enterprise Rancheria of Maidu Indians of California	Oroville	CA
Flandreau Santee Sioux Tribe	Flandreau	SD
Forest County Potawatomi Community	Crandon	WI
Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon	McDermitt	NV
Greenville Rancheria of Maidu Indians of California	Greenville	CA
Hannahville Indian Community Tribe of Potawatomi Indians	Wilson	MI
Havasupai Tribe	Supai	AZ
Hoopa Valley Tribe of the Hoopa Valley Reservation	Hoopa	CA
Hopi Tribe of Arizona	Kykotsmovi	AZ
Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation	Escondido	CA
Iowa Tribe of Kansas and Nebraska	White Cloud	KS
Iowa Tribe of Oklahoma	Perkins	OK
Jicarilla Apache Nation	Dulce	NM
Karuk Tribe of California	Happy Camp	CA
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Horton	KS
Kickapoo Tribe of Oklahoma	McCloud	OK
Kiowa Indian Tribe of Oklahoma	Carnegie	OK
Klamath Indian Tribe of Oregon	Chiloquin	OR
La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation	Boulevard	CA
Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin	Hayward	WI
Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin	Lac du Flambeau	WI
Lac Vieux Desert Band of Lake Superior Chippewa Indians	Watersmeet	MI
Laguna Pueblo Council	Laguna	NM
Little River Band of Ottawa Indians	Manistee	MI
Makah Indian Tribe of the Makah Indian Reservation	Neah Bay	WA
Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation	Boulevard	CA
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan	Dorr	MI
Menominee Indian Tribe of Wisconsin	Keshena	WI

TABLE 7. AMERICAN INDIAN TRIBES TRADITIONALLY ASSOCIATED WITH THE VERNON COLLECTION

Tribe Name	City	State
Mesa Grande Band of Diegueno Mission Indians of the Mesa Grande Reservation	Santa Ysabel	CA
Mescalero Apache Tribe	Mescalero	NM
Miami Tribe of Oklahoma	Miami	OK
Modoc Tribe of Oklahoma	Miami	OK
Mooretown Rancheria of Maidu Indians of California	Oroville	CA
Muscogee (Creek) Nation	Okmulgee	OK
Navajo Nation, Arizona, New Mexico & Utah	Window Rock	AZ
Nez Perce Tribe, Idaho (previously listed as the Nez Perce Tribe of Idaho)	Lapwai	ID
North Fork Rancheria Tribal Office	North Fork	CA
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation	Lame Deer	MT
Northwestern Band of Shoshoni Nation of Utah (Washakie)	Brigham City	UT
Northwestern Band of Shoshoni Nation of Utah (Washakie)	Pocatello	ID
Nottawaseppi Huron Band of the Potawatomi, Michigan (formerly the Huron Potawatomi, Inc.)	Fulton	MI
Oglala Sioux Tribe of the Pine Ridge Reservation	Pine Ridge	SD
Omaha Tribe of Nebraska	Macy	NE
Oneida Tribe of Indians of Wisconsin	Oneida	WI
Onondaga Nation of New York	Nedrow	NY
Osage Nation	Pawhuska	OK
Otoe-Missouria Tribe of Indians	Red Rock	OK
Ottawa Tribe of Oklahoma	Miami	OK
Paiute Indian Tribe of Utah	Cedar City	UT
Paiute-Shoshone Indians of the Bishop Community of the Bishop Colony	Bishop	CA
Paiute-Shoshone Indians of the Lone Pine Community of the Lone Pine Reservation	Lone Pine	CA
Paiute-Shoshone Tribe of the Fallon Reservation and Colony, Nevada	Fallon	NV
Pawnee Nation of Oklahoma	Pawnee	OK
Pokagon Band of Potawatomi Indians, Michigan and Indiana	Dowagiac	MI
Ponca Tribe of Indians of Oklahoma	Ponca City	OK
Ponca Tribe of Nebraska	Niobrara	NE
Port Gamble S'Kallum Tribe	Kingston	WA
Prairie Band of Potawatomi Nation	Mayetta	KS
Quileute Tribe of the Quileute Reservation	LaPush	WA
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin	Bayfield	WI
Rosebud Sioux Tribe	Rosebud	SD
Sac & Fox Nation	Stroud	OK
Saginaw Chippewa Indian Tribe of Michigan	Mt. Pleasant	MI
Salt River Pima-Maricopa Indian Community of the Salt River Reservation	Scottsdale	AZ

TABLE 7. AMERICAN INDIAN TRIBES TRADITIONALLY ASSOCIATED WITH THE VERNON COLLECTION

Tribe Name	City	State
San Pasqual Band of Diegueno Mission Indians of California	Valley Center	CA
Santee Sioux Tribe of Nebraska	Niobrara	NE
Sauk-Suiattle Indian Tribe of Washington	Darrington	WA
Seneca Nation of New York	Irving	NY
Seneca-Cayuga Tribe of Oklahoma	Grove	OK
Shawnee Tribe	Miami	OK
Shoshone Tribe of the Wind River Reservation	Fort Washakie	WY
Shoshone-Bannock Tribes of the Fort Hall Reservation of Idaho	Fort Hall	ID
Shoshone-Paiute Tribes of the Duck Valley Reservation	Owyhee	NV
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation	Agency Village	SD
Sisseton-Wahpeton Sioux Tribe	Agency Village	SD
Sitka Tribe of Alaska	Sitka	AK
Sokaogon Chippewa Community	Crandon	WI
Southern Ute Indian Tribe of the Southern Ute Reservation	Ignacio	CO
Spirit Lake Tribe	Fort Totten	ND
Standing Rock Sioux Tribe	Fort Yates	ND
Suquamish Tribe	Suquamish	WA
Te-Moak Tribe of Western Shoshone Indians of Nevada	Elko	NV
Three Affiliated Tribes	Newtown	ND
Timbisha Shoshone Tribe	Death Valley	CA
Ute Indian Tribe of the Uintah & Ouray Reservation	Fort Duchesne	UT
Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah	Towaoc	CO
Wells Band of the Te-Moak Tribe of Western Shoshone Indians of Nevada	Wells	NV
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie)	Anadarko	OK
Winnebago Tribe of Nebraska	Winnebago	NE
Yankton Sioux Tribe of South Dakota	Wagner	SD
Yomba Shoshone Tribe of the Yomba Reservation	Austin	NV
Zuni Tribe of the Zuni Reservation	Zuni	NM

FUTURE COMPLIANCE REQUIREMENTS

Table 8 identifies the specific undertakings of the preferred alternative that would require additional cultural or natural resource compliance before the action can be implemented.

TABLE 8. FUTURE COMPLIANCE REQUIRED FOR IMPLEMENTATION OF SPECIFIC ACTIONS, PREFERRED ALTERNATIVE

Action in Preferred Alternative	Compliance Requirement
Cultural Resources. Vegetation restoration efforts in the Colter Bay area, including revegetation of disturbed areas and institution of erosion control measures	Further consultation with the Wyoming SHPO
Cultural Resources. All actions requiring ground-disturbance activities.	Further consultation with the Wyoming SHPO
Cultural Resources. Demolition of the Colter Bay Visitor Center and design of the new visitor contact station (consulting on viewshed from remaining historic structures in the vicinity).	Further consultation with the Wyoming SHPO
Cultural Resources. Final design of the spatial organization and circulation pattern (e.g., parking area, sidewalks, paths) near the new visitor contact station.	Further consultation with the Wyoming SHPO

AGENCIES AND ORGANIZATIONS RECEIVING A COPY OF THIS DOCUMENT

Agencies and organizations contacted for information or that assisted with identifying important issues, developing alternatives, or analyzing impacts; or that will receive a copy of this document for review and comment are

listed below. American Indian tribes are listed in the previous section and are not repeated here. A list of individuals receiving the document is available at park headquarters.

FEDERAL AGENCIES/ENTITIES

Advisory Council on Historic Preservation
Bureau of Land Management
–Pinedale Field Office
–Rock Springs Field Office
–Wyoming State Office
Bureau of Reclamation
Federal Aviation Administration
Federal Highways Administration
National Park Service
–Yellowstone National Park
Natural Resources Conservation Service
U.S. Army Corps of Engineers, Wyoming
Regulatory Office
U.S. Environmental Protection Agency
U. S. Fish and Wildlife Service

–Jackson Hole & Greater Yellowstone
Visitor Center
–Jackson National Fish Hatchery
–National Conservation Training Center
–National Elk Refuge
–Wyoming Field Office
U.S. Forest Service
–Bridger-Teton National Forest
–Caribou-Targhee National Forest
–Gallatin National Forest
–Grand Targhee National Forest
U.S. Geological Survey, Office of
Environmental Affairs Program

U.S. SENATORS AND REPRESENTATIVES

Rep. Cynthia Lummis
Sen. John Barrasso

Sen. Mike Enzi

STATE AGENCIES

Wyoming Department of Agriculture
Wyoming Department of Environmental
Quality
Wyoming Department of Transportation
Wyoming Extension Office
Wyoming Game and Fish Department
Wyoming Office of Federal Land Policy

Wyoming State Clearinghouse
Wyoming State Fire Marshall
Wyoming State Forester
Wyoming State Historic Preservation Office
Wyoming State Veterinarian
Wyoming Travel & Tourism Board

STATE AND LOCAL ELECTED OFFICIALS

Governor, State of Wyoming
Mayor, Town of Jackson
Rep. Keith Gingery
Rep. Ruth Ann Petroff
Rep. Jim Roscoe
Sen. Leland Christensen
Sen. Dan Dockstader

LOCAL AND REGIONAL GOVERNMENT AGENCIES

Jackson Hole Airport
Jackson Town Council
Jackson Town Administrator
Teton Conservation District

Teton County
–Board of County Commissioners
–Historic Preservation Board
–Planning and Development

ORGANIZATIONS AND BUSINESSES

Audubon Wyoming
Earth Friends
Friends of Pathways
Grand Teton Association
Grand Teton Lodge Company
Grand Teton National Park Foundation
Greater Yellowstone Coalition
Hatchet Resort
Headwaters Lodge & Cabins at Flagg Ranch
Jackson Hole Bird Club
Jackson Hole Chamber of Commerce
Jackson Hole Conservation Alliance
Jackson Hole Historical Society
Jackson Hole Wildlife Foundation
Lost Creek Ranch
National Museum of Wildlife Art
National Wildlife Foundation
National Trust for Historic Preservation

Native Plant Society
Northern Rockies Conservation Cooperative
Pinto Ranch
Sierra Club, Wyoming Chapter
Signal Mountain Lodge
Snake River Audubon Society
Teton Science Schools
Teton Valley Trails & Pathways
The Art Association
The Hole Hiking Experience
The Murie Center
TVRC Education Foundation
Wilcox Gallery
Wyoming Outdoor Council
Wyoming Heritage Society
Wyoming Wildlife Federation
Yellowstone Association

LOCAL LIBRARIES

Teton County Library
University of Wyoming Library
Wyoming State Library

MEDIA

Cowboy State News Network
Jackson Hole News and Guide
Jackson Hole Weekly
Planet Jackson Hole
T&T Reporting
Wyoming Public Radio



APPENDIXES, REFERENCES, AND PREPARERS



APPENDIX A: COST ESTIMATES

This appendix provides cost estimate information for implementing the Colter Bay Visitor Services Plan alternatives. Two types of estimates are presented: construction costs (for initial improvements) and long-term lifecycle costs. Both types are Class C (general) and are in 2011 dollars.

The planning team worked closely with the NPS Construction Management Division

to develop a plan that is consistent with NPS fiscal constraints and desire to rethink how the National Park Service provides critical visitor services. The Construction Management Division chief attended the preferred alternative workshop and provided guidance on the reasonable cost range for a preferred alternative given the current and expected future constraints of federal budgets.

Construction Cost Estimates

TABLE A-1. CONSTRUCTION COST ESTIMATES FOR THE COLTER BAY VISITOR SERVICES PLAN ALTERNATIVES

	Alternative A: (No-action Alternative)	Alternative B (NPS Preferred)	Alternative C	Alternative D
Critical Repairs to Existing Visitor Center	\$789,000 ²	\$0 ³	\$0	\$0
Replacement Visitor Facility		\$3,330,000	\$6,590,000	\$12,400,000
Visitor Facility Site Work and Utilities		\$660,000	\$583,000	\$622,000
Demolition of Existing Visitor Center		\$300,000	\$300,000	\$300,000
Road, Parking, and Trail Improvements plus Stormwater Retention/Treatment	\$3,970,000 ⁴	\$4,559,000 ⁵	\$6,421,000	\$2,767,000
Indoor and/or Outdoor Exhibits, as applicable		\$250,000	\$1,800,000	\$2,990,000
Pedestrian Overlook Near Lakeshore		\$76,000	\$78,000	
Picnic Area and Double Vault (or similar) Toilet, if Applicable		\$276,000	\$188,000	
Storage and Computer Hub at Colter Bay Operations Area		\$105,000	\$280,000	
Total	\$4,759,000	\$9,556,000	\$16,240,000	\$19,079,000

² The deferred maintenance for the Colter Bay Visitor Center is \$2,610,000 (FMSS 2011). The above cost figure is only for critical repairs to keep the visitor center operational.

³ Since alternatives B, C, and D would replace the Colter Bay Visitor Center, the current deferred maintenance would be reduced to zero dollars.

⁴ This is the deferred maintenance figure for parking, road, and trail improvements within the study area.

⁵ Alternatives B, C, and D would reduce the existing deferred maintenance to zero dollars.

Life-cycle Cost Estimates

This section summarizes life-cycle cost estimates that were developed to evaluate the *long-term* cost implications of the Colter Bay Visitor Services Plan alternatives. The life-cycle costs summarized below include not only construction costs for Colter Bay initial improvements (see preceding section), they also include annual maintenance and operations costs, staffing costs, costs for

periodic replacement of components such as roofs and exhibits, and construction costs for future phases or actions (e.g., a future museum collection/exhibit facility in an alternate park location in alternatives B and C, and interpretive offices at the Colter Bay operations area in alternative C). The lifecycle costs were evaluated over a 40-year period, consistent with the Energy Independence and Security Act of 2007.

TABLE A-2. 40-YEAR LIFECYCLE COST ESTIMATES FOR THE COLTER BAY VISITOR SERVICES PLAN

	Alternative A: (No-action Alternative)	Alternative B (NPS Preferred)	Alternative C	Alternative D
Initial Construction (see preceding section)	\$4,759,000	\$9,556,000	\$16,240,000	\$19,079,000
New museum collection/exhibit facility at alternate park location		\$4,330,000*	\$4,330,000*	
New NPS interpretive offices at Colter Bay operations area			\$205,000	
Repave roads and parking in out years	\$1,293,000	\$894,000	\$1,420,000	\$1,293,000
Reroof facilities in out years	\$76,000	\$110,000	\$162,000	\$117,000
Refurbish exhibits (indoor and outdoor exhibits at Colter Bay, plus exhibits at new museum facility at alternate park location if applicable) in out years	\$971,000	\$632,000	\$1,254,000	\$1,451,000
Building maintenance	\$1,860,000**	\$1,058,000	\$1,844,000	\$2,793,000
Energy	\$618,000	\$190,000	\$270,000	\$400,000
Staffing***	\$10,647,000	\$10,647,000	\$10,647,000	\$10,647,000
Total	\$20,224,000	\$27,417,000	\$36,372,000	\$35,780,000

*This figure assumes that this facility would be built at a site within the park that already has road access, parking, and utility service.

**This figure corresponds to deferred maintenance costs associated with non-critical repairs.

***Staff numbers were assumed to remain constant regardless of the alternative, consistent with the *Intermountain Region Visitor Center Strategy* (2006), which states that visitor center projects must not require an increase in the base operating budget. Although staff numbers were assumed to remain the same, the duty location within the park of some staff members would likely shift in certain alternatives.

**APPENDIX B: SPACE ALLOCATION BY ALTERNATIVE:
COLTER BAY VISITOR FACILITY**

The table following table lists, for each alternative, the visitor facility *approximate* square footage for each visitor facility function. The square footages for alternative A are estimates because some interior remodeling of the visitor center was underway as of this writing, in association with moving all but a few Vernon Collection items (into two new exhibit cases) temporarily to the Western Archeological and Conservation Center. That is also the reason for inclusion of the pre-2012 condition.

Although they appear to be precise, the square footages for alternatives B, C, and D are also approximate and are for comparison purposes only; they were developed by running National Park Service Construction Program Management space planning facility models in 2011. Square footages will be refined during the design phase for the alternative ultimately approved for implementation.

It is challenging to compare space across the alternatives because certain functions are co-located in some alternatives, but not in others. Also, the square footages for the various functions do not sum to the overall totals because the facility models make an unspecified allowance for “tare” (space devoted to utility systems and utility closets; audiovisual, information technology, and telecom systems⁶; and hallways, stairs, walls, etc.).

In summary, the table is intended to give readers a *general* sense for the overall size of the visitor facility, what functions would be included, and *approximately* how much space would be allocated to various functions.

⁶ In recent facility design at Grand Teton National Park inadequate space has been allotted to audiovisual, information technology, and telecom systems. It is critical that the future design of a Colter Bay visitor facility be adequately sized and meets the latest standards from ANSI/TIA/BICSI, NECA, and other industry standards-making bodies).

FUNCTION	Pre-2012 (for comparison purposes)	ALTERNATIVE A: NO-ACTION ALTERNATIVE (2012)	ALTERNATIVE B: PREFERRED ALTERNATIVE	ALTERNATIVE C:	ALTERNATIVE D:
Public restrooms	525 sq ft	525 sq ft	~1,000 sq ft	590 sq ft	1,130 sq ft
Multipurpose room/"theater"	1,440 sq ft (includes stage, storage, and projection spaces)	1,440 sq ft (includes stage, storage, and projection spaces)	n/a	1,125 sq ft	1605 sq ft
Visitor orient./ lobby	1,379 sq ft	1,379 sq ft	1,000 sq ft	1,140 sq ft	1,350 sq ft
GTA Sales	600–700 sq ft (included in visitor orient./lobby)	1,120 sq ft	650 sq ft	634 sq ft	724 sq ft
GTA storage and office	273 sq ft	273 sq ft	325 sq ft	150 sq ft	150 sq ft
Administrative space	1,796 sq ft	1,796 sq ft	600 sq ft	368 sq ft	688 sq ft
General and interpretive storage	n/a (200 sq ft workroom included in admin space)	332 sq ft	135 sq ft	134 sq ft	259 sq ft
Permit office	130 sq ft (included in admin space)	130 sq ft (included in admin space)	n/a	230 sq ft	200 sq ft
Artist area	160 sq ft	375 sq ft	n/a (at outdoor pavilion)	150 sq ft	380 sq ft
Exhibit space	5,083 sq ft (top level: 2,063 sq ft; lower: 2,616 sq ft; landing: 404 sq ft)	840 sq ft (top level only, landing and lower level may be storage - undetermined)	n/a	1357 sq ft	2,800 sq ft
Visitor facility space— Colter Bay (includes tare)	n/a	n/a	Approx. 4,400 sq ft	9,200 sq ft	12,600 sq ft
Dedicated collections space—Colter Bay	248 sq ft (selected items; included in administrative space)	248 sq ft (selected items; included in administrative space)	n/a (new collection facility approximately 8,100 sq ft elsewhere in park)	n/a (new collection facility approximately 8,100 sq ft elsewhere in park)	5,100 sq ft
Total Space—Colter Bay (includes tare)	12,053 sq ft	12,326 sq ft	Approx. 4,400 sq ft	9,200 sq ft	18,100 sq ft

sq ft = square feet (all square footage figures are approximate)

**APPENDIX C: FEDERAL HIGHWAY ADMINISTRATION REPORT:
COLTER BAY PARKING & TRAFFIC DATA COLLECTION & ANALYSIS,
JULY 2011**

Colter Bay Parking and Traffic Data Collection and Analysis, July 2011

Final Report

Grand Teton National Park



Completed by:

FHWA Federal Lands Highway, November 2011

Background

Grand Teton National Park is preparing a Visitor Services Plan for the Colter Bay area, and this plan includes an evaluation of the safety, size, and circulation of the roads and parking areas in the central Colter Bay visitor services area. FHWA Federal Lands Highway Division conducted a parking demand and occupancy study in order to answer the following:

- 1) Given current and projected parking demand, how many standard and oversize parking spaces are needed to support the preferred alternative for the Colter Bay Visitor Services Plan?
- 2) What other traffic and parking observations and recommendations can help inform the next step (schematic design) for the Colter Bay area?

The traffic and parking data collection incorporated both automated traffic counts and in-person occupancy and duration survey by FHWA and NPS staff July 21-24, 2011. Data was collected to verify, complement, and expand two other data collection efforts that occurred previously by the National Park Service's Denver Service Center (DSC) in August 2010 and by Stephen F. Austin University over July 4th weekend, 2011. The July 21-24, 2011 data collection effort was comprised of several elements:

- 1) Parking Occupancy and Turnover Counts: Surveyors collected parking occupancy and turnover data in the Colter Bay Area
- 2) Traffic Counters: Magnetic Traffic Counters were placed at eight locations for a period of three weeks that overlapped with Occupancy and Turnover Counts.
- 3) Vehicle and Pedestrian Turning Movement Counts: Sample turning movement counts were taken at the main intersection in Colter Bay.

Parking Spaces Needed for the Draft Preferred Alternative for the GRTE Colter Bay Visitor Services Plan

This section documents recommendations for the range of standard and oversized parking spaces needed for the Draft Preferred Alternative for the Colter Bay Visitor Services Plan based on parking and traffic data collection performed in late July, 2011, as well as data collection efforts by Denver Service Center (DSC) and Stephen F. Austin State University. Overall, three data collection efforts were completed that helped inform this analysis:

- 1) *DSC*: Informal parking lot use counts completed by DSC August 2010, Colter Bay Visitor Center area was split into 22 parking areas; the study provided ranges of occupancy by area.
- 2) *University*: Formal parking use counts completed by Stephen F. Austin State University July 4th weekend, 2011, using the same 22 parking areas defined by DSC, hourly occupancy counts were performed over a peak holiday weekend.
- 3) *FHWA*: Formal parking use and traffic counts completed by FHWA-Federal Lands Highways July 21-July 24, 2011 (Pioneer Days weekend), using the same 22 parking areas defined by DSC, 30 minute occupancy counts were performed over the beginning of the weekend

University Results

Looking across both weekends of data collection in July 2011, the peak use day was observed by University researchers on July 3, 2011 at 3pm, when 80% of the spaces were occupied. Therefore, utilizing 427 as the number of currently available spaces, the very high end of the range of total number of parking spaces needed is 341. However, the NPS Management Policy 9.2.4 Parking Areas states:

"Permanent parking areas will not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use."

Since July 3rd would be considered a "peak use day," according to the NPS policy above, it should not be utilized as the design day to size the parking area for Colter Bay. Therefore, this analysis will use the FHWA data collected July 21-24, 2011, since it is more consistent with the policy as an "average weekend day during the peak season of use." This weekend coincided with Pioneer Days, another busy weekend at Grand Teton. However, overall, the occupancies observed were lower than the 4th of July weekend. In addition, FHWA data collection split out occupancy by standard vehicle and oversized vehicle, data that is valuable in refining the parking spaces needed for the Draft Preferred Alternative.

FHWA Results

Table 1 splits the peak hour occupancy in three categories: Overall, Standard, and Oversize Vehicles, which all occurred on different days. The peak hour during the four day data collection effort was on Saturday at 2:30pm, at which 291 combined standard and oversize vehicles were counted in the parking lot. With 427 total spaces available, this is an overall occupancy of 68%. The peak hour for the standard spaces was observed on Sunday at 12:30pm with 247 standard vehicles (including motorcycles) counted at that time. With a baseline of 389 standard spaces, this reflects an occupancy of 63%. The peak hour for oversized vehicles was at a different time, on Thursday at 1pm, with 60 oversized vehicles in the parking lot. With the baseline of 38 oversized spaces available, the oversized vehicle peak occupancy was 157%. The peak hour parking lot use by parking type should be utilized to determine the "high" end of parking spaces needed for the Colter Bay area.

Table 1: Peak hour parking lot use by parking type

	Peak hour/day	Spaces occupied	Total Spaces	% Occupancy
Overall	12:30/Saturday	291	427	68%
Standard	12:30/Sunday	247	389	63%
Oversize	1pm/Thursday	60	38	157%

Source: FHWA Data Collection

To determine the lower range of overall, standard, and oversize parking spaces needed, the four days of data collection, Thursday through Sunday, were averaged by time of day. Table 2 shows the results of this analysis. Over the four days, the overall peak occurred at 1pm, with an average occupancy of 255

(60% occupancy). The standard spaces peak occurred at 2pm, with 219 (56% occupancy), while the oversize spaces peak occurred at 1pm with an average occupancy of 48 (126% occupancy).

Table 2: Average parking lot use by parking type

	Avg peak time	Spaces occupied	Total Spaces	% Occupancy
Overall	1pm	255	427	60%
Standard	2pm	219	389	56%
Oversize	1pm	48	38	126%

Source: FHWA Data Collection

Current Demand

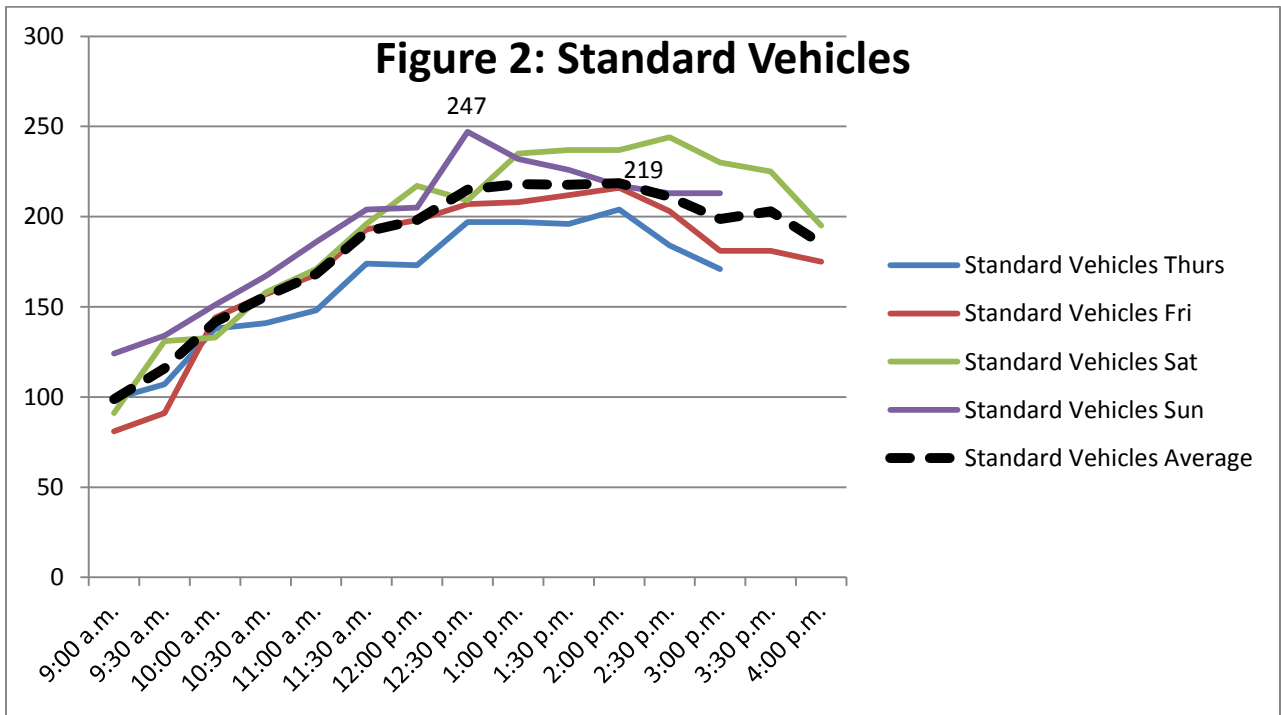
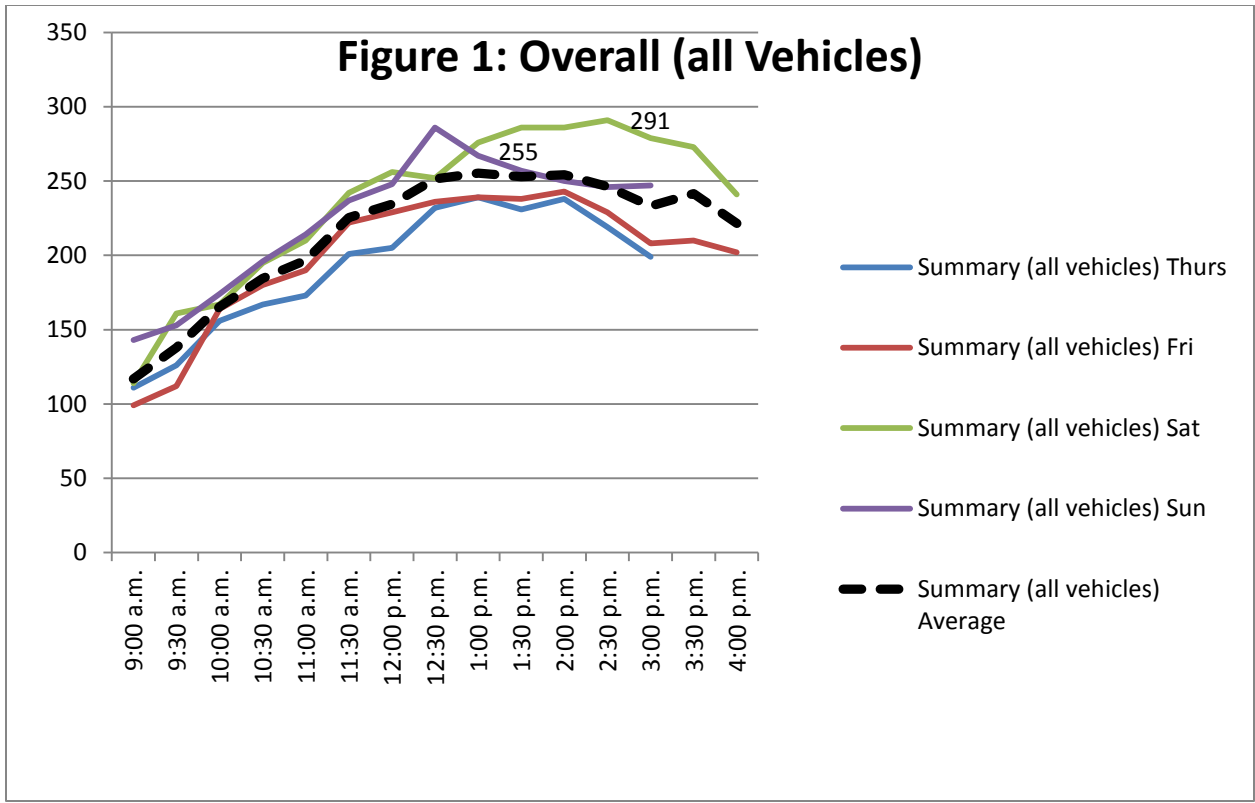
Table 3 offers a range of recommended parking spaces needed in the re-design of the Colter Bay area. This range provides flexibility for designers to better meet the current and future need. Overall, approximately 10-20 more oversized parking spaces are needed, while standard spaces can be reduced by approximately 40%.

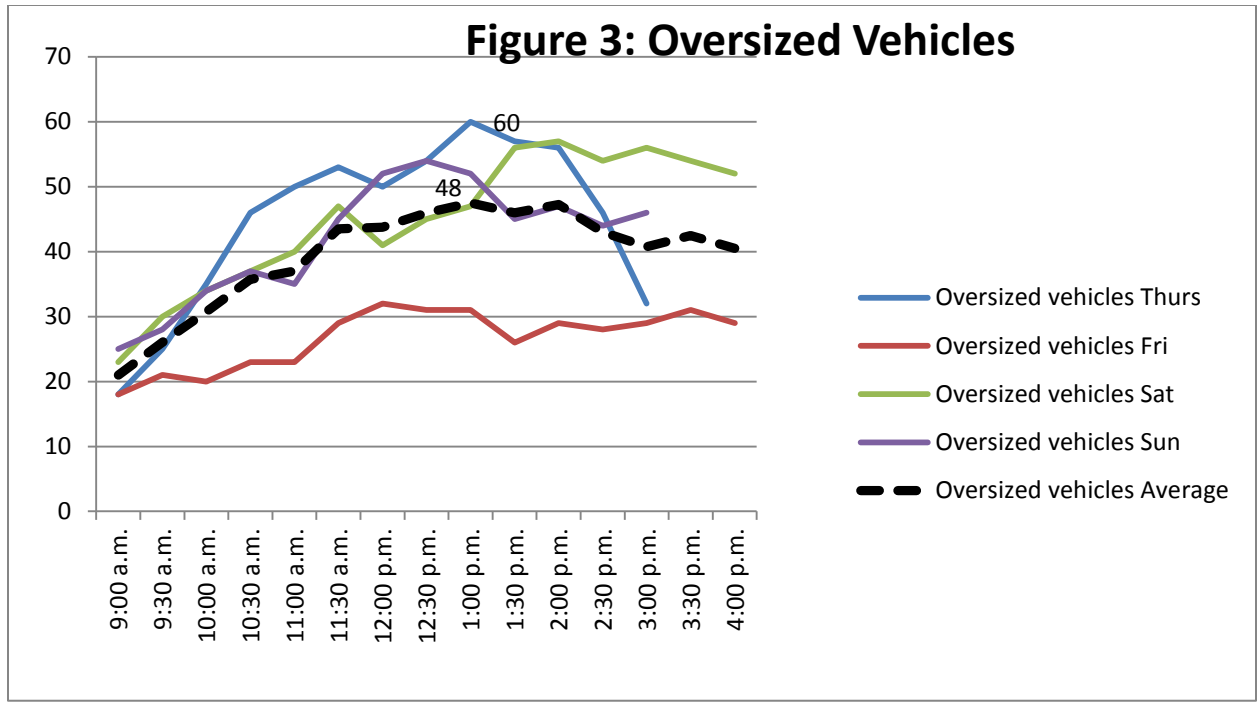
Table 3: Recommendation of Range of Parking Spaces Needed

	Low	High	Existing
Overall	255	291	427
Standard	219	247	389
Oversize	48	60	38

Source: FHWA Data Collection

Please note that in the tables above, the standard and oversize parking recommendations are not supposed to add up to the overall recommendations because the peak under each category occurred at different times. Figures 1, 2, and 3, below, chart the separate days of data collection, as well as the average shown as the dotted line. The peaks are labeled to illustrate the source of the recommended range of parking spaces.





Future Need: 20 year projections

To address future need, Table 4 projects the lower end of recommended parking spaces needed out 20 years to 2031. The average growth rate at GRTE according to the NPS Public Use Statistics website, has been approximately 1% per year over the past 20 years, and for this projection is assumed to remain consistent at 1% per year. The 2031 projections at the bottom of the table generally are consistent within the recommended range out 20 years to 2031.

Table 4: 2011-2031 Projections Utilizing Low Range

	Overall	Standard	Oversize
2011	255	219	48
2012	258	221	48
2013	260	223	49
2014	263	226	49
2015	265	228	50
2016	268	230	50
2017	271	232	51
2018	273	235	51
2019	276	237	52
2020	279	240	52
2021	282	242	53
2022	284	244	54
2023	287	247	54
2024	290	249	55
2025	293	252	55
2026	296	254	56
2027	299	257	56
2028	302	259	57
2029	305	262	57
2030	308	265	58
2031	311	267	59

In conclusion, Table 5 provides a recommended range of parking spaces needed to accommodate the Colter Bay Visitor Services Plan. The low, high, and 20-year projection recommendations can be combined to determine a final range of parking spaces needed. Overall, the 20-year projection of 311 spaces needed reflects a 27% decrease of existing parking spaces. The 20-year projection recommends a 31% decrease of standard spaces, but a 55% increase of oversize spaces.

Table 5: Conclusion Parking Spaces Needed

	Low	High	20-yr Projection	Existing	% change
Overall	255	291	311	427	-27%
Standard	219	247	267	389	-31%
Oversize	48	60	59	38	+55%

Colter Bay Parking and Circulation Observations and Recommendations by Area

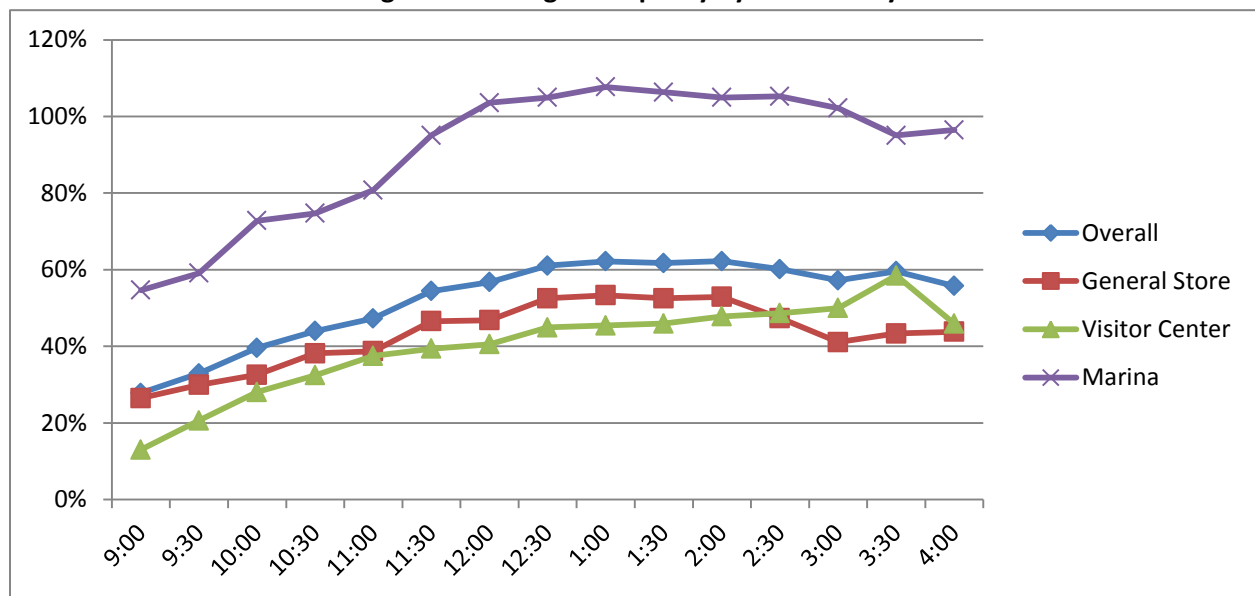
Parking Occupancy and Duration Survey Methodology

Parking occupancy was surveyed in 30 minute intervals during a four hour block (11am-3pm) on four consecutive dates, Thursday through Sunday (July 21-24, 2011). Surveyors recorded the number of available and occupied parking spaces in each zone during this period, including a description of the types of vehicles occupying these parking spaces in each zone. The surveyors also conducted a sample parking duration study on a subset of parking spaces within each zone. The subset included approximately 20 spaces, with about half considered prime parking and half considered less ideal due to their distance to the destination. At 15 minute intervals, surveyors recorded the color of the vehicle and the state and last three digits of the license plate for each space. This provided additional information on turnover frequency and how long visitors remain parked at each location. A higher turnover frequency means that fewer spaces can be used more efficiently to meet peak demand. Four surveyors were required to complete this task. Sample vehicle turning movement data was also collected at the main intersection of the site to augment data from the traffic counters. Turning movement data will help clarify circulation patterns within the site. However, the priority activity for the surveyors was to collect parking occupancy and duration data.

Parking Occupancy, Duration and Turnover Results

The average occupancy of the overall Colter Bay area was 58% over the data collection period. The peak total occupancy in all of the surveyed areas was 315 vehicles on Saturday at 2:30 PM (242 standard vehicles [62% of capacity] and 54 oversized vehicles [142% of capacity]). There is insufficient designated parking for oversized vehicles, including RVs, cars towing boat trailers, and unattended boat trailers. Large vehicles were frequently parked across 3-6 standard vehicle spaces. Figure 4 shows the average occupancy by time of day. Overall, the parking occupancy peaks at approximately 1pm.

Figure 4: Average Occupancy by Time of Day



General Store/Restaurant

The overall average occupancy for the general store/restaurant area over the four days of data collection was 48%. The prime parking spaces in front of the store were frequently occupied by 10:00 AM and remained occupied in waves through the day, however there was plentiful parking available in this area overall. Occasionally a shortage of designated RV parking was observed, however, RVs were still able to park in the area utilizing several standard spaces. The parking directly in front of the restaurant filled up during mealtimes, but like the general store, overall there was plenty of parking to meet demand. Duration/turnover data was collected separately at the general store and restaurant. The average duration was 38 minutes at the general store and 71 minutes at the restaurant. The average duration for the restaurant may be skewed slightly higher due to restaurant employees parking in the area for their entire shift, as was observed during the study. The general store had the highest turnover of the four areas surveyed, 86% of the vehicles were parked in the area for under an hour. Only 61% of the restaurant parkers were parked for under an hour.

Table 6: Average Parking Occupancy

	% Occupancy
OVERALL	58%
General Store/Restaurant	48%
Marina	101%
Visitor Center	45%

Marina

The overall average occupancy for the Marina over the four days of data collection was 101%, the most utilized parking area by far. The Marina had a severe shortage of oversized parking spaces, many vehicles towing boats parked illegally, resulting in the occupancy rate surpassing 100%. The Marina Parking would typically fill by 11:00 AM and remain full through the afternoon. The weekend was distinctly busier than the weekdays. The long average duration of 144 minutes minimized turnover in the lot and exacerbated the parking shortage. The Marina had the lowest turnover of the four areas surveyed, with 32% of the vehicles parked for over two hours. The uses of the parking lot, boating and trailhead, tend to have longer parking times than the general store or visitors center. One recommendation that may help free up the limited parking for the Marina would be to move the trailhead to the Visitor Center area.

Visitors Center

The Visitor Center area's overall occupancy was the lowest of the all the areas at 45%. Although the prime parking spaces directly in front of the Visitor Center would fill up, there was typically plenty of parking further away towards the amphitheatre. This area was also frequently utilized as overflow parking for the Marina, so the oversized spaces were busier on weekends than weekdays. Average

parking duration was 76 minutes, and 64% parked in the Visitor Center area for under an hour. The Visitor Center area parking can be characterized as being relatively short-term parking for Visitor Center users, while also providing much needed overflow parking for oversized vehicles. Tour bus parking was sufficient, as the area accommodated no more than two tour buses at any one time. Tour bus parking at the visitor center was underutilized and occasionally occupied by RVs or standard vehicles.

Table 7: Colter Bay Occupancy Analysis

Total Spaces	389	38	427	180						8	188	132						16	148	77						14	91
Thursday	All			Spaces:			General Store			Visitor Center			Marina			Total			Total								
	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St	Ov	Total	St	Ov	Total	St	Ov	Total	St	Ov	Total	St %	Ov %	Total %			
9:00 a.m.	99	12	113	25%	32%	26%	36	3	39	20%	38%	21%	26	5	31	20%	31%	21%	37	4	43	48%	29%	47%			
9:30 a.m.	107	17	127	28%	45%	30%	39	2	41	22%	25%	22%	29	9	38	22%	56%	26%	39	6	48	51%	43%	53%			
10:00 a.m.	135	20	161	35%	53%	38%	54	6	60	30%	75%	32%	33	9	42	25%	56%	28%	48	5	59	62%	36%	65%			
10:30 a.m.	140	28	173	36%	74%	41%	60	10	70	33%	125%	37%	41	11	52	31%	69%	35%	39	7	51	51%	50%	56%			
11:00 a.m.	148	29	181	38%	76%	42%	69	11	80	38%	138%	43%	39	10	49	30%	63%	33%	40	8	52	52%	57%	57%			
11:30 a.m.	174	33	210	45%	87%	49%	70	15	85	39%	188%	45%	50	9	59	38%	56%	40%	54	9	66	70%	64%	73%			
12:00 p.m.	173	37	216	44%	97%	51%	54	15	69	30%	188%	37%	51	8	59	39%	50%	40%	68	14	88	88%	100%	97%			
12:30 p.m.	197	37	241	51%	97%	56%	65	8	73	36%	100%	39%	55	14	69	42%	88%	47%	77	15	99	100%	107%	109%			
1:00 p.m.	197	42	246	51%	111%	58%	67	15	82	37%	188%	44%	49	12	61	37%	75%	41%	81	15	103	105%	107%	113%			
1:30 p.m.	195	38	246	50%	100%	56%	67	16	83	37%	200%	44%	47	12	59	36%	75%	40%	81	10	97	105%	71%	107%			
2:00 p.m.	204	36	246	52%	95%	58%	74	11	85	41%	138%	45%	54	12	66	41%	75%	45%	76	13	95	99%	93%	104%			
2:30 p.m.	184	32	224	47%	84%	52%	62	9	71	34%	113%	38%	52	6	58	39%	38%	39%	70	17	95	91%	121%	104%			
3:00 p.m.	171	30	207	44%	79%	48%	45	11	56	25%	138%	30%	58	6	64	44%	38%	43%	68	13	87	88%	93%	96%			
3:30 p.m.																											
4:00 p.m.				47%	92%	52%				35%	154%	40%				38%	62%	41%				89%	90%	95%			
Friday	All			General Store			Visitor Center			Marina			Total			Total											
	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St	Ov	Total	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St %	Ov %	Total %			
9:00 a.m.	81	18	99	21%	47%	23%	46	6	52	26%	75%	28%	13	4	17	10%	25%	11%	22	8	30	29%	57%	33%			
9:30 a.m.	91	21	112	23%	55%	26%	46	7	53	26%	88%	28%	18	6	24	14%	38%	16%	27	8	35	35%	57%	38%			
10:00 a.m.	144	20	164	37%	53%	38%	66	4	70	37%	50%	37%	32	7	39	24%	44%	26%	46	9	55	60%	64%	60%			
10:30 a.m.	157	23	180	40%	61%	42%	60	9	69	33%	113%	37%	40	5	45	30%	31%	30%	57	9	66	74%	64%	73%			
11:00 a.m.	167	23	191	43%	61%	45%	50	8	58	28%	100%	31%	52	4	56	39%	25%	38%	65	11	77	84%	79%	85%			
11:30 a.m.	189	29	222	49%	76%	52%	57	11	72	32%	138%	38%	52	4	56	39%	25%	38%	80	14	94	104%	100%	103%			
12:00 p.m.	192	32	230	49%	84%	54%	67	13	86	37%	163%	46%	49	6	55	37%	38%	37%	76	13	89	99%	93%	98%			
12:30 p.m.	203	31	238	52%	82%	56%	81	12	97	45%	150%	52%	55	5	60	42%	31%	41%	67	14	81	87%	100%	89%			
1:00 p.m.	205	31	239	53%	82%	56%	77	12	92	43%	150%	49%	57	5	62	43%	31%	42%	71	14	85	92%	100%	93%			
1:30 p.m.	209	26	238	54%	68%	56%	83	7	93	46%	88%	49%	53	5	58	40%	31%	39%	73	14	87	95%	100%	96%			
2:00 p.m.	213	29	245	55%	76%	57%	89	8	100	49%	100%	53%	55	6	61	42%	38%	41%	69	15	84	90%	107%	92%			
2:30 p.m.	197	28	231	51%	74%	54%	72	6	84	40%	75%	45%	55	7	62	42%	44%	42%	70	15	85	91%	107%	93%			
3:00 p.m.	181	29	210	47%	76%	49%	62	9	71	34%	113%	38%	50	7	57	38%	44%	39%	69	13	82	90%	93%	90%			
3:30 p.m.	181	31	212	47%	82%	50%	64	10	74	36%	125%	39%	54	9	63	41%	56%	43%	63	12	75	82%	86%	82%			
4:00 p.m.	174	29	204	45%	76%	48%	61	10	72	34%	125%	38%	52	9	61	39%	56%	41%	61	10	71	79%	71%	78%			
				50%	75%	53%				39%	119%	45%				40%	34%	40%				92%	98%	93%			
Saturday	All			General Store			Visitor Center			Marina			Total			Total											
	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St	Ov	Total	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St %	Ov %	Total %			
9:00 a.m.	88	23	114	23%	61%	27%	45	7	54	25%	88%	29%	0	0	0	0%	0%	0%	43	16	60	56%	114%	66%			
9:30 a.m.	129	30	161	33%	79%	38%	63	8	72	35%	100%	38%	22	6	28	17%	38%	19%	44	16	61	57%	114%	67%			
10:00 a.m.	130	34	167	33%	89%	39%	47	5	54	26%	63%	29%	34	11	45	26%	69%	30%	49	18	68	64%	129%	75%			
10:30 a.m.	149	37	195	38%	97%	46%	67	10	81	37%	125%	43%	35	9	44	27%	56%	30%	47	18	70	61%	129%	77%			
11:00 a.m.	169	40	214	43%	105%	50%	71	11	83	39%	138%	44%	43	11	57	33%	69%	39%	55	18	74	71%	129%	81%			
11:30 a.m.	195	47	248	50%	124%	58%	78	15	94	43%	188%	50%	45	14	64	34%	88%	43%	72	18	90	94%	129%	99%			
12:00 p.m.	216	41	266	56%	108%	62%	86	11	98	48%	138%	52%	54	14	76	41%	88%	51%	76	16	92	99%	114%	101%			
12:30 p.m.	208	45	263	53%	118%	62%	76	13	90	42%	163%	48%	52	15	76	39%	94%	51%	80	17	97	104%	121%	107%			
1:00 p.m.	234	47	293	60%	124%	69%	93	10	104	52%	125%	55%	56	22	89	42%	138%	60%	85	15	100	110%	107%	110%			
1:30 p.m.	234	56	306	60%	147%	72%	86	16	105	48%	200%	56%	65	22	100	49%	138%	68%	83	18	101	108%	129%	111%			
2:00 p.m.	231	57	308	59%	150%	72%	82	17	104	46%	213%	55%	67	21	103	51%	131%	70%	82	19	101	106%	136%	111%			
2:30 p.m.	242	54	315	62%	142%	74%	85	13	99	47%	163%	53%	71	23	112	54%	144%	76%	86	18	104	112%	129%	114%			
3:00 p.m.	227	56	301	58%	147%	70%	77	15	95	43%	188%	51%	68	24	107	52%	150%	72%	82	17	99	106%	121%	109%			
3:30 p.m.	225	54	297	58%	142%	70%	76	13	89	42%	163%	47%	67	25	110	51%	156%	74%	82	16	98	106%	114%	108%			
4:00 p.m.	195	52	262	50%	137%	61%	63	14	77	35%	175%	41%	55	23	93	42%	144%	63%	77	15	92	100%	107%	101%			
				56%	130%	65%				45%	168%	52%				44%	115%	59%				101%	124%	105%			
Sunday	All			General Store			Visitor Center			Marina			Total			Total											
	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St	Ov	Total	St	Ov	Total	St %	Ov %	Total %	St	Ov	Total	St %	Ov %	Total %			
9:00 a.m.	124	25	149	32%	66%	35%	46	8	54	26%	100%	29%	20	9	29	15%	56%	20%	58	8	66	75%	57%	73%			
9:30 a.m.	134	28	162	34%	74%	38%	48	11	59	27%	138%	31%	23	9	32	17%	56%	22%	63	8	71	82%	57%	78%			
10:00 a.m.	151	33	184	39%	87%	43%	48	13	61	27%	163%	32%	32	8	40	24%	50%	27%	71	12	83	92%	86%	91%			
10:30 a.m.	167	36	203	43%	95%	48%	52	15	67	29%	188%	36%	41	10	51	31%	63%	34%	74	11	85	96%	79%	93%			
11:00 a.m.	186	35	221	48%	92%	52%	55	15	70	31%	188%	37%	53	7	60	40%	44%	41%	78	13	91	101%	93%	100%			
11:30 a.m.	204	45	249	52%	118%	58%	79	20	99	44%	250%	53%	45	9	54	34%	56%	36%	80								

Figure 5: Average Parking Duration

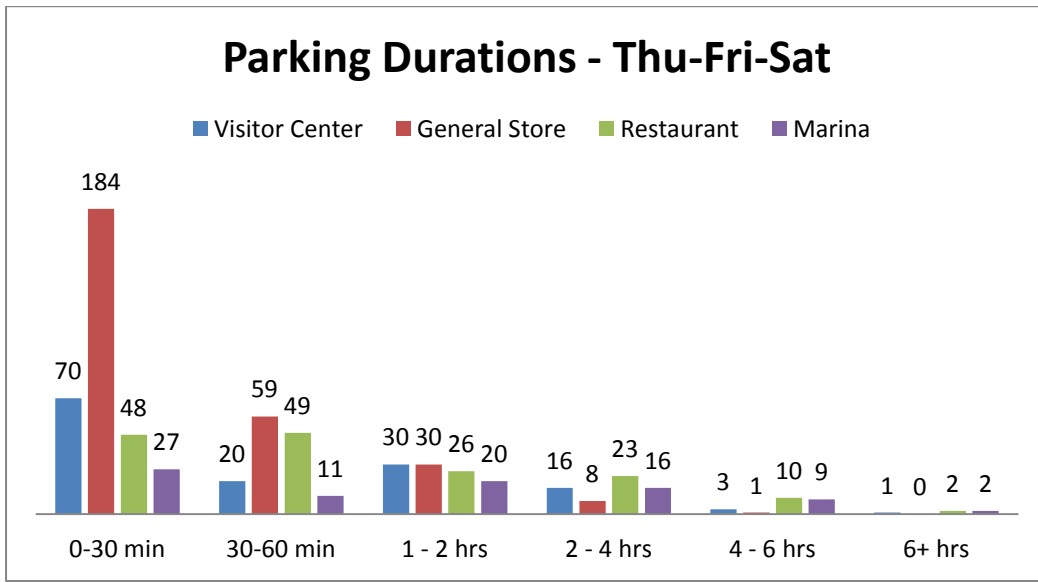
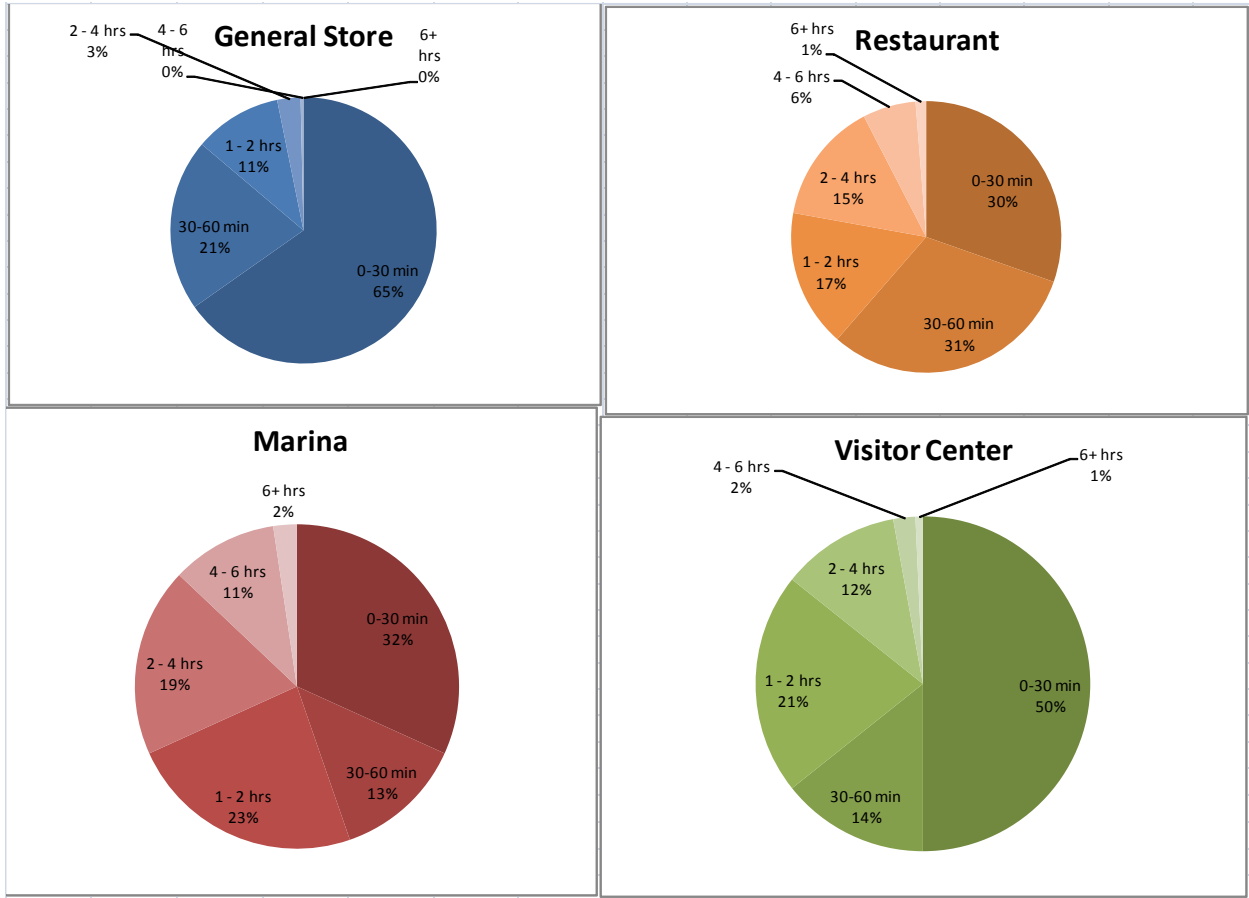


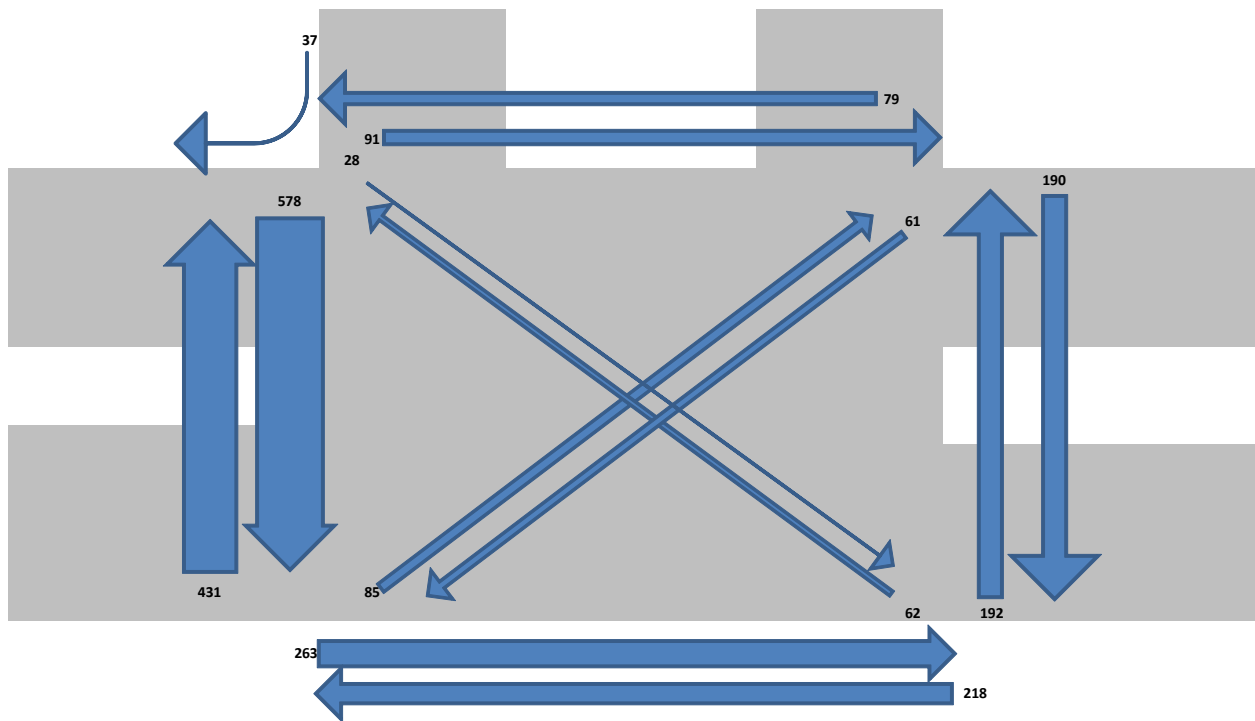
Table 8: Average Parking Duration by Area

	Thursday	Friday	Saturday
General Store Area			
Area 1	35.3	40.2	34.4
Area 2			37.9
Area 3			
Area 4			
Restaurant/Central Area			
Area 5			89.2
Area 6			95.8
Area 7	113.0	113.3	76.1
Area 8	55.7	44.0	66.6
Visitor Center Area			
Area 9			
Area 10			
Area 11			
Area 12			87.2
Area 13			69.7
Area 14	81.3	70.5	82.5
Area 15			
Marina Area			
Area 16			
Area 17			
Area 18			
Area 19	163.3	112.5	180.8
Area 20			
Area 21			
Area 22			223.1

Pedestrian Movements Results

Pedestrian movements were recorded at the large T-intersection on Saturday, July 23rd. For pedestrians, the predominant movement in the intersection was from the grocery store towards the Visitor Center and vice-versa. This movement suggests creating a clear and direct pedestrian connection between the Grocery Store and new Visitor Facility in the site plan. Observations included approximately 50-60 pedestrians per hour walking in the intersection (outside of designated crossing areas), suggesting that the current configuration is confusing for visitors.

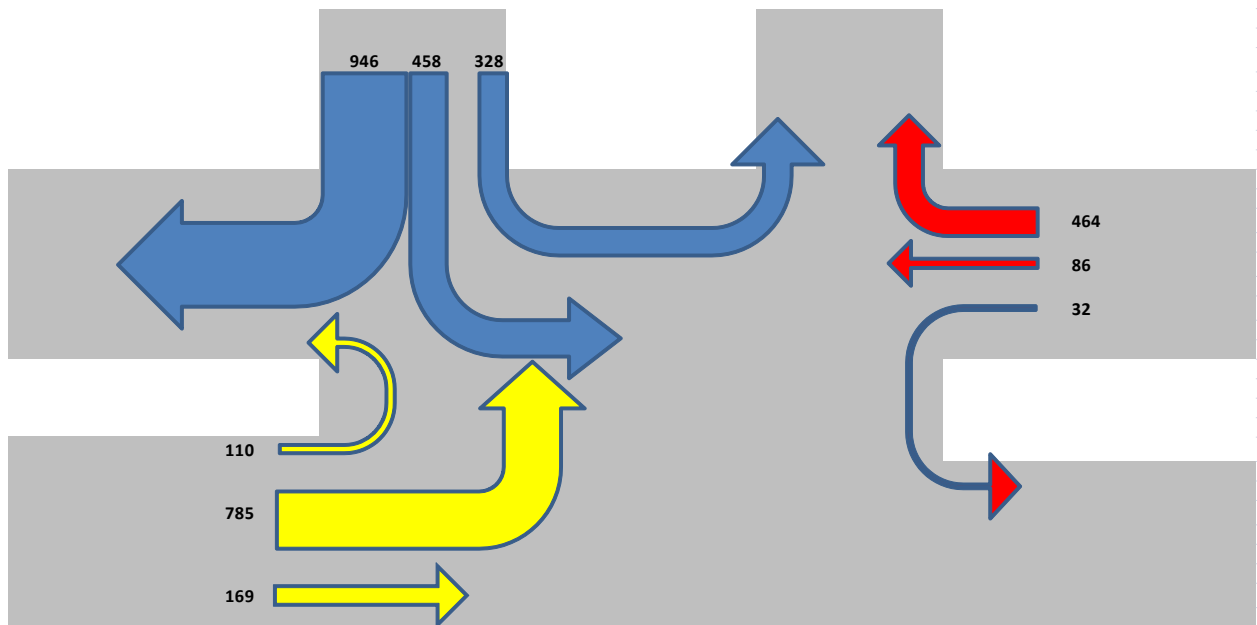
Figure 6: Pedestrian Movements, Colter Bay Intersection, Saturday, July 23, 2011, 9am-4pm



Vehicular Turning Movements Results

Vehicular turning movements were recorded at the large T intersection by the Visitor Center on Thursday and Friday, July 21st and 22nd, 2011. 55% of traffic approaching the intersection turned right towards the Visitor Center, 26% turned left towards the Marina, and 19% made a U-turn back towards the exit. The maximum hourly number of vehicles in the intersection during the two-day turning movements study (Thurs-Fri) was 375 vehicles. If the analysis had continued, Saturday would have likely seen counts near or above 450.

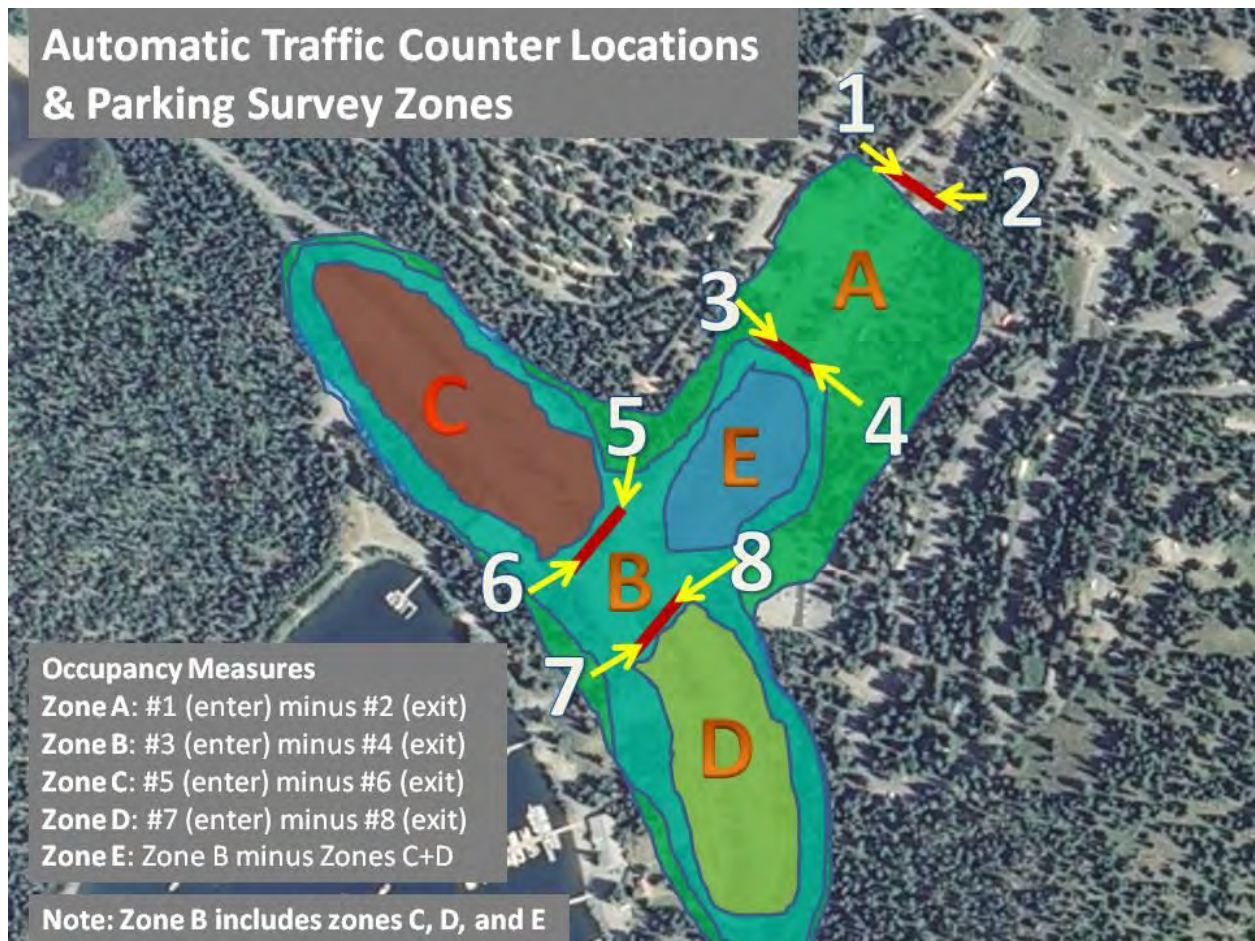
Figure 7: Vehicular Turning Movements, Colter Bay Intersection, Thurs/Fri, July 21 &22, 2011, 9am-4pm, Total Two-Day Turning Movements



Traffic counters Methodology and Results

Automated magnetic traffic counters were placed at eight locations to count vehicles entering and exiting four specific zones within the Colter Bay complex. (See Figure 1) These locations include (1&2) the entrance road north of the general store, (3&4) the entrance road south of the general store, (5&6) the road north of the T-intersection leading to the visitor center and swim beach, and (7&8) the road south of the T-intersection leading to the marina. Traffic cones were placed at several locations to ensure that visitors drove over, and not around, the counters. The counters were installed on Monday July 18th, and started counting at 12 midnight on the 19th; they counted continuously for 3 weeks until at 12 midnight August 9th.

Figure 8: Traffic Counter Locations and Parking Survey Zones



Note: Zones A-D depict the areas for which counters obtained data. The analysis includes additional sub-areas, such as the general store area, by subtracting “A” (all of area) minus “B” (area below general store). As another example, area “E” includes all parking below the general store that is not within “C” or “D”.

Results from Traffic Counters

Figure 9: Traffic Counter Location #7



Unfortunately, counters #1 and #4 malfunctioned and did not produce reliable counts, so those two locations were eliminated from the analysis. Counter #1 collected only 5 days of data. Counter #4 was located on a wide roadway, so a high percentage of vehicles drove around the counter even with cones present, thereby undercounting vehicles. However, the remaining counters did provide valuable data. The average daily traffic can be obtained from the Village Road Entrance Outbound location, counter #2, which resulted in an average of approximately 2,100 vehicles/day. With an average of only 872 vehicles/day counted at counter #3, this suggests that a significant percentage (52%) of vehicles are going to the General Store area, then turning around without going further into the Colter Bay area. Approximately 770 vehicles/day go to the Visitor Center area (enter/exit average), meaning 37% of the total traffic is going to the VC area. For the Marina, 580 vehicles/day were counted on average, meaning that only 28% of the traffic goes to the Marina area. Over the three weeks of data collection, the average daily traffic was not significantly different between weekends and weekdays. However, the weekend that the occupancy and duration survey was completed, traffic was slightly higher than the average at approximately 2,200 vehicles/day, this increase was likely due to Pioneer Days.

Table 9: Traffic Counters Average Daily Traffic

Village Road Entrance		Village Road Middle		Visitor Center		Marina	
Inbound (1)	Outbound (2)	Inbound (3)	Outbound (4)	Inbound (5)	Outbound (6)	Inbound (7)	Outbound (8)
-	2,099	872	-	778	761	558	602

Summary Results and Recommendations

Grand Teton National Park is developing a Visitor Services Plan for the central Colter Bay visitor services area, and this plan includes an evaluation of the safety, size, and circulation of the roads and parking areas in the vicinity of the visitor center, store, marina, and restaurants. To support this effort, FHWA Federal Lands Highway Division conducted a parking demand and occupancy study in order to answer the following:

- 1) Given current and projected parking demand, how many standard and oversize parking spaces are needed to support the preferred alternative for the Colter Bay Visitor Services Plan?
 - The following table provides a recommended range of parking spaces needed to accommodate the Colter Bay Visitor Services Plan. The low, high, and 20-year projection recommendations can be combined to determine a final range of parking spaces needed. Overall, the 20-year projection of 311 spaces needed reflects a 27% decrease of existing parking spaces. The 20-year projection recommends a 31% decrease of standard spaces, but a 55% increase of oversize spaces.

Table 10: Conclusion Parking Spaces Needed

	Low	High	20-yr Projection	Existing	% change
Overall	255	291	311	427	-27%
Standard	219	247	267	389	-31%
Oversize	48	60	59	38	+55%

- 2) What other traffic and parking observations and recommendations can help inform the next phase of design for the Colter Bay area?
 - The average occupancy of the overall Colter Bay area was 58% over the data collection period. The peak total occupancy in all of the surveyed areas was 315 vehicles on Saturday at 2:30 PM (242 standard vehicles [62% of capacity] and 54 oversized vehicles [142% of capacity]).
 - Overall, more oversized parking spaces are needed throughout the site. Large vehicles (RVs, boat trailers) were frequently parked across 3-6 standard vehicle spaces. The Marina is particularly impacted by boat trailers, especially on weekends. The parking crunch at the Marina is exacerbated by a longer parking duration than other areas within the site. One potential recommendation in re-designing the site would be to move the trailhead and trailhead parking closer to the visitor facility to free up more spaces for Marina use. Consider providing pull-through parking. Often, over-sized vehicles parked inefficiently and would have difficulty backing up out of parking spaces.

- From the traffic counts, a surprising percentage of traffic coming into Colter Bay (52%) do not venture beyond the general store area. This is probably due to (a) the general store being the visitor destination, (b) the store being the first destination reached within the central visitor services area, and (c) some visitors parking at the grocery store and walking to other destinations. There is a strong pedestrian movement pattern to and from the general store and visitor center. These results suggest it is important to create a clear and direct pedestrian connection, both visually and physically, between these two destinations to encourage more pedestrians and less vehicular traffic.
- Based on the results of the vehicular turning movement study, a surprising percentage of vehicles (19%) entering the main intersection do a U-turn, suggesting overall confusion in terms of wayfinding. Surveyors also reported frequently seeing confused visitors stopped in the intersection, going the wrong way on the one-way streets, and not understanding who has the right of way when entering the intersection. Signage and wayfinding for vehicles could be improved. Many pedestrians also asked surveyors for directions, suggesting that wayfinding signage at the pedestrian level could also be improved.

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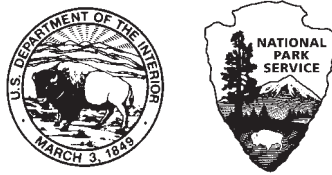
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