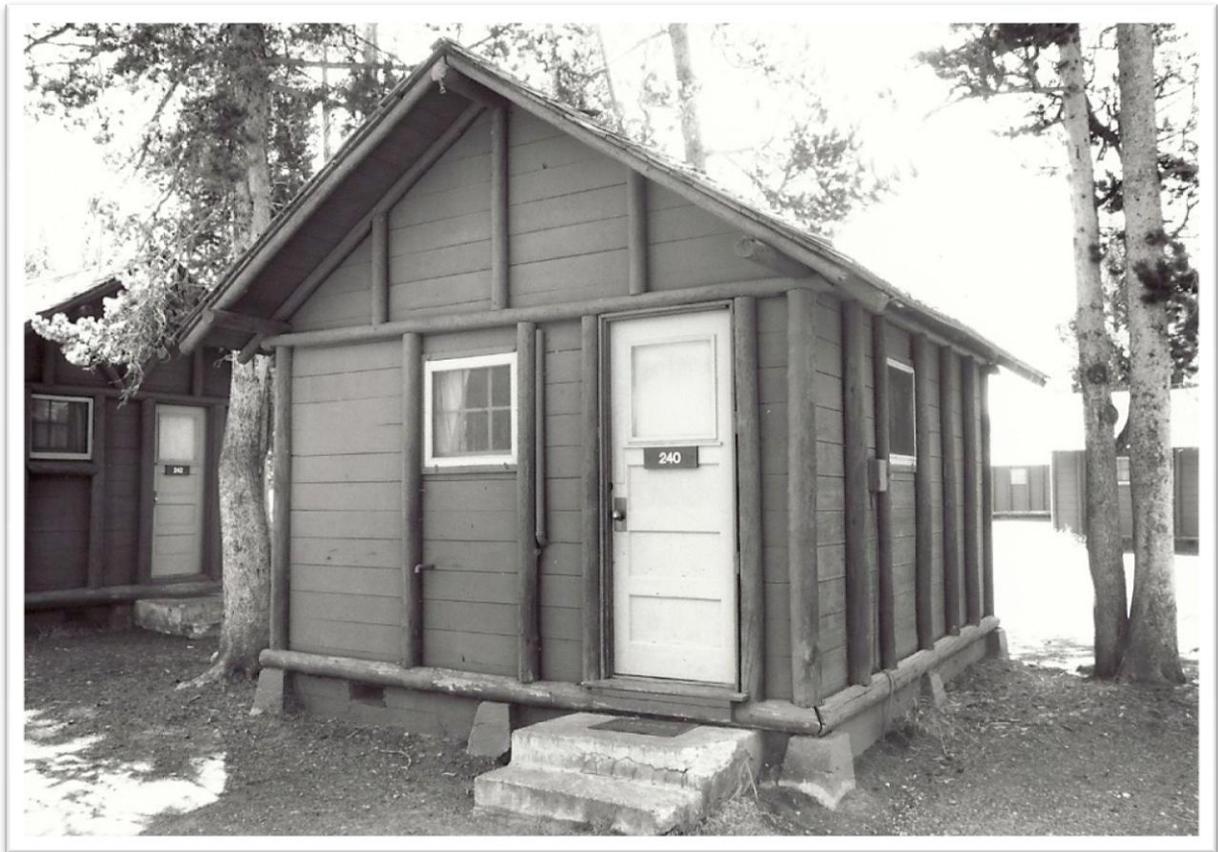




National Park Service
U.S. Department of the Interior
Yellowstone National Park
Wyoming, Montana, Idaho

Old Faithful Cabin Repurposing and Dormitory Construction (Amendment to 1985 Old Faithful Development Concept Plan) Environmental Assessment

January 26, 2012



Old Faithful Cabin Repurposing and Dormitory Construction

Environmental Assessment

Summary

Yellowstone National Park is considering returning 67 cabin units in the Old Faithful Lodge Area to visitor use. Since 1999, cabins previously used for visitor lodging have been used as concessioner employee housing. If Alternative B were implemented, there would be potential to increase approximately 134 overnight visitors each night at Old Faithful during the summer season. To mitigate for the employees who would be displaced, a new dormitory in the Old Faithful Administrative Area would be constructed.

This Environmental Assessment (EA) evaluates three alternatives; Alternative A - No Action, Alternative B – Repurpose Cabins and Construct Dormitory, and Alternative C – Existing Conditions. The no action alternative would follow the decisions of the 1985 Development Concept Plan for the Old Faithful area which calls for removal of all the Old Faithful Lodge Cabins and construction of a new dormitory for concessioner employees in the Old Faithful Administrative Area. Alternative B would amend the 1985 Old Faithful Development Concept Plan decision to remove all Old Faithful Lodge Cabins and addresses repurposing the cabins to provide an increased number of affordable visitor lodging units at Old Faithful and construction of a new concessioner employee dormitory with additional parking, separating employee housing from high visitor use areas, enhancing safety and improving accessibility of pathways to the cabin area, as well as rehabilitating the interior of the cabin units. Alternative C describes the existing conditions if cabins are kept as employee housing and no concessioner employee dormitory was constructed in the Old Faithful Administrative Area.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet objectives of the proposal, 2) evaluates potential issues and impacts to the Park's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. Resource topics included in this document because the resultant impacts may be greater-than-minor include geology and soils; hydrothermal; vegetation and rare plants; wildlife; special status species and Yellowstone species of management concern; historic structures; cultural landscapes; socioeconomics; and visitor use and experience. All other resource topics were dismissed because the project would result in negligible or less impacts to those resources. No major impacts are anticipated as a result of this project. Public scoping was conducted to assist with the development of this document and comments were received, mostly in support of the proposed project.

Public Comment

If you wish to comment on the EA, **you may post comments online at <http://parkplanning.nps.gov/OldFaithfulCabinDormEA>** or mail comments to: Compliance, Old Faithful Environmental Assessment, National Park Service, P.O. Box 168, Yellowstone National Park, Wyoming 82190.

This EA will be on public review for 30 days. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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PURPOSE AND NEED

Introduction

Yellowstone National Park (YNP) is located in the northwest portion of Wyoming and crosses the border into Montana and Idaho. The Park was established by an act of Congress on March 1, 1872 and is managed by the National Park Service. The 2.2 million acres of the Park were “set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people...and to...provide for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition.”

The Old Faithful area is located in the western portion of YNP, in Teton County, Wyoming. It is approximately 30 miles southeast of Yellowstone’s west entrance, and is on the Park’s Grand Loop Road 16 miles south of Madison Junction and 17 miles northwest of the West Thumb Area. The Old Faithful area encompasses the developed land along the Firehole River, surrounded on the west, northeast, and east by lodgepole pine forests and volcanic cliffs; to the south is a lodgepole pine forest regenerating after burning in the 1988 fires. The area contains trails, historic districts and landscapes and thermal features that contribute to the character of the area and provide opportunities for recreation, education, and observation. The area’s numerous and diverse geysers, hot springs, mud pots, and fumaroles, including the iconic Old Faithful Geyser, contributed to Yellowstone’s original designation as the world’s first national Park.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR §1508.9), and NPS Director’s Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

Background

In 1870, before YNP was established, General Henry Washburn led one of the earliest organized expeditions into the Old Faithful area. During this time Washburn and his followers held one of the first discussions on the concept of establishing a Park. Two years later in 1872, YNP became a reality. However, only 300 people visited the first year because travel was difficult. Access was only available by horse or stagecoach and visitor facilities did not exist. By the early 1900s roads were built and accommodations like the Old Faithful Inn, completed in 1904, were constructed. In 1915, automobiles were permitted into the Park which resulted in a drastic increase in automobile traffic and visitors. In the 1950s and 1960s the main highway was located between Old Faithful Inn and Old Faithful Geyser. In the 1960s under the Mission 66 Program an interchange and bypass road were located south of the existing Old Faithful development in an effort to improve traffic flow and visitor experience. With an increasing understanding of natural processes and systems, the National Park Service (NPS) began identifying strategies for lessening the encroachment of facilities on thermal features.

The 1974 Master Plan directed that overnight development be removed from Old Faithful and converted into a day-use only area; however, the plan was never fully implemented and some decisions were modified with the 1985 Old Faithful Development Concept Plan (DCP). One of the two strategies established by YNP in the DCP was to first decrease encroachment on prime resources by removing development from proximity to the Upper Geyser Basin. The other strategy was to provide for increased visitation. The DCP proposed removing all of the Old Faithful Lodge Cabins and restoring the area to a natural condition. The plan also proposed

constructing five dormitories in the administrative area, three of which have been constructed. In the 27 years that have passed since the 1985 DCP was approved, management direction based on visitor comments, discussions with advocacy groups and financial priorities has resulted in these cabins not being removed to date. The exterior of the cabin units contribute to the historic district and landscape and provide affordable lodging for visitors during the summer season. The interiors of the cabin units were upgraded in the 1960s with faux wood paneling and therefore lack historic integrity and are incompatible with the era of construction.

The Old Faithful Lodge Cabin units are located behind and to the east of Old Faithful Lodge. There are a total of 71 cabin buildings (163 units) of these 43 buildings (96 units) are currently used for visitor lodging and consist of "frontier cabins" with a private bath and "budget cabins" with a common bath. The other 28 cabin buildings (67 units) are currently used as concessioner employee housing. The cabin units are reflections of the Shaw & Powell Camping Company which established the original units on this site in 1913, and consisted of tent-top cabins with wooden bottoms. In 1917, the Shaw & Powell Camping Company became the Yellowstone Park Camping Company when the Shaw & Powell Company merged with the Wylie Camping Company. In 1920, Howard Hays bought the company and renamed it the Yellowstone Park Camps Company. Vernon Goodwin and Harry Child purchased the company in 1924 and ran it under the name "Vernon Goodwin Company" until 1928 when Harry Child bought the entire company and named it Yellowstone Park Lodge and Camps Company. In 1936, some six individual companies owned by Child and others were consolidated into one organization: the Yellowstone Park Company. It operated until 1966, when it was sold to the Goldfield Corporation. Goldfield held it only a short time and then sold it to General Hosts Corporation, which operated it through 1979 under the name Yellowstone Park Company. In 1979, the National Park Service purchased all of General Hosts Corporation's interest in Yellowstone and entered into a contract with TW Recreational Services, Inc. The contract required the company to repair and maintain assigned facilities and to provide lodging, food and beverage, retail, and other services. Since that time at least three other companies have operated these rights, including TW Recreational Services, Inc., Amfac Parks and Resorts, and today's Xanterra Parks & Resorts (Whittlesey 2006).

Visitor surveys have shown that approximately 90 percent of Park visitors spend time at Old Faithful. Of all visitors staying in Park lodging, 35 percent stayed in the Old Faithful area, more than any other location in the Park. The response given for what visitors liked least about their lodging experience was that lodging was too expensive (University of Idaho 2006). The main purpose of the proposed project is to provide for an increased number of affordable visitor lodging units at Old Faithful. The Old Faithful Lodge Cabins have consistently been one of the most popular lodging accommodations within the Park. One reason for this popularity is that the cabins are some of the least expensive lodging within the Park. Affordable lodging options could be increased by relocating concession employees from cabin units that are intermixed with cabins used for visitor lodging and by placing these employees in a new dormitory, which has been identified as a Park need since 1985. Relocating employees to a dormitory would also work toward separating employee housing from high visitor use areas. The new dormitory would be constructed within the Old Faithful Administrative Area near the Larkspur Dormitory that also houses concessioner employees. Concessioner employees have been housed in these cabin units since 1999 due to the removal of employee cabins when Snowlodge was built as well as the increase in number of employees needed for operations during the summer season.



Figure 1 - Typical Interior for an Old Faithful Lodge Cabin Source-Old Faithful Area Historic Resource Notebook

During the summer season, 839 concessioner and 70 NPS employees live and work at Old Faithful. Approximately 120 concessioner employees live in the 67 cabin units that are adjacent to visitor lodging. Differences in functional use between visitors and employees housed in the area have the potential to cause conflicts between these two user groups. Today, the Old Faithful Village has fewer facilities than in the distant past and represents a patchwork of multiple eras. To date a total of 177 cabin units, the swimming pool and the campground have been removed; 193 cabin units remain.

Purpose and Need

The purpose of the Old Faithful Cabin Repurposing and Dormitory Construction is to improve visitor services, experience, and address safety and accessibility concerns in the Old Faithful Lodge Cabins Area. The proposed project is needed to meet the following objectives:

1. Provide for additional affordable lodging options.
2. Separate employee housing from high visitor use areas to reduce potential conflicts that can arise from incompatible uses.
3. Enhance safety of asphalt pathways that have deteriorated over time.
4. Improve accessibility for visitors using the cabin area.

Old Faithful is the most popular destination for lodging in the Park, for both overnight and day use, and demand for rooms at Old Faithful is higher than anywhere else in the park. Occupancy

rates for rooms are also the highest in the Park at 99.3 percent. Over the past ten years, employee housing has replaced some of the most affordable visitor lodging in the lower Old Faithful Lodge Cabins. Although the 1985 DCP called for removal of the cabins, the lack of lodging for visitors who wish to spend more time in the area and the inability to offer a varied rate structure for lodging requires re-evaluation of the cabins. Currently, only the northern group of cabins remains as visitor lodging; the southern group consists of 67 cabin units serving as employee housing.

Many of these employees moved into these cabins just over a decade ago in 1999, after the construction of the Snowlodge displaced them from cabins that were removed as part of the project. Prior to employees using the cabins, they were still being used for visitor accommodations. The Snowlodge project provided a modern lodging facility with updated rooms and services and removed an older lodge that no longer met the expectations of visitors and had become costly to maintain. The campground at Old Faithful was removed in the late 1960s and was replaced with what is now the east parking lot. A decrease in affordable lodging resulted from the combined effects of the campground and cabin removal in the Old Faithful area.

Public comments received during scoping periods for past projects, along with comments received by Park and concessioner employees from visitors, have indicated a desire for additional affordable accommodations at Old Faithful. Additionally, due to the vast amount of recreational and educational opportunities in the area, many visitors feel the need to stay overnight to be able to experience and enjoy all the area has to offer. An increase in overnight accommodations would provide more visitors the opportunity to spend the night and have more time to experience Old Faithful, the surrounding geyser basins and the Visitor Education Center.

Employees housed in the lower Old Faithful Lodge Cabins are in close proximity to visitors staying in the adjacent cabins. This creates an environment for potential conflict due to incompatible functions inherent to full-time residential use versus overnight visitor use. Employees recreating outside their cabin create noise that is sometimes unwelcome to visitors trying to escape these very things while on vacation. This project seeks to separate uses to improve the visitor experience and meet the needs of the employees.

The walkways in the area have deteriorated over time and need to be repaired and resurfaced. Edges of the asphalt walkways are raveling, and potholes are present in many of the paths. If the cabins are repurposed for visitor lodging, a portion would be made accessible as per the Americans with Disabilities Act, and the American Barriers Act.

Relationship to Other Plans and Policies

The Old Faithful Cabin Repurposing and Dormitory Construction EA refers to other planning and operating procedures for YNP including:

Yellowstone National Park Master Plan (NPS 1974) The Master Plan strives to balance human impacts and preservation of Park natural, cultural, and scenic resources by developing objectives for General Management, Resource Management, Visitor Use, and Interpretation. The plan provides recommendations to convert the Old Faithful area to day-use and to remove non-historic structures and roads around the geyser basin. Many changes from the plan have been implemented, although conversion of the Old Faithful area to day-use only has not occurred.

Old Faithful Development Concept Plan (DCP 1985) The 1985 DCP provides details in carrying out the intent of the 1974 Master Plan. It proposed to decrease encroachment on prime resources through removal of buildings, improved vehicular and pedestrian circulation and orientation, and an identified winter season use area. At the start of the planning process however, it was decided the historic Old Faithful Inn (including its wings) and the Snow Lodge should continue to provide lodging for the foreseeable future, thereby adding back limited overnight use to the Old Faithful area. As for the remainder of overnight lodging, the plan recommended the removal of cabins and the conversion of the Old Faithful area to day-use with overnight facilities to be provided at Grant Village. The 1985 DCP is still considered a valid plan in many regards, and many of the projects have already been implemented. Changes to vehicular circulation near the Upper Gas Station, separation of employee housing from visitor use areas, improvements to wayfinding (visitor orientation to the area), and accessibility improvements as stated in the plan provide direction for future improvements in the area. Alternative B of this plan would amend the decision of the 1985 DCP to remove all of the Old Faithful Lodge Cabins. In this alternative the cabins would remain for visitor use and employees housed in many of these cabins would be relocated to a new employee dormitory that would be constructed per the 1985 DCP in the administrative area.

Yellowstone Statement for Management (NPS 1999) The Statement for Management describes the existing conditions and management objectives for natural resources, adjacent lands coordination, visitor use, cultural resources, and Park operations and planning.

YNP Long-Range Interpretive Plan (2000) The YNP Long-Range Interpretive Plan provides visitor experience goals and primary interpretive themes and follows with recommendations.

YNP Strategic Plan (2005) The Strategic Plan re-evaluates the Park's fundamental mission and what results or outcomes are needed to more effectively and efficiently accomplish that mission. Visitor use discussions from this plan focused mostly on winter use and transportation planning efforts for the future.

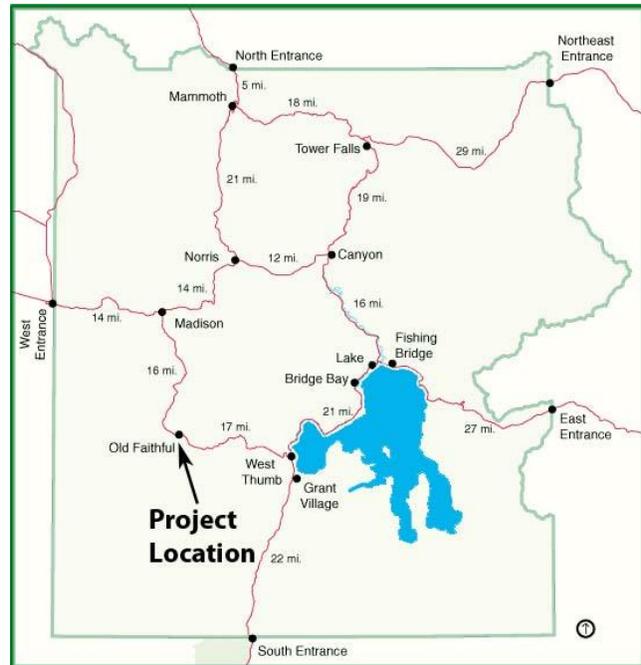


Figure 2 – Project Location

Winter Use EIS (2011) The NPS released a draft EIS that evaluated the impacts of a range of alternatives for managing winter use/access in the interior of YNP in a manner that protects and preserves natural and cultural resources and natural processes, provides a variety of visitor use experiences while minimizing conflicts among various users, and promotes visitor and employee safety. After receiving public input about the DEIS the Park issued a “One-Year Rule” for the winter season (mid-December 2011 to mid-March 2012) to allow more time to address significant public comments about the proposed plan for long-term winter use management of the Park. In the meantime, the NPS has issued a Final Environmental Impact Statement (FEIS) and a Record of Decision (ROD) that selects only the "transition year" portion of the preferred alternative. In addition, the NPS issued a final rule to allow winter use for one year at the same use levels with the same restrictions as the interim rule the park used for the past two seasons. The rule will allow for up to 318 commercially guided BAT snowmobiles and up to 78 commercially guided snowcoaches per day into Yellowstone for the 2011-2012 winter season. The rule also will continue to provide for motorized oversnow travel on the Park's East Entrance road over Sylvan Pass. After issuing the ROD and “One-Year Rule”, the NPS will begin work in early January 2012 to supplement the FEIS. The Park Service intends to have a final supplemental EIS, a ROD, and a long-term regulation in place before the start of the 2012-2013 winter season.

Scoping

Scoping is a process used to identify resources that may be affected by a project proposal, and to determine issues and alternatives to address for achieving the plan while minimizing adverse impacts. Scoping began on November 16, 2011, with a media release and distribution of a scoping letter to inform the public of the proposal to repurpose cabin units and construct a dormitory at Old Faithful as well as generate input on the preparation of this environmental assessment. Scoping letters were mailed to 169 interested individuals, organizations, state and federal agencies, and affiliated Native American tribes. Scoping information was also posted on the Park's Planning, Environment, and Public Comment (PEPC) website. During the 36-day scoping period, 44 public responses were received which included 83 comments. More information regarding scoping and Native American consultation can be found in the Comments and Coordination section of this EA.

Impact Topics Retained For Further Analysis

Impact topics for this project were identified on the basis of federal laws, regulations, and orders; *NPS 2006 Management Policies*; and NPS knowledge of resources at YNP. Impact topics that are carried forward for further analysis in this EA include:

Geology and Soils	Historic Structures
Hydrothermal Resources	Cultural Landscapes
Vegetation and Rare Plants	Socioeconomics
Wildlife	Visitor Use and Experience
Special Status Wildlife Species and Yellowstone Species of Management Concern	

Impact Topics Dismissed From Further Analysis

In this section, the NPS evaluates all potential impacts by considering the direct, indirect, and cumulative effects of the proposed action on the environment, along with connected and cumulative actions. Impacts are described in terms of context and duration. The context or extent of the impact is described as localized or widespread. The duration of impacts is described as short-term, ranging from days to three years in duration, or long-term, extending up to 20 years or longer. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The NPS equates “major” effects as “significant” effects. The identification of “major” effects would trigger the need for an EIS. Where the intensity of an impact could be described quantitatively, the numerical data is presented; however, most impact analyses are qualitative and use best professional judgment in making the assessment.

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

In this section of the EA, NPS provides a limited evaluation and explanation as to why some impact topics are not evaluated in more detail. Impact topics are dismissed from further evaluation in this EA if:

- they do not exist in the analysis area, or
- they would not be affected by the proposal, or the likelihood of impacts are not reasonably expected, or
- through the application of mitigation measures, there would be minor or less effects (i.e. no measurable effects) from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Due to there being no effect or no measurable effects, there would either be no contribution towards cumulative effects or the contribution would be low. For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct and indirect, and cumulative effects is presented.

Historic and Prehistoric Archeological Resources

In addition to the National Historic Preservation Act, NPS’s Director’s Order-28A Archeology affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of archeological resources inside units of the National Park System. Archeological resources are nonrenewable and irreplaceable, so it is important that all management decisions and activities throughout the NPS reflect a commitment to the conservation of archeological resources as elements of our national heritage.

Most of the historic and prehistoric archeological sites within the Old Faithful area have been or are currently being evaluated for eligibility for listing on the National Register of Historic Places. The three unevaluated sites are located within thermal areas, eroding out of the river bank, and within the sludge ponds of the current sewer system and would not be impacted by current or

future projects. No archeological sites were located during the 2009 OWSA pedestrian inventory within the area proposed for the construction of the new employee dormitory in the Old Faithful Administrative Area. Therefore, the proposed project area is not expected to contain archeological deposits; however, appropriate steps would be taken to protect any archeological resources that are inadvertently discovered during construction. Because the project would not disturb any known archeological sites, the effect of the project on archeological resources is expected to be negligible; therefore this topic has been dismissed from further analysis.

Park Operations

Parks must consider the potential effects of proposed actions on overall park operations. Construction of a new concessioner employee dormitory would separate employee housing from visitor lodging as well as provide an increased number of affordable visitor lodging units at Old Faithful. All operations and maintenance for the proposed dormitory would be conducted by the park concessioner assigned these facilities. No work would be completed by NPS staff. All impacts to park operations would be negligible; therefore this topic has been dismissed from further analysis.

Water Resources

National Park Service policies require protection of water quality consistent with the Clean Water Act. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." To meet this goal, the U.S. Army Corps of Engineers has been charged with evaluating federal actions that result in potential degradation of waters of the United States and issuing permits for actions consistent with the Clean Water Act. The U.S. Environmental Protection Agency also has responsibility for oversight and review of permits and actions that affect waters of the United States.

The proposed project area does not contain surface waters, and is mostly dry, except for periodic runoff during snowmelt and rainstorm events. Water quality, water quantity, and drinking water are not expected to be affected by the project. Because these effects would be considered negligible and short-term, this topic has been dismissed from further analysis.

Wetlands

For regulatory purposes, the term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Executive Order 11990 Protection of Wetlands requires federal agencies to avoid, where possible, adversely impacting wetlands. The 2006 *NPS Management Policies* and the Director's Order O-77-1 Wetlands Protection, mandate that the NPS will strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO-77-1, proposed actions that have the potential to adversely impact wetlands must be addressed in a Statement of Findings for wetlands. No wetlands are located in the immediate project area; a Statement of Findings for wetlands will not be prepared. Because there are no wetlands or waters of the U.S. located within the proposed project area and the proposed action would have no effect on wetlands and other waters of the U.S., this impact topic has been dismissed from further evaluation.

Floodplains

Executive Order 11988 *Floodplain Management* requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. The 2006 *NPS Management Policies* and Director's Order 77-2 *Floodplain Management* will strive to

preserve floodplain values and minimize hazardous floodplain conditions. According to Director's Order 77-2 *Floodplain Management*, certain construction within a 100-year floodplain requires preparation of a statement of findings for floodplains.

The project area for the new employee dormitory is not within a 100-year floodplain; therefore, a statement of findings for floodplains will not be prepared. Because there are no floodplains in the project area, this topic has been dismissed from further analysis.

Museum Collections

According to Director's Order-24 *Museum Collections*, the National Park Service requires the consideration of impacts on museum collections (historic artifacts, natural specimens, and archival and manuscript material), and provides further policy guidance, standards, and requirements for preserving, protecting, documenting, and providing access to, and use of, NPS museum collections. Many of the Park's museum collections are stored in the Heritage and Research Center in Gardiner, Montana, or within one of the visitor centers of the park. The proposed action is consistent with §1.4.7.1 of *2006 NPS Management Policies* and there would be no impacts to museum collections. Because these effects are minor or less, this topic has been dismissed from further analysis.

Air Quality

The NPS has a responsibility to protect air quality under both the 1916 Organic Act and the Clean Air Act. The 1963 Clean Air Act, as amended (42 USC 7401 et seq.) requires federal land managers to protect Park air quality while the *2006 NPS Management Policies* address the need to analyze air quality during Park planning. The Clean Air Act requires superintendents to take actions consistent with their affirmative responsibilities to protect air quality related values in Class I areas. Class I areas include all NPS units designated as national parks with more than 6,000 acres and all national wilderness areas with more than 5,000 acres that were in existence on August 7, 1977, and any other area redesignated as Class I by the governing state or Native American authority. The act also establishes a national goal of preventing any future and remedying any existing man-made visibility impairment in Class I areas. Yellowstone National Park extends into five counties in three states, including Park and Teton in Wyoming, Park and Gallatin in Montana and Fremont in Idaho. None of the five counties have air pollution levels that persistently exceed the national ambient air quality standards and are designated as nonattainment status (EPA, 2011). Impacts derived from this project on air quality would be short-term and negligible in a local and regional context.

There is the possibility of short-term temporary impacts on air quality or visibility in the proposed project area. Construction activities such as hauling materials and operating heavy equipment would result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Any exhaust, emissions, and fugitive dust generated from construction activities would be temporary and localized and would likely dissipate rapidly. Overall, the project could result in a negligible degradation of local air quality, and such effects would be temporary, lasting only as long as construction. The Class I air quality designation for YNP would not be affected by the proposal. Further, because the Class I air quality would not be affected, the proposed actions are consistent with §1.4.7.1 of the *2006 NPS Management Policies*. Because the effects on air quality would be negligible, this topic has been dismissed from further analysis.

Soundscape Management

In accordance with *2006 NPS Management Policies* and Director's Order-47 *Sound Preservation and Noise Management*, an important component of the NPS's mission is the preservation of natural soundscapes associated with national park units (NPS 2006). Natural

soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable varies among NPS units as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

The proposed dormitory construction activity would occur in what can be considered the developed area of Old Faithful in YNP. Existing sounds in this area are most often generated from vehicular traffic, people, wildlife, thermal features and wind. Sound generated by the short-term construction of the employee dormitory and modifications to the cabin units would include an increase in sound from construction crews, equipment such as backhoes, dump trucks, paving equipment, and vehicular traffic. Some temporary displacement of wildlife could occur, but concentrated noise levels would only be expected to appreciably increase in an area that currently has a steady level of vehicular and human activity. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds, and would have a negligible to minor adverse impact on visitors and employees. Further, such negligible or minor impacts of the proposed actions are consistent with §1.4.7.1 of *2006 NPS Management Policies*. Because these effects are minor or less, this topic has been dismissed from further analysis.

Lightscape Management

In accordance with *2006 NPS Management Policies*, NPS strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human-produced light. The NPS would limit the use of artificial outdoor lighting to that which is necessary for basic safety requirements. In addition, NPS would ensure that all outdoor lighting is shielded to the maximum extent possible to keep light on the intended subject and out of the night sky so that the contribution to surrounding light sources would be minimal. Therefore, lightscape management has been dismissed as an impact topic.

Prime and Unique Farmlands

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. Because there would be no effects on prime and unique farmlands, this topic has been dismissed from further analysis.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by the Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. The Park's lands and resources related to this project are not held in trust by the Secretary of the Interior for the benefit of Native Americans. Because there are no Indian trust resources related to this project, this topic has been dismissed from further analysis.

Ethnographic Resources

Discussions with the 26 Native American Tribes associated with YNP to identify Park resource significant to tribes have been ongoing for over 12 years. Although no specific area has been identified many tribes have identified the general importance of thermal water and geyser features, and the various minerals found in the thermal areas as important and to be preserved and protected. To date, no tribe has identified any of the thermal and geyser features as a Traditional Cultural Property important for the maintenance of their tribes' cultural heritage and cultural practices. No additional information on ethnographic resources was obtained during consultation with the tribes for this project. Yellowstone National Park recognizes the significance of the thermal resources in the Old Faithful area and other areas of the Park, and strives to protect them from any further disturbance.

A variety of common plants found throughout the Park have been identified as having been used for food, medicinal and other purposes, many of which are still used today. Some of the plants are located in the Old Faithful developed area and include berries, roots, greens, pine nuts, seeds, bitterroot, chokecherries, wild carrots, wild onions, sage, and mint. Medicinal plants such as sage, "cedar" (Juniper), yarrow, fir, balsam, and mint were gathered and used in teas and to treat bruises, cuts, sores, infections, headaches, and toothaches. Juniper "cedar" was used for purification, prayer, and curing. All of the plants identified are common and are plentiful in many locations within and outside the Park.

Similarly, a wide variety of animal resources have played a large role in the subsistence practices of many Native American people. These animals, such as bison, bear, big horn sheep, elk, antelope, deer, rabbit, and a variety of other smaller mammals are found throughout the park and outside the park in all directions. There are no unique concentrations of ethnographically used animals within the area of the proposed undertaking at Old Faithful. Therefore, this topic has been dismissed from further analysis.

Environmental Justice

Executive Order 12898 *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the new dormitory would be available for concessioner employee housing, the cabin units available for visitor lodging, and the construction workforces not be hired based on their race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities. Because there would be no disproportionate effects, this topic has been dismissed from further analysis.

Climate Change and Sustainability

Although climatologists are unsure about the long-term results of global climate change, it is clear that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. Although these changes would likely affect winter precipitation patterns and amounts in the Park, it would be speculative to predict localized changes in temperature, precipitation, or other weather changes, in part because there are many variables that are not fully understood and there may be variables not currently defined. Therefore, the analysis in this document is based on past and current weather patterns and the potential effects of future climate changes are not discussed further.

Wilderness

The project area has not been recommended for wilderness designation and is not managed by the NPS as wilderness. As per *2006 NPS Management Policies*, regardless of the category of wilderness, NPS “will take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed. Until that time, management decisions will be made in expectation of eventual wilderness designation.” Because the proposed action occurs in a developed area and is not likely to be designated a wilderness area, this topic has been dismissed from further analysis.

ALTERNATIVES

During November 2011, an interdisciplinary team of NPS employees met for the purpose of developing project alternatives. This meeting resulted in the definition of project objectives as described in the *Purpose and Need*, and a list of alternatives that could potentially meet these objectives. A total of three action alternatives and the no action alternative were originally identified for this project. Of these, one of the action alternatives was dismissed from further consideration for various reasons, as described later in this chapter. Two action alternatives and the no action alternative are carried forward for further evaluation in this EA. A summary table comparing alternative components is presented at the end of this chapter.

Alternatives Carried Forward

Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A would follow the plans of the 1985 Development Concept Plan for the Old Faithful area. This plan specified the removal of all cabins within the Old Faithful development. The plan discussed construction of five dormitory buildings and two apartment units within the Old Faithful Administrative Area to increase the number of housing units for employees which were, and still are in short supply. This alternative would remove all 71 (163 units) of the Old Faithful Lodge Cabins as per the decision made in the 1985 DCP (see Figure 6; the visitor use cabins are located north and west of the employee cabins). Displaced employees would be housed in a new dormitory that would be constructed in the Old Faithful Administrative Area south of the Grand Loop Road. Current visitor lodging in the area would be reduced by 43 cabins (96 cabin units). The following text further describes the components of constructing a new dormitory in the Old Faithful Administrative Area:

Construct Dormitory – A new two-story employee dormitory would be constructed in the administrative area (south of the Grand Loop Road) to house up to 144 employees, most of which would be displaced by the repurposing of the cabins to a visitor use function. In order to reduce impacts, it would be decided whether to construct the approximately 80 rooms needed in either a single building or multiple clustered building units. The building layout would be designed for the demographics of the seasonal work force of today, most of which prefer private spaces as compared to common living areas. A few apartment style units are being considered to accommodate concessioner employees in management positions, long-term employees and couples. Much of the building would likely be constructed in modules at an off-site factory, and trucked to the project site to be assembled. There would be no basement constructed and the footings would be kept as shallow as possible. The exterior design would consist of materials and colors to blend with the setting and other buildings of the area. Roofs would be high pitched in order to shed snow buildup in the winter months. The dormitory would be designed to help deter pest management species. The design would strive to incorporate elements that would allow for Leadership in Environmental Engineering and Design (LEED) Certification. The building would be similar in size and scale to the current Larkspur dormitory (a 77-room building) pictured in figure 4. Disturbance of site A or site B for the construction of the dormitory would equal about 35,000 square feet (0.8 acre) of area (Figure 5). The building itself would have a footprint of about 12,000 to 15,000 square feet. The two areas that are being considered for construction of the dormitory are in the same area identified for this use in the 1985 DCP (see figure 5). All permits necessary for this construction project, such as storm water would be obtained.

There would be no basement constructed and the footings would be kept as shallow as

possible. The exterior building design would consist of materials and colors to blend with the setting and other buildings of the area. Roofs would be high pitched in order to shed snow buildup in the winter months. The dormitory would be designed to help deter pest management species. The design would strive to incorporate elements that would allow for Leadership in Environmental Engineering and Design (LEED) Certification. The building would be similar in size and scale to the current Larkspur dormitory (a 77-room building) pictured in figures 4 and 5. Disturbance of site A or site B for the construction of the dormitory would equal about 35,000 square feet (0.8 acre) of area (Figure 5). The building itself would have a footprint of about 12,000 to 15,000 square feet. The two areas that are being considered for construction of the dormitory are in the same area identified for this use in the 1985 DCP (see figure 5). All permits necessary for this construction project, such as storm water would be obtained.

Utilities - The proposed dormitory building would be served by existing utilities near the site, including water, sewer, electric, and gas. Connecting these existing utilities to the new dormitory building would entail excavation and placement of additional underground piping/wiring. Utilities in the cabin area would be replaced in-kind where needed and within the existing disturbed area. The capacity of the existing sewage treatment plan, the water treatment plant, and electrical lines are all adequate for the proposed facilities and would not need to be changed. All refuge containers (dumpsters, trash cans) would be of a design that is bear-proof.

Parking – Construction of a lot that would serve approximately 65 vehicles would occur near the proposed dormitory building. Existing access roads are present within the Old Faithful employee housing area. It is assumed parking spaces would be constructed adjacent to these roads, and the road would become the maneuvering space for the lot. The only new disturbance would be from space needed for the vehicle spaces themselves. It is estimated that approximately 12,000 square feet (0.28 acre) of area would be needed for a capacity of 65 vehicles.

Site Preparation – The existing trees in the project area would be preserved to the greatest extent possible; however if site A is selected, approximately 0.8 acre of mature lodgepole pine forest would be removed during the construction of the dormitory. If site B is selected less than 0.01 acre of mature lodgepole pine forest would be removed. Regardless of the site selected, trees would be left to screen the building and make it less visible from other areas of the development and the Grand Loop Road. All areas disturbed by construction of the new dormitory would be revegetated and recontoured to reflect the style of the native landscape. Native vegetation, rocks, or other natural features would be used, as appropriate. The dormitory would be constructed in accordance with current building and life safety codes.

Temporary Construction Trailer – A temporary construction office (trailer) would be erected in an already disturbed area in the vicinity of the proposed dormitory and within the Old Faithful Administrative Area to provide office space for contractors during construction of the new dormitory. This trailer would be removed following completion of the project.

Hauling of Materials Through the Park – While much of the construction of the dormitory would occur on-site, building modules would likely be constructed off-site outside the Park, then loaded on flatbed trucks to be delivered to the project site. Hauling of these building modules would occur during times that would not impact heavy visitor use traffic (night or shoulder season). Pilot cars would be employed and some limited road closures would occur during deliveries. Other construction material transport would be infrequent and no special accommodations would be needed.

Construction Staging – To implement this alternative, an area within the Old Faithful Administrative Area near the new dormitory building would be used for construction staging,

material stockpiling, and equipment storage. This area would be sited in a previously disturbed area, away from visitor use areas. Portions of the existing parking lots or paved areas may be used for construction purposes as well.

Construction Schedule – This preferred alternative would be implemented when a funding source is secured. The project is anticipated to be completed within 12 months of the start of construction.

This alternative is based on preliminary designs and best information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are only estimates and could change during final site design. If changes during final site design are inconsistent with the intent and effects of the described alternative, then additional compliance would be completed as appropriate.

Alternative B – Repurpose Cabins and Construct New Dormitory

Alternative B consists of using all of the Old Faithful Lodge Cabins as lodging units for visitors during the summer season. A new employee dormitory would be constructed in the Old Faithful Administrative Area (south of the Grand Loop Road) to house up to 144 employees displaced by repurposing the cabins for visitor use. There would be a potential increase of approximately 134 overnight visitors at Old Faithful during the summer season. The following text further describes the components of Alternative B:

Repurpose Cabins – The existing 28 cabin buildings (67 units) that are presently used for concessioner employee housing would have the interiors (Figure 1) rehabilitated, and then used for affordable visitor overnight lodging. Some utility lines may need to be repaired or replaced within the cabin area. Asphalt walkways within the area are old and deteriorating with numerous rough spots, uneven surfaces, raveling edges, and missing pavement. These walkways would be replaced or repaired as part of this project. Pathway safety lighting that is appropriate for the historic district and rustic setting of the cabins will be considered in the design process.



Figure 3 - Existing Old Faithful Lodge Quadruplex Employee Cabin
Source-Old Faithful Area Historic Resource Notebook

Construct Dormitory – A new two-story employee dormitory would be constructed in the administrative area (south of the Grand Loop Road) to house up to 144 employees, most of which would be displaced by the repurposing of the cabins to a visitor use function. In order to reduce impacts, it would be decided whether to construct the approximately 80 rooms needed in either a single building or multiple clustered units. The building layout would be designed for the demographics of the seasonal work force of today, most of which prefer private spaces as compared to common living areas. A few apartment style units are being considered to accommodate concessioner employees in management positions, long-term employees and couples. Much of the building would likely be constructed in modules at an off-site factory, and trucked to the project site to be assembled. There would be no basement constructed and the footings would be kept as shallow as possible. The exterior design would consist of materials and colors to blend with the setting and other buildings of the area. Roofs would be high pitched in order to shed snow buildup in the winter months. The dormitory would be designed to help deter pest management species. The

design would strive to incorporate elements that would allow for Leadership in Environmental Engineering and Design (LEED) Certification. The building would be similar in size and scale to the current Larkspur dormitory (a 77-room building) pictured in figures 4 and 5. Disturbance of site A or site B for the construction of the dormitory would equal about 35,000 square feet (0.8 acre) of area (Figure 5). The building itself would have a footprint of about 12,000 to 15,000 square feet. The two areas that are being considered for construction of the dormitory are in the same area identified for this use in the 1985 DCP (see figure 5). All permits necessary for this construction project, such as storm water would be obtained.

Utilities - The proposed dormitory building would be served by existing utilities near the site, including water, sewer, electric, and gas. Connecting these existing utilities to the new dormitory building would entail excavation and placement of additional underground



Figure 4 – Larkspur Dormitory Front Entrance

pipng/wiring. Utilities in the cabin area would be replaced in-kind where needed and within the existing disturbed area. The capacity of the existing sewage treatment plan, the water treatment plant, and electrical lines are all adequate for the proposed facilities and would not need to be changed. All refuge containers (dumpsters, trash cans) would be of a design that is bear-proof.

Historic Cabin Rehabilitation and Improvements to Interiors – The interior of the cabins presently used for employee housing, would be rehabilitated prior to use by visitors. Renovations to the interior of the cabin units would include new floor coverings, wall coverings, electrical systems, bathroom fixtures, and gas heaters. Minor rehabilitation improvements to some elements of the exterior historic fabric would also be made. Additionally, the non-historic/non-contributing wood paneling would be removed (see figure 1). Lastly, any holes or damage in the rubble foundations, roofs, and windows would be repaired to better seal the structure from rodents. All activities conducted on the structure would be consistent with the *Secretary's Standards for the Treatment of Historic Properties*.

Parking – Construction of a lot that would serve approximately 65 vehicles would occur near the proposed dormitory building. Existing access roads are present within the Old Faithful employee housing area. It is assumed parking spaces would be constructed adjacent to these roads, and the road would become the maneuvering space for the lot. The only new disturbance would be from space needed for the vehicle spaces themselves. It is estimated that approximately 12,000 square feet (0.28 acre) of area would be needed for a capacity of 65 vehicles.



Figure 5 - Areas Considered for a New Employee Dormitory

Site Preparation – The existing trees in the project area would be preserved to the greatest extent possible; however if site A is selected, approximately 0.8 acre of mature lodgepole pine forest would be removed during the construction of the dormitory. If site B is selected less than 0.01 acre of mature lodgepole pine forest would be removed. Regardless of the site selected, trees would be left to screen the building and make it less visible from other areas of the development and the Grand Loop Road. All areas disturbed by construction of the new dormitory would be revegetated and recontoured to reflect the style of the native landscape. Native vegetation, rocks, or other natural features would be used, as appropriate. The dormitory would be constructed in accordance with current building and life safety codes.

Temporary Construction Trailer – A temporary construction office (trailer) would be erected in an already disturbed area in the vicinity of the proposed dormitory and within the Old Faithful Administrative Area to provide office space for contractors during construction of the new dormitory. This trailer would be removed following completion of the project.

Hauling of Materials Through the Park – While much of the construction of the dormitory would occur on-site, building modules would likely be constructed off-site outside the Park, then loaded on flatbed trucks to be delivered to the project site. Hauling of these building modules would occur during times that would not impact heavy visitor use traffic (night or shoulder season). Pilot cars would be employed and some limited road closures would occur during deliveries. Other construction material transport would be infrequent and no special accommodations would be needed.

Construction Staging – To implement this alternative, an area within the Old Faithful Administrative Area near the new dormitory building would be used for construction staging, material stockpiling, and equipment storage. This area would be sited in a previously disturbed area, away from visitor use areas. Portions of the existing parking lots or paved areas may be used for construction purposes as well.

Construction Schedule – This preferred alternative would be implemented when a funding source is secured. The project is anticipated to be completed within 12 months of the start of construction.

This alternative is based on preliminary designs and best information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are only estimates and could change during final site design. If changes during final site design are inconsistent with the intent and effects of the described alternative, then additional compliance would be completed as appropriate.

Alternative C – Existing Conditions

Under Alternative C, a new concessioner employee dormitory would not be constructed. Employees would continue to use the 28 cabin buildings (67 units) for housing. The cabins nearest the lodge would continue to be rented to visitors during the summer season. There would not be an increase in affordable lodging at Old Faithful. The walkways to the cabin units would continue to deteriorate, the interiors would not be rehabilitated and utility lines would remain in current condition.

Should Alternative C be selected, NPS would respond to future needs and conditions of the historic cabins without major actions or changes in present course of action. See Figure 6 below for a figure showing the existing conditions.



Figure 6 - Existing Cabins Used for Employee Housing

Mitigation Measures

The following mitigation measures were developed to minimize the degree and/or severity of adverse impacts and would be implemented during construction of the action alternative, as needed:

General Construction

To minimize the amount of ground disturbance, staging and stockpiling areas would be in previously disturbed sites, away from visitor use areas to the greatest extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.

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 beyond the construction zone as defined by the construction zone fencing.

Fugitive dust generated by construction would be controlled by spraying water on the construction site, if necessary. Any water used for dust control would be taken from fire hydrants in the administrative area, or a source approved by the Park.

To minimize possible petrochemical leaks from construction equipment, the contractor would regularly monitor and check construction equipment to identify and repair any leaks.

To minimize the potential for impacts to Park visitors, variations on construction timing may be considered. One option includes conducting the majority of the work in the shoulder seasons (spring and fall). Another option includes implementing daily construction activity curfews such as not operating construction equipment on busy holiday weekends, or between 6 PM and 7 AM in summer (May – September) to reduce noise impacts to Park visitors and Park employees housed adjacent to the proposed dormitory site. The NPS would determine this in consultation with the contractor.

Construction workers and supervisors would be informed about the special sensitivity of the Park's values, regulations, and appropriate housekeeping.

According to the NPS 2006 *Management Policies*, NPS would strive to construct facilities with sustainable designs and systems to minimize potential environmental impacts. Development would not compete with or dominate the Park's features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity associated with wetlands or hydrothermal processes. To the greatest extent possible, the design and management of facilities would emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The NPS also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology.

Soils and Geology

Topsoil conservation measures would be employed prior to construction to enhance revegetation efforts following the construction phase.

Disturbed soils are more susceptible to erosion and until revegetation takes place, standard erosion control measures such as silt fences and/or sand bags would be used to minimize any potential soil erosion.

Hydrothermal

A hydrothermal assessment would be conducted prior to construction of an employee dormitory to ensure that no changes in hydrothermal systems will occur in the area due to construction. Thermal design considerations, such as pervious pavement for the parking lot, maximum depth of excavation, and use of the alternate location would be dictated by the results of the assessment.

Vegetation and Rare Plants

Revegetation and recontouring of disturbed areas would take place following construction and would be designed to minimize the visual intrusion of the structure and landscape. Revegetation efforts would strive to reconstruct the natural spacing, abundance, and diversity of native plant species. All disturbed areas would be restored as nearly as possible to pre-construction conditions shortly after construction activities are completed. Weed control methods would be implemented to minimize the introduction of noxious weeds. This project would follow Topsoil Retention/Vegetation Guidelines developed for previous projects within the park. Some trees may be removed, but other existing vegetation at the site would not be disturbed to the greatest extent possible.

Any equipment used would be cleaned using NPS protocols for reducing the spread of any exotic or problem species.

Construction workers and supervisors would be informed about special status plant species, such as the Yellowstone sulphur wild buckwheat (*Eriogonum umbellatum* var. *cladophorum*). Contract provisions would require the cessation of construction activities if a species were discovered in the project area. Should this occur, park staff would re-evaluate the situation and implement appropriate contract modifications and protection protocols as required to protect the discovery.

Wildlife

Best management practices would be implemented to protect grizzly bears. Any trash receptacles in the area of the repurposed cabins, or the proposed dormitory would be of a design considered “bear proof”. All outdoor food storage would adhere to park policies already in place to ensure no unattended food sources are available to wildlife.

All contractors and employees would be educated about working in grizzly bear country and briefed on proper food storage and safety measures.

All tree removal activities would occur outside of the migratory bird nesting season (May 15 – August 15).

Soundscapes and Air Quality

To reduce noise and emissions, construction equipment would not be permitted to idle for more than 10 minutes while not in use according to the Superintendent’s Compendium, based on CFR 36 § - 5.13 Nuisances.

Cultural Resources

Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of the discovery and the Park would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.

The NPS would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction.

Alternatives Considered and Dismissed

The following alternative was considered for project implementation, but was ultimately dismissed from further analysis. Reasons for dismissal are provided in the following alternative description.

Addition of a Campground to the Old Faithful Area – This alternative would construct a campground in the Old Faithful area to replace the one removed in the late-1960s. This would provide an affordable lodging option for visitors. This alternative was rejected due to the fact that the area of the previous campground is now taken up by the East Parking Lot, and would require locating it in an undisturbed area while avoiding hydrothermal and wetland resources.

Alternative Summaries

Table 1 summarizes the major components of Alternatives A, B and C, and compares the ability of these alternatives to meet the project objectives (the objectives for this project are identified in the Purpose and Need chapter).

Table 1 – Summary of Alternatives and How Each Alternative Meets Project Objectives

Alternative Elements	Alternative A – No Action (1985 DCP)	Alternative B – Repurpose Cabins and Build a Dormitory	Alternative C – Existing Conditions
Repurpose Cabins	All of the Old Faithful Lodge Cabins would be removed and not used as lodging for visitors or housing for employees.	The 28 cabins (67 units) would be rented as overnight visitor accommodations.	The 28 cabins (67 units) presently used for employee housing would continue in that use.
Construct Dormitory	A new dormitory building would be constructed in the administrative area to house employees displaced by the cabins being removed.	A new dormitory building would be constructed in the administrative area to house employees displaced by the 28 cabins for visitor accommodations.	The 28 cabins would continue to be used for employee housing for concessioner employees. Therefore no new dormitory would be constructed.
Utilities	Some excavation would be required to route existing utilities to the new dormitory building.	Some excavation would be required to route existing utilities to the new dormitory building. Some existing utility lines to the repurposed cabins would need to be repaired or replaced to ensure reliable service.	New utility connects would not be needed as the dormitory would not be constructed. Utility line repairs and replacements would occur on an “as-needed” basis within the Old Faithful Lodge Cabin Area.
Rehabilitate Interiors	All of the Old Faithful Lodge cabins would be removed; therefore the interiors would not need to be rehabilitated.	The cabin interiors would be rehabilitated to bring them up to a standard expected for overnight visitor use. Cabin foundations are in good shape and no work is needed.	Cabin interiors would likely be rehabilitated only in cases where flagrant safety or health hazards exist.

Old Faithful Cabin Repurposing and Dormitory Construction

Parking Area	Parking for approximately 65 vehicles would be constructed near the proposed dormitory, likely along the existing access road.	Parking for approximately 65 vehicles would be constructed near the proposed dormitory, likely along the existing access road.	No additional parking would be constructed.
Revegetation	Topsoil would be retained using park standards already in place for construction projects. All disturbed areas would be revegetated or landscaped at the end of the project.	Topsoil would be retained using park standards already in place for construction projects. All disturbed areas would be revegetated or landscaped at the end of the project.	No revegetation of areas disturbed by construction activities would be needed.
Temporary Construction Trailer	A temporary construction office trailer would be located in the administrative area. Some utility connections would be made to existing utilities in the area.	A temporary construction office trailer would be located in the administrative area. Some utility connections would be made to existing utilities in the area.	No construction office trailer would be needed.
Construction Staging	Construction staging for equipment and supplies would occur close to the worksites (near proposed dormitory site) within already disturbed or paved surfaces.	Construction staging for equipment and supplies would occur close to the worksites (near cabins and proposed dormitory site) within already disturbed or paved surfaces.	No construction staging areas would be needed.
Contractor Housing	Contractors would be housed either in the existing contractor dormitory located in the administrative area, or via commercial lodging facilities in West Yellowstone.	Contractors would be housed either in the existing contractor dormitory located in the administrative area, or via commercial lodging facilities in West Yellowstone.	No contractor housing would be needed.
Project Objectives	Meets Project Objectives?	Meets Project Objectives?	Meets Project Objectives?
Provide for additional affordable lodging options.	No. All of the existing cabins would be removed; no additional visitor lodging units would be available.	Yes. By using the cabins currently used for employee housing as visitor accommodations, an increase of 67 units could be made available to the public.	No. The existing cabins would be kept for an employee housing function; no additional visitor lodging units would be available.
Remove employee housing from high visitor use area to reduce potential	Yes. Removing the cabins and constructing a new dormitory in the administrative area would work toward separation of use by removing employees	Yes. Repurposing the cabins and constructing a new dormitory in the administrative area would work toward separation of use by removing employees from 67 units and housing	No. The existing employee cabins would continue to be used, visitors and employees would be in close proximity, and conflicts of use would continue.

conflicts that can arise from incompatible uses.	from 67 units and housing them in the administrative area.	them in the administrative area.	
Enhance safety of asphalt pathways that have deteriorated over time.	No. All of the cabins would be removed; therefore walkways in the cabin area would be removed.	Yes. Walkways for the repurposed cabins would be repaired and maintained.	No. Walkways in employee cabin area would likely not receive repairs or upgrades due to limited amount of maintenance funding available and is a lower priority.
Improve accessibility for visitors using the cabin area.	No. All of the cabins would be removed; therefore accessibility to visitors would not be done.	Yes. Walkways would be repaired and a minimum of 5% of cabins would be made fully accessible.	No. Accessibility would remain the same.

Table 2 summarizes the anticipated environmental impacts for Alternatives A, B and C. Only those impact topics that have been carried forward for further analysis are included in this table. The Environmental Consequences chapter provides a more detailed explanation of these impacts.

Table 2 – Environmental Impact Summary by Alternative

Impact Topic	Alternative A – No Action	Alternative B – Preferred Alternative	Alternative C – Existing Conditions
Geology and Soils	Direct, localized short-term minor adverse impacts to soils and long-term moderate beneficial impacts to soils because initially there would be increase in impact to soils. However, reclaiming the cabin area and the area around the new dormitory would to return the site to as close to its original condition as possible and reduce the potential for soil compaction, erosion, productivity and suitable stratum for weed species.	Direct, indirect, local, minor, short- and long-term adverse impacts due to changes in soil properties, loss of soil to wind and water erosion, a decrease in soil biological activity, an increase in soil compaction, and a suitable stratum for establishment of weeds from excavation and other ground disturbance activities associated with construction of the dormitory, parking lot, and utility lines.	Direct, indirect, local, minor, short- and long-term adverse impacts because the area has previously been impacted by construction activities, existing development and continued use by visitors and employees.
Hydrothermal Resources	Short-term, minor to moderate adverse and beneficial impacts due to activities associated from permanently removing Old Faithful Lodge Cabins and utilities.	Short- and long-term, minor to moderate adverse impacts due to activities associated with the continued use of the Old Faithful Lodge Cabins and the necessary utility maintenance, repair and replacement as well as potential additional	Short- and long-term, minor to moderate adverse impacts due to activities associated with the continued use of the Old Faithful Lodge Cabins and the necessary utility maintenance, repair and replacement.

Impact Topic	Alternative A – No Action	Alternative B – Preferred Alternative	Alternative C – Existing Conditions
		pervious surface.	
Vegetation and Rare Plants	Direct and indirect, local, long-term, minor, adverse and beneficial impacts. Removal of the cabins and construction of the dormitory would short-term adversely impact plant regeneration and establishment, and species composition. Revegetating the area would result in long-term beneficial impacts.	Direct, indirect, local, minor, short- and long-term, adverse impacts due to removal of ground cover from construction operations and an increase in suitable stratum for establishment of invasive plants.	Direct, indirect, local, minor, short- and long-term adverse impacts due to a continuation of trampling by vegetation and establishment of invasive plants.
Wildlife	Direct and indirect, local, short-term, minor, and beneficial adverse effects upon wildlife would continue as a result of increased human activity, the removal of Old Faithful Lodge Cabins, and the construction of the new dormitory.	Direct and indirect, local, short-term, minor, adverse impacts upon wildlife would result due to continued human presence in the developed area.	Direct and indirect, local, short-term, minor adverse impacts would continue as a result of continued human activity in the developed area.
Special Status Wildlife Species and Yellowstone Species of Management Concern	Direct and indirect, local, short-term, negligible to minor and beneficial adverse impacts due to the continued human presence in the developed area.	Direct and indirect, local, short-term, negligible to minor, adverse impacts would result due to a continuation of human activity and the low probability of special status species in the developed area.	Direct, local, short-term, negligible to minor, adverse impacts would result due to a continuation of human activity and the low probability of special status species in the developed area.
Historic Structures	Long-term, moderate, adverse impact due to complete removal of all the cabins.	Direct, minor, local, long-term, adverse impacts due to past removal of historic structures within the historic district. Construction of the proposed dormitory is outside the historic district.	Direct, minor, local, long-term, adverse impacts due to past removal of historic structures within the historic district.
Cultural Landscapes	Long-term, moderate, adverse impact due to the removal of the cabins.	Negligible due to the proposed dormitory being outside of the defined cultural landscape for Old Faithful.	Negligible due to no changes being proposed.

Impact Topic	Alternative A – No Action	Alternative B – Preferred Alternative	Alternative C – Existing Conditions
Socioeconomics	Direct, local, minor to moderate, adverse due to all of the Old Faithful Lodge Cabins being removed which would result in a change in visitor spending and decrease in Park and concessioner revenue. Minor to moderate beneficial to the surrounding gateway communities could be increased if current capacities at lodging facilities outside the Park are not fully utilized.	Direct, indirect, local, minor, short- and long-term, adverse and beneficial impacts due to change in visitor spending, increase in revenue to the Park and concessioners, and an increase of up to eight concessioner employees.	Negligible due to no changes being proposed.
Visitor Use and Experience	Visitors continue to make this area of the Park a destination regardless of an increase in overnight affordable lodging. Therefore, the no action alternative would have a direct, local, moderate, short- and long-term, adverse effect.	Direct, indirect, local, minor, short- and long-term adverse and beneficial impacts because there would be potential to increase approximately 134 overnight visitors at Old Faithful during the summer season. Utilizing all the cabins for visitor lodging would help address the objective to separate employee housing from high visitor use areas to reduce potential conflicts that can arise from incompatible uses.	Direct, indirect, local, minor, short- and long-term and adverse impacts because there would not be an increase in overnight visitors and there would continue to be potential conflicts between visitors and employees looking for a different use experience.

Environmentally Preferable Alternative

According to the NPS regulations implementing NEPA (43 CFR 46.30), 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.” For this project, this is the case in Alternative A, natural conditions are restored, and in Alternative B, cultural resources are protected.

Alternative A (No Action – 1985 Old Faithful Development Concept Plan) shares being the environmentally preferred alternative with Alternative B listed below for the following reasons: 1) all the Old Faithful Lodge Cabins would be removed and the area's vegetation would be restored to as close to natural conditions as possible; 2) removal of the utilities associated with the cabins followed by subsurface restoration would allow more natural heat and water flows to resume in the area.

Alternative B (Repurposing Cabins and Construct New Dormitory) shares being the environmentally preferable alternative for several reasons: 1) using the cabins for a long-term visitor use function changes the decision to remove the historic cabins as called for in the 1985 DCP. These contributing elements of the Old Faithful Historic District would be retained into the future. Improved upkeep of the cabins (a cultural resource-considered contributing elements to the Old Faithful Historic District) would occur; 2) deferred maintenance of many of the asphalt walkways would be completed making the area much safer to pedestrians using the area; 3) construction of a new employee dormitory in the administrative area would separate potentially incompatible uses and noise impacts from this more serene area of the development; 4) the area around the cabins and within the historic district would be cleared of items that accompanies seasonal employee housing (extra vehicles, outdoor equipment, bicycles and household items); and 5) while there would be some new ground disturbance that would damage up to 1.08 acres of previously undisturbed lodgepole pine forest, the design of the new dormitory building would be within the footprint of the existing Old Faithful Administration Area, thereby causing no expansion of the developed area footprint. For these reasons, Alternative B causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and soundscape resources, thereby making it the environmentally preferable alternative.

By contrast, Alternative C (Existing Conditions) is not the environmentally preferable alternative because: 1) the cabins are not maintained as well as they could be due to limited funding, and many higher priority projects; 2) this alternative does nothing to improve the asphalt walkways of the area, and safety concerns with uneven walks, potholes, and raveling edges would continue; and 3) deterioration of cabins, utility lines and associated infrastructure would likely continue and worsen over time on these important historic properties.

Preferred Alternative

No new information came forward from public scoping or consultation with other agencies to necessitate the development of any new alternatives, other than those described and evaluated in this document. Alternative B is the environmentally preferable alternative and better meets the project objectives; therefore, it is also considered the NPS preferred alternative. For the remainder of the document, Alternative B will be referred to as the preferred alternative.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the proposed project. Direct, indirect, and cumulative effects are analyzed for each resource topic carried forward. Potential impacts are described in terms of type, context, duration, and intensity. General definitions are defined as follows, while more specific impact thresholds are given 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.

Context describes the area or location in which the impact would occur. Effects may be site-specific, local, regional, or even broader.

Duration describes the length of time an effect would occur, either short-term or long-term:

Short-term impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.

Long-term impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction.

Intensity describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major. Because definitions of intensity vary by resource topic, intensity definitions are provided separately for each impact topic analyzed in this EA.

Cumulative Impact Scenario

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

Cumulative impacts were determined by combining the impacts of the preferred alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at YNP and, if applicable, the surrounding region. Because the scope of this project is relatively small, the geographic and temporal scope of the cumulative analysis is similarly small. The geographic scope for this analysis includes actions within YNP's boundaries, while the temporal scope includes projects

within a range of approximately ten years. Given this, the following projects were identified for the purpose of conducting the cumulative effects analysis, listed from past to future:

- Old Faithful Snow Lodge Construction (2006)
- Old Faithful Inn Phase I, II, III Rehabilitation (2006-2008)
- Re-roofing of Lower Loop Cabins (2008)
- Removal of the Old Faithful Pub (2009)
- Old Faithful Inn Old House East Wing Bathroom/Shower Room Rehabilitation (2009)
- Old Faithful Inn Housekeeping Dock Construction (2009)
- Old Faithful Inn Old House Elevator and Laundry Storage Rotunda Addition (2009)
- Delaware North Yellowstone General Store Upper Store Exterior Restoration and New Roof (2009-2010)
- Old Faithful Visitor Education Center Construction (2010)
- Removal and Relocation of the Old Faithful Haynes Photo Shop (2011)
- Old Faithful Inn Rehabilitation - Phase IV (2012)
- Old Faithful Inn West and East Wing Re-Roof (2012)

NATURAL RESOURCES

Geology and Soils

Affected Environment

Yellowstone National Park contains a landscape that is continually being shaped by geological forces. The Park is in a geologically active area and is known worldwide for its renowned hotspots, geysers, mudpots, and fumaroles. Evidence of the geological forces that have shaped Yellowstone is found in abundance at Old Faithful. The hills surrounding Old Faithful and the Upper Geyser Basin are reminders of the Quaternary rhyolitic lava flows. These flows occurred long after the catastrophic eruption of 600,000 years ago that also impacted the landscape.

Soils in the Old Faithful area are derived from rhyolitic sands and gravels. The resulting soils are moderately coarse-textured, well-graded obsidian sands mixed with silt. Evidence of the region's last glacial activity, about 14,000 years ago, also exists in the area, and glacial till deposits underlie the geyser basins. Soils have been heavily disturbed in the proposed project area from previous development and subsequent human use.

Intensity Level Definitions

Baseline information used to assess impacts to geology and soil resources include Park staff knowledge of the resources and site, review of existing reports relative to the project area, and information provided by technical specialists within the NPS. The definitions for the intensity of impacts to soils are defined as follows:

Negligible: Geology and soils would not be affected or the effects on soils would not be detectable.

Minor: Impacts on geology and soils would be detectable, although these effects would be localized. There could be some slight physical disturbance or removal of and/or some soil compaction. Mitigation measures proposed to offset adverse effects would include measures to ensure that geologic features and topsoil is preserved, the ground is reshaped to natural contours, and that there is no unnatural erosion of soils.

Moderate: Impacts on geology and soils would be readily detectable, localized, but possibly

long-term. Measurable effects could include physical disturbance and removal of large amounts of soil, compaction, and, possibly, unnatural erosion of soils. Mitigation measures proposed to offset adverse effects would be extensive and would include measures to ensure that geologic features and topsoil is preserved, ground is reshaped into the natural contours, and that no unnatural erosion occurs.

Major: Impacts on geology and soils would be widespread, readily detectable, and long-term and could have permanent consequences. Significant measurable effects would include the physical disturbance and removal of large amounts of soil, compaction, and the unnatural erosion of soils. Mitigation measures proposed to offset adverse effects would be extensive and success would not be assured.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A would result in local, minor to moderate, short- and long-term, beneficial and adverse impacts to geology and soils at the existing cabin sites. These impacts would result from removal of the existing cabins that would cause additional ground disturbance to previously disturbed soils. Once removal of the cabins would be completed, the site would be reclaimed following mitigation measures to reduce soil compaction and erosion. Minor soil compaction and ground disturbance would continue in the area from visitor and employee use.

Construction of a new employee dormitory and additional parking would disturb approximately 1.08 acres of soil from site work. Disturbance would continue through foot traffic walking off delineated pathways, and operational use during necessary infrastructure maintenance to the other existing buildings and utility lines in the area. Impacts from dormitory construction and parking would have local, short- and long-term minor adverse impacts.

Because Old Faithful Geyser is known to be affected by seismic events, appropriate methods of construction, such as compaction and drilling techniques, would be discussed with scientists prior to use. During excavation related to this project, a qualified geologist/hydrothermal specialist would have the opportunity to observe ground disturbing activities to increase the knowledge of soil types in the area, and offer mitigation measures that could lessen impacts to geology and soils.

Cumulative Effects: Cumulative impacts on geology and soils are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in the Old Faithful area of YNP. Construction projects including road maintenance, trail maintenance, and facility maintenance would continue in the Old Faithful area and the southwestern portion of YNP, disturbing geology and soil and causing minor amounts of erosion. Additionally, foot traffic would continue off pathways and off boardwalks to some extent. When added to other projects occurring in the area, Alternative A would cause adverse and beneficial, direct and indirect, minor to moderate, local, short- and long-term cumulative impacts to geology and soils. The impacts of Alternative A coupled with past, present, and reasonably foreseeable future actions are minor, short- and long-term, beneficial and adverse.

Conclusion: Alternative A would result in direct, localized short-term minor adverse impacts to soils and long-term moderate beneficial impacts to soils. Initially, this alternative would increase the amount of disturbance and the resultant impact to soils. However, reclaiming the cabin area and the area around the new dormitory would include revegetating the site with native vegetation to return the site to as close to its original condition as possible and reduce the potential for soil compaction, erosion, productivity and suitable stratum for weed species.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Implementing Alternative B would have adverse effects on geology and soil resources. Construction activities such as excavating, leveling, grading, and resurfacing associated with site work would result in geologic and soil disturbance. A majority of the disturbance associated with Alternative B would be within the existing disturbance footprint. During site work, a total of approximately 47,000 square feet (1.08 acres) of soil would be impacted by ground disturbance activities. Of this total amount of disturbance 35,000 square feet (0.8 acre) would be for construction of the new dormitory. The additional 12,000 square feet (0.28 acre) would be for construction of a parking lot for capacity of 65 vehicles. Other small areas of soil disturbance would occur where soils would be excavated for utility lines that may need to be repaired or replaced within the cabin area or near the new dormitory building. Short- and long-term direct effects under this action alternative would include changes to soil properties, loss of soil to wind and water erosion, a decrease in soil biological activity, an increase in soil compaction, and a suitable stratum for establishment of weeds.

Because Old Faithful Geyser is known to be affected by seismic events, appropriate methods of construction, such as compaction and drilling techniques, would be discussed with scientists prior to use. During excavation related to this project, a qualified geologist/hydrothermal specialist would have the opportunity to observe ground disturbing activities to increase the knowledge of soil types in the area, and offer mitigation measures that could lessen impacts to geology and soils. Additionally, mitigation measures such as topsoil salvage and replacement would be used to lessen impact to soils and allow for revegetation. Monitoring for noxious weeds would be done and treatments would be implemented if needed. Overall, direct and indirect impacts of Alternative B on geology soils would be adverse, localized, minor, adverse and short- and long-term.

Cumulative Effects: The impacts from past, present, and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative B, in conjunction with these past, present, and reasonably foreseeable projects would result in minor, short- and long-term adverse impacts to geology and soils.

Conclusion: Alternative B would result in an increase in disturbance to geology and soils from construction of the employee dormitory and parking lot construction. Effects of Alternative B would result in local, direct and indirect, minor, short- and long-term adverse impacts to geology and soils. The effects on geology and soils under this alternative are anticipated to be minor and adverse in intensity.

Impacts of Alternative C – Existing Conditions

Geology and soils within the project area have been previously impacted by past construction activities, existing development and continued use by visitors and employees. Disturbance would continue through visitors and employees walking off delineated pathways and operational use during necessary infrastructure maintenance. Existing development in the area would continue to have long-term minor adverse impacts. Pedestrian use and maintenance activities would have short-term negligible impacts from soil trampling and minor excavation for utility repairs.

Cumulative Effects: Cumulative impacts on geology and soils are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in the Old Faithful area of YNP. Construction projects including road maintenance, trail maintenance, and facility maintenance would continue in the Old Faithful area and the southwestern portion of YNP, disturbing geology and soil and causing minor amounts of

erosion. Additionally, foot traffic would continue off pathways and off boardwalks to some extent. When added to other projects occurring in the area, Alternative C would cause adverse direct and indirect, negligible to minor, local, short- and long-term cumulative impacts to geology and soils. The impacts of Alternative C coupled with past, present, and reasonably foreseeable future actions are minor, short- and long-term adverse.

Conclusion: Alternative C would result in continued human and construction related disturbance to geology and soils. This alternative would not adequately address or correct conditions that are detrimental to geology and soil resources. These disturbances would result in direct and indirect, local, minor, short- and long-term adverse impacts.

Hydrothermal Resources

Affected Environment

Yellowstone National Park is one of the most active hydrothermal areas in the world. The Park is world-renowned for its hot springs, geysers, mudpots and fumaroles. The Park is in a geologically active area in the intermountain seismic belt of the Rocky Mountains and is noted for outstanding geologic features resulting from volcanic activity, faulting, and glaciation. Seismic activity is recorded frequently in and around the Park.

The geothermal systems of YNP are a globally rare, composite natural resource that supports an array of recreational, economic, scientific, cultural, and natural heritage benefits. The iconic Old Faithful Geyser shoots 3,700 to 8,400 gallons of hot water to a height of 106 to 185 feet in the air. It erupts for 1.5 to 5 minutes every 60 to 90 minutes. The length of time between eruptions has lengthened in recent years. Individual geysers, hot springs, steam vents and mudpots are extremely sensitive to disturbances in water and heat flow.

In the general area of the proposed dormitory there is a low probability for hydrothermal concerns. This is based on the logic that no thermal activity has been reported in the area from past excavations for utility line replacements or maintenance work, there is a lack of surface thermal features in this area, and the previous excavation for the fuel tanks in the administrative area went down 12 feet and did not show any indication of hydrothermal activity.

The Old Faithful Lodge Cabins are located between Old Faithful Geyser and another active thermal area to the east and northeast across the Firehole River. Some lodge cabins are within 600 feet of Old Faithful Geyser and 70 feet of the thermal features located to the east of the Firehole River. No active thermal features currently exist in the immediate vicinity of the Old Faithful Lodge Cabins.

Intensity Level Definitions

There are four types of hydrothermal features: geysers, hot springs, fumaroles, and mudpots. Analyses of the potential intensity of impacts to hydrothermal features were derived from information on specific hydrothermal features (temperature, chemistry, flow rates, eruption intervals and photographs), information on hydrothermal basins, and past observations from Park staff of the effects of both visitor use and construction activities on hydrothermal features.

Hydrothermal features are categorized into five categories including those that are culturally significant (Old Faithful Geyser), developed area features (West Thumb Geyser Basin), scientifically notable (superheated features), backcountry features (Shoshone Geyser Basin), and unnamed low-flow and low-temperature thermal seeps. The first four categories were considered when evaluating the thresholds of change to hydrothermal features for this project. Seeps are not considered unless interconnected and integral to a larger nearby system or other

category of feature. The definitions for the intensity of impacts to hydrothermal resources are defined as follows:

- Negligible:** Hydrothermal features and/or a group of features or the fluid flow characteristic of the hydrothermal system would not be affected or the impact would cause insignificant physical disturbance (there would be no effect upon the temperature, eruption intervals, or volume of thermal water flow).
- Minor:** Effects to the hydrothermal system would be slight but measurable for a single thermal feature, a group of features or the fluid flow characteristic of the hydrothermal system. Eruption intervals, thermal water temperature, and/or thermal water flow would change slightly due to disturbance but would return to baseline values within one day. Mitigation measures proposed to offset adverse effects would include measures to ensure that the hydrothermal feature(s) is protected.
- Moderate:** Effects to hydrothermal systems would be measurable for a single thermal feature, a group of features, or the fluid flow characteristic of the hydrothermal system. Eruption intervals, thermal water temperature, and/or thermal water flow would change but would be expected to return to baseline values in a short amount of time. Mitigation measures proposed to offset adverse effects would be extensive.
- Major:** Effects to hydrothermal systems would be readily apparent and measurable for either a single thermal feature, a group of features, or the fluid flow characteristic of the hydrothermal system and are both short- and long-term. Eruption intervals, water temperature, and/or the volume of thermal water would last for more than one day, and/or increase or decrease. New thermal changes could be created at project areas. Existing hydrothermal features would show measurable change in duration, extent, or character. Mitigation measures proposed to offset adverse effects would be extensive and success would not be assured.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Under Alternative A, construction of the dormitory in the administrative area would not cause impacts to thermal resources because the area is not known to be hydrothermally active. Due to the dynamic nature of the Old Faithful area, hydrothermal assessments, as discussed in the *Mitigation Measures* section, would be performed prior to design to ensure appropriate considerations are made if the area is found to be hydrothermally active. Minor to moderate adverse impacts to hydrothermal resources would occur in the area where the removal of the Old Faithful Lodge Cabins and associated utilities are proposed due to digging required to remove foundations and utilities associated with the cabins. These impacts to hydrothermal resources are expected to be short-term, and could be mitigated by careful excavation. Restoration of natural heat and water flow conditions following the cabin and utility systems removal would be beneficial.

Cumulative Effects: Cumulative impacts on hydrothermal resources are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in the Old Faithful area. Past construction projects have had short- and long-term, minor to moderate adverse impacts on hydrothermal resources as indicated by the visibility of utility lines via thermal imagery. The visibility of the lines indicates that heat and water flow is being artificially influenced in the Old Faithful area. The continued use of the Old

Faithful Cabins has resulted in a patchwork of excavations due to ongoing operations for utilities maintenance, repair and replacement. Similarly, the area proposed for the dormitory is also subject to on-going utility maintenance, repair and replacements and recently fuel tanks were installed that went down 12 feet. However, excavations at both sites have not shown any indication of hydrothermal activity.

Conclusion: Alternative A would result in short-term, minor to moderate adverse impacts to hydrothermal resources due to the removal of the cabins and utility lines. Moderate, long-term beneficial impacts from permanently removing the cabins and utilities would be possible once the area has been restored, and would allow more natural heat and water flow conditions.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Under Alternative B, construction of the dormitory in the administrative area would not cause impacts to thermal resources because the area is not known to be currently hydrothermally influenced. Due to the dynamic nature of the Old Faithful area, hydrothermal assessments, as discussed in the *Mitigation Measures* section, would be performed prior to design to ensure appropriate considerations are made if the area is found to be hydrothermally active.

Repurposing the cabins would have short- and long-term, minor to moderate adverse effects on hydrothermal resources due to ongoing operations, utilities maintenance/repair, and the addition of a small area of impervious surface associated with improvements proposed to walkways in the area. Sewer and water line ruptures have the potential to impact hydrothermal resources. Repair and maintenance activities typically result in negligible to minor impacts; however, the potential for increased impacts to the hydrothermal system that are measurable and varied in duration does exist. Impervious surfaces, such as the walkway system that would be improved under Alternative B, essentially disrupt the natural flow of water through the ground and cause increased amounts of water to flow immediately adjacent to these areas. This disruption to the natural flow of ground water and temperature changes due to additional impervious surface would have minor to moderate adverse impacts to the hydrothermal resources.

Cumulative Effects: The impacts from past, present, and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative B, in conjunction with these past, present and reasonably foreseeable projects would result in minor to moderate, short- and long-term, adverse impacts to hydrothermal resources.

Conclusion: Overall, Alternative B would continue to have short- and long-term, minor to moderate adverse impacts on the hydrothermal resources because it results in continued excavation for maintenance/repair of facilities and would increase impervious surfaces thereby disrupting the natural flow of water and heat.

Impacts of Alternative C – Existing Conditions

Under Alternative C, the continued use of the cabins would have short- and long-term adverse effects on hydrothermal resources due to ongoing operations, and utilities maintenance/repair. Sewer and water line ruptures have the potential to impact hydrothermal resources. Repair and maintenance activities typically result in negligible to minor impacts; however, the potential for increased impacts to the hydrothermal system that are measurable and varied in duration does exist.

Cumulative Effects: The impacts from past, present, and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative B. Alternative C, in conjunction with these past, present and reasonably foreseeable projects would result in minor to moderate, short- and long-term adverse impacts to hydrothermal resources.

Conclusion: Overall, Alternative C would continue to have minor to moderate short- and long-term adverse impacts on the hydrothermal resource because of the potential for continued excavation for maintenance/repair of facilities.

Vegetation and Rare Plants

Affected Environment

The project area is located in a lodgepole pine (*Pinus contorta*) forest. The understory is sparse with species such as elk sedge (*Carex geyeri*) and Ross' sedge (*Carex rossii*), grouse whortleberry (*Vaccinium scoparium*), pussytoes (*Antennaria spp.*), downy oatgrass (*Trisetum spicatum*), and Wheeler's bluegrass (*Poa nervosa*). Twenty-one species of rare plants inhabit the Old Faithful area, including two species endemic to Yellowstone, Ross' bentgrass (*Agrostis rossiae* var. *rossiae*) and Yellowstone sulphur wild buckwheat (*Eriogonum umbellatum* var. *cladophorum*). The project area was surveyed by the Park botanist and staff during the summers of 2005-2009. No plant species of special concern were found.

More than 200 species of non-native plants are known to occur in YNP and many of these species invade natural communities. Most non-native plants are found in disturbed areas such as developments and road corridors. Weeds discovered during surveys that pose the greatest threat to native vegetation included cinquefoils (*Potentilla argentea* and *Potentilla inclinata*), hawkweed (*Hieracium caespitosum* and *Hieracium aurantiacum*), hoary alyssum (*Berteroa incana*), tall buttercup (*Ranunculus acris*), velvetgrass (*Holcus lanatus*), and sweet vernalgrass (*Anthoxanthum odoratum*). The potential for proliferation of non-native plants is possible with any ground disturbance, including construction.

Intensity Level Definitions

The Park botanist and staff surveyed the project area during the summers of 2005-2009. No plant species of concern were located within the project area. Available information on native vegetation and unique plant communities was used to analyze effects of the alternatives. The thresholds used to determine the intensity of impacts to vegetation and rare plants are defined as follows:

- Negligible:** Individual native and rare plants could be affected, but there would be no effect on native and rare plant populations. Impacts would be localized and short-term.
- Minor:** Impacts would affect some individual native plants and would also impact a relatively minor portion of that species' population. Mitigation measures to avoid adverse impacts to the species or community would be proposed and implemented. Special mitigation measures would be implemented to avoid impacting rare plants.
- Moderate:** Impacts would affect some individual native and rare plants and would also affect a sizeable segment of the species' population over a relatively large area. Mitigation measures to offset adverse effects would be extensive, but would likely be successful.
- Major:** Impacts would have considerable effect on some individual native and rare plants and would also affect a sizeable segment of the species' population over a relatively large area in and out of the Park. Mitigation measures to offset adverse effects would be required, extensive, and success would not be guaranteed.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A would result in local, short- and long-term, negligible to minor, beneficial and adverse impacts to vegetation. Under the no action alternative, all cabin units would be removed and a new employee dormitory would be constructed. Removal of the cabins would disturb the ground and vegetation in a previously disturbed area. Once removal of the cabins would be completed, mitigation measures to minimize ground disturbance and vegetation clearing, and use of standard methods to revegetate construction staging areas and prevent the spread of exotic plants would be followed. However, impacts to vegetation in this area would continue from foot traffic and routine maintenance of the dormitory. Yellowstone sulphur wild buckwheat could potentially spread into this area although the soil is more suitable for lodgepole pine. If the sulphur wild buckwheat did become established it would most likely be a transitory presence and cessation would occur as the canopy closes. Depending upon the site chosen for construction of a new dormitory, up to 1.08 acres of lodgepole pine would be removed to clear the site for the dormitory and parking.

Cumulative Effects: Cumulative impacts on vegetation and rare plants are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in YNP. Continual activities in the vicinity of the project area include road reconstruction and maintenance, facilities maintenance, trail maintenance, backcountry operations, routine park operations, and hazard fuels reduction projects all of which would continue to have adverse effects on vegetation in the Park. Road maintenance activities would require disturbance and removal of soils and vegetation by heavy equipment operation. Backcountry operations include horse and foot patrol and trail maintenance. Trail maintenance involves localized disturbance of soil and vegetation; and overnight use of campsites and cabins lead to some vegetation trampling and development of social trails. Most facility maintenance activities occur in developed areas where minimal impacts to vegetation would occur. Additionally, Yellowstone's hazard fuels reduction projects require the removal of excess fuel (trees) from developed areas. Impacts to vegetation can be reduced by ensuring trails are maintained, including the use of barriers to prevent development of social trails and by monitoring construction and maintenance activities. Park visitation is expected to increase over time as a result of population growth in nearby communities and elsewhere. The growth and visitation will increase recreational use, such as angling, camping, and hiking. These activities trample vegetation and soils, which increase the potential for non-native or invasive plants to grow in an area. These actions would result in direct and indirect, minor, short- and long-term adverse and beneficial impacts to vegetation.

Conclusion: Under Alternative A, ongoing impacts to vegetation would result in direct and indirect, local, long-term, minor, adverse and beneficial impacts. All of these activities would short-term adversely impact plant regeneration and establishment, and species composition. However, these impacts would be primarily localized and, while individual trees or small areas of vegetation might be removed or otherwise degraded in the Old Faithful Administrative Area, the effect would not be considered severe within the context of vegetative resources throughout the Old Faithful area. Revegetating the area where the cabins would be removed would result in long-term beneficial impacts. Due to the requirement for rare plant surveys and avoidance through special mitigation measures impacts to rare plants would be negligible.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

The Old Faithful area has been intensively developed and has isolated trees or small groupings of trees, with a sparse herbaceous understory. The action alternative would disturb 1.08 acres

of ground, the majority of which is currently covered with lodgepole pine. Open ground is dominated by obsidian sand with occasional herbaceous plants. Depending upon the site chosen for construction of a new dormitory, up to 1.08 acres of lodgepole pine would be removed to clear the site for the dormitory and parking. The potential for proliferation of non-native plants is possible with any ground disturbance, and the potential for spreading non-native plant species during construction operations is a concern. Contractors would be required to adhere to proper construction techniques and precautions, including topsoil salvage and washing of equipment before entering the Park in order to eliminate any non-native plant seeds. Reclamation and revegetation efforts would follow Yellowstone's policy on vegetation management for construction which also includes procedures for long-term management of non-native vegetation. Plant species used during reclamation would reflect the vegetation native and typical to the area. The effects on vegetation would be localized, direct, indirect, short-term, adverse, and minor.

Cumulative Effects: The impacts from past, present and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative B, in conjunction with these past, present, and reasonably foreseeable projects would result in local, direct and indirect, minor, short- and long-term adverse impacts to vegetation and rare plants.

Impacts would be mitigated through by the use of certain preventative practices including washing of construction equipment before it enters the Park, minimizing ground disturbance to avoid creating optimal conditions for weed infestations, topsoil salvage and revegetation of disturbed areas and post-disturbance weed treatments to decrease seed availability and dispersal.

Conclusion: Activities associated with Alternative B would result in local, direct and indirect, minor, long-term, adverse effects on vegetation. However, these impacts would be primarily localized and the removal and/or relocation of vegetation would not be considered severe within the context of vegetative resources throughout the Old Faithful area. Reclamation and revegetation efforts would follow Yellowstone's policy on vegetation management for construction. Due to the requirement for rare plant surveys and avoidance through special mitigation measures impacts to rare plants would be negligible.

Impacts of Alternative C – Existing Conditions

Under the no action alternative, all employee cabin units would not be used for visitor lodging and a new employee dormitory would not be constructed and therefore no direct impact to vegetation and rare plants would occur. Indirect effects would persist as vegetation resources would continue to be impacted by trampling of vegetation through routine maintenance, repair, and upkeep activities of the cabin units and facilities within the proposed dormitory area, foot traffic that does not stay on delineated pathways, and establishment of invasive plants. The continued use of the area by employee residents living in the cabins due to continued occupancy of the area would result in continuation of direct and indirect, local, adverse, minor, short- and long-term impacts on vegetation. Because of the requirement for rare plant surveys and avoidance through special mitigation measures, impacts to rare plants would be negligible.

Cumulative Effects: Cumulative impacts on vegetation and rare plants are the same as those described in the cumulative effects section for Alternative A.

Conclusion: Under Alternative C, ongoing impacts to vegetation would result in direct and indirect, local, long-term, minor, adverse effects. However, these impacts would be primarily localized and, while individual trees or small areas of vegetation might be removed or otherwise degraded, the effect would not be considered severe within the context of vegetative resources throughout the Old Faithful area. Due to the requirement for rare plant surveys and avoidance

through special mitigation measures impacts to rare plants would be negligible.

Wildlife

Affected Environment

With 67 mammals documented, Yellowstone is home to the largest concentration of mammals in the lower 48 states. Yellowstone is also home to six reptiles, four amphibians, twelve native fish, five nonnative fish, and more than 300 species of birds. Of those mammals, seven are native ungulates, two are bears, three are wild cats, three are canids, and six are members of the weasel family. The following species descriptions are limited to those that may occur in the vicinity of the project area.

Thermal basins like the Upper Geyser Basin, which includes the Old Faithful area, provide important habitat for wildlife. Large numbers of bison (*Bison bison*) and elk (*Cervus elaphus*) live here year-round. In winter they take advantage of the warm ground and thin snow cover. During spring and fall, moose (*Alces alces shirasi*) are occasionally seen during the early morning or late afternoon. Mule deer (*Odocoileus hemionus*) are less frequently seen at this elevation. Both black and grizzly bears (*Ursus americanus* and *U. arctos horribilis*, respectively) are seen here, especially during the spring when winter-killed carcasses are available. Coyotes (*Canis latrans*) frequent the area; gray wolves (*Canis lupus*) are also sometimes seen. Small mammals seen in the area include voles (*Microtus* spp.), pocket gophers (*Thomomys taloides*), Uinta ground squirrels (*Spermophilus armatus*), golden-mantled ground squirrels (*Spermophilus lateralis*), and red squirrels (*Tamiasciurus hudsonicus*). Yellow-bellied marmots (*Marmota flaviventris*) are frequently seen in the rocks behind Grand Geyser. While not often seen, pine marten (*Martes americana*) are also found in the area.

Reptiles and amphibians that are known to occur or that may occur in the Old Faithful area include the western terrestrial (wandering) garter snake (*Thamnophis elegans vagrans*), rubber boa (*Charinabottae*), blotched tiger salamander (*Ambystoma tigrinum melanostictum*), western (boreal) toad (*Bufo boreas boreas*), Columbia spotted frog (*Rana petiosa*), and western (boreal) chorus frog (*Pseudacris triseriata maculata*).

Yellowstone National Park is home to a wide array of seasonally migrant and year-round resident bird species. Birds commonly seen in the Old Faithful area include the common raven (*Corvus corax*), northern flicker (*Colaptes auratus*), and killdeer (*Charadrius vociferus*). Other birds found in the area include hairy woodpecker (*Dendrocopos villosus*), mountain bluebird (*Sialia currucoides*), gray jay (*Perisoreus canadensis*), Clark's nutcracker (*Nucifraga columbiana*), mountain chickadee (*Parus gameli*), red-breasted nuthatch (*Sitta canadensis*), dark-eyed junco (*Junco hyemalis*), brownheaded cowbird (*Molotrus ater*), Cassin's finch (*Carpodacus cassinii*), cliff swallows (*Petrochelidon pyrrhonota*), and red crossbill (*Loxia curvirostra*). Other wildlife take advantage of the unique microclimates provided by the hydrothermal features in the Old Faithful area. Bacteria and archea live in the runoff channels of hot springs and geysers, providing food for tiny black ephydrid flies, which are, in turn, preyed upon by other animals.

Intensity Level Definitions

Park wildlife biologists used scientific literature, site-specific information, and professional knowledge to define intensity thresholds (i.e., degree of change) for impacts to wildlife. For these thresholds, the term habitat is defined as the resources (e.g., food, shelter, and range) and environmental conditions (e.g., precipitation, predators) that enable the presence, survival, and reproduction of a population, even if potentially suitable areas are currently unoccupied.

The intensity of impacts to wildlife is defined as follows:

- Negligible:** Adverse or beneficial impacts to individuals, their habitat, or the natural processes sustaining them would be extremely unlikely to occur or not be measurable.
- Minor:** Adverse or beneficial impacts to individuals, their habitat, or the natural processes sustaining them would affect a small, localized portion of the species' range in or near the Park. Short- or longer-term disturbances to individuals may occur and/or a small amount of habitat could be permanently modified or removed. However, these impacts would not measurably affect the movements, reproduction, or survival of many individuals, or the demography (i.e., age/sex structure, recruitment rates, survival rates, movement rates, population sizes, population rates of change) of populations. Sufficient habitat would remain available and functional to maintain the viability of all resident and migratory animals in the vicinity of any existing or reasonably foreseeable future developments.
- Moderate:** Adverse or beneficial impacts to individuals, their habitat, or the natural processes sustaining them would affect a moderate portion of the species' range in or near the Park. Short- or longer-term disturbances could measurably affect the movements, reproduction, or survival of many individuals, or the demography of populations. However, impacts would not significantly increase the susceptibility of populations in or near the Park to environmental or demographic uncertainty (e.g., severe winters, droughts, disease epidemics, skewed age or sex ratios). Sufficient habitat would remain available and functional to maintain the viability of all resident and migratory animals in the vicinity of any existing or reasonably foreseeable future developments.
- Major:** Adverse or beneficial impacts to populations, their habitat, or the natural processes sustaining would be long-term and affect a large proportion of a species' range in or near the Park. The susceptibility of populations in or near the Park to environmental or demographic uncertainty would increase significantly.

Impacts of Alternative A – No Action

Although the long standing development of the Old Faithful area has resulted in localized degradation of wildlife habitat, a diversity of wildlife species still inhabit the area. The wildlife present within the immediate vicinity of most of the proposed activities are habituated to human activity. Adverse effects on these animals as a result of the activities proposed under Alternative A are generally expected to be negligible because of the high human activity that already occurs there. The removal of the Old Faithful Lodge cabins and construction of a concessioner employee dormitory would have negligible, short-term, adverse and beneficial impacts on wildlife species in the area. The removal of the Old Faithful Lodge cabins has the potential to have beneficial impacts to species following restoration as this activity would return the area to a more natural state. The species that use the cabins and dormitory area would be temporarily displaced by construction activity and equipment, but they would be expected to return following completion of the project. Where previously undisturbed ground was developed, a permanent loss of habitat would occur. Some migratory birds could be displaced outside of the nesting period by tree-cutting activities that would occur prior to mid-May and after mid-August. The NPS expects no increase in wildlife mortalities in this area because all construction

activities would be short-term (temporary) and confined to the immediate project areas. As with all Yellowstone construction projects, the NPS would direct the contractor to manage food and garbage so that they are not available to grizzly or black bears. Contractor staff would have to attend bear/food management orientation sessions and abide by the normal bear management guidelines. Under Alternative A, negligible, short-term adverse impacts to Park wildlife would be expected to occur.

Cumulative impacts: Cumulative impacts on wildlife are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in YNP. Construction projects in the Old Faithful area and YNP would continue to occur. Ongoing administrative activities such as hazing, wildlife monitoring, road construction, and facilities maintenance would continue to affect some wildlife resources. Hazing efforts are carried out by Park personnel to discourage wildlife (e.g. bears, wolves, and coyotes) from using developed areas and to move bison back into the Park during winter months. Some wildlife would be permanently removed from the population if they become habituated to human food and pose a threat to human safety. Wildlife monitoring practices are used to document various demographics of wildlife populations in the Park and may cause adverse impacts ranging from generalized disturbance to sedation and handling of the animals. Noise from building construction and facilities maintenance could disturb wildlife in localized areas. Impacts from these disturbances could range from no impact to movement away from the immediate area. Park visitation is expected to increase over time as a result of population growth in nearby communities and elsewhere. Past and ongoing recreational uses such as boating, angling, camping, and hiking would continue parkwide. Fishing occurs parkwide during the summer months and could contribute to generalized disturbance of all wildlife species that occur near streams and lakes. Camping and hiking occur throughout the Park and could lead to generalized disturbance which could affect feeding and resting behavior. Both ongoing administration activities and increased visitor use could lead to impacts to wildlife populations throughout the Park at the short-term, negligible to minor level. Alternative A would not increase impacts to wildlife. Alternative A, coupled with past, present, and foreseeable future actions would result in minor, short- and long-term adverse and beneficial impacts to wildlife.

Conclusion: Under Alternative A, impacts to wildlife could result from the removal of cabins and associated utilities, as well as the construction of the new dormitory. These activities could result in direct and indirect, short-term, minor and beneficial adverse effects. However, these impacts would be primarily localized and, while individual animals might occasionally be killed on the road or suffer reproductive failure due to human disturbance, this would be within the natural range of variability of native species' populations and the effect would not be considered severe within the context of wildlife resources throughout the Old Faithful area.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Although the long standing development of the Old Faithful area has resulted in localized degradation of wildlife habitat a diversity of wildlife species still inhabit the area. An increase in overnight use by visitors due to the cabin repurposing and the construction of the dormitory would not have an impact on wildlife species in the area due to high use that currently exists. The wildlife present within the immediate vicinity of most of the proposed activities are habituated to human activity. Adverse effects on these animals as a result of the activities proposed under Alternative B are generally expected to be negligible because of the high human activity that already occurs there. The species that use this area would be temporarily displaced by construction activity and equipment, but they would be expected to return following completion of the project. Where previously undisturbed ground was developed, a permanent loss of habitat would occur. Some migratory birds could be displaced outside of the nesting

period by tree-cutting activities that would occur prior to mid-May and after mid-August. The NPS expects no increase in wildlife mortalities in this area because all construction activities would be short-term (temporary) and confined to the immediate project area. As with all Yellowstone construction projects, the NPS would direct the contractor to manage food and garbage so that they are not available to grizzly or black bears. Contractor staff would have to attend bear/food management orientation sessions and abide by the normal bear management guidelines. Under Alternative B, minor, short-term, local, adverse impacts to Park wildlife would be expected to occur.

Cumulative Effects: The impacts from past, present and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative B, in conjunction with these past, present, and reasonably foreseeable projects would result in minor, short- and long-term, local adverse impacts to wildlife.

Conclusion: Under Alternative B, impacts to wildlife could result from continued human presence in the cabin area and construction of the new dormitory. These activities could result in direct and indirect, local, short-term, minor, adverse effects. However, these impacts would be primarily localized and, while individual animals might occasionally be killed on the road or suffer reproductive failure due to human disturbance, this would be within the natural range of variability of native species' populations and the effect would not be considered severe within the context of wildlife resources throughout the Old Faithful area.

Impacts of Alternative C – Existing Conditions

Numerous wildlife species inhabit the Old Faithful area. The wildlife present varies on a seasonal basis. Those that are most common in the forests and meadows adjacent to developed areas during the summer months when visitation is highest would generally be species that are tolerant of, if not habituated to, human presence and activity. For example, ravens, magpies, chipmunks, squirrels, and jays are attracted to food sources provided by the human activity around the Old Faithful area and the geyser basins. Continued operations in the Old Faithful area would have a negligible effect on wildlife. Other than routine maintenance, repair, and upkeep activities, no disturbance would occur. While wildlife such as bison, small mammals, and some birds occur within the project area with regularity, many wildlife species avoid the area because of the intense human activity within this major development. Effects from the adoption of Alternative C would be negligible.

Cumulative Effects: The impacts from past, present and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative C, in conjunction with these past, present, and reasonably foreseeable projects would result in minor, short- and long-term adverse impacts to wildlife.

Conclusion: Under Alternative C, direct and indirect, short-term, minor adverse effects upon wildlife would continue due to continued use of the cabins. However, these impacts would be primarily localized and, while individual animals might occasionally be killed on the road or suffer reproductive failure due to human disturbance, this would be within the natural range of variability of native species' populations and the effect would not be considered severe within the context of wildlife resources throughout the Old Faithful area.

Special Status Wildlife Species & Yellowstone Species of Management Concern

Affected Environment

Impacts to USFWS Threatened and Endangered Species and Yellowstone Species of Management Concern are analyzed in this impact topic based on the knowledge of Park resource specialists, current literature, and consultation with USFWS. The species listed below are either federally listed as endangered, threatened, or candidate species or are listed by the Park as a species of management concern. Only species that exist or have the potential to exist in the project area are listed.

Grizzly Bear (*Ursus arctos horribilis*): The Park is responsible for protecting grizzly bear populations and habitat as mandated by the Yellowstone Park Act (1872) creating the Park, the National Park Service Organic Act (1916), the National Environmental Policy Act (1969), the Endangered Species Act (1973) (ESA), and the National Parks Omnibus Management Act (1998). National Park Service policy mandates that the Park perpetuate native animal populations as part of the natural ecosystem and protect native animal populations against destruction, removal, harassment, or harm through human actions (NPS 1996). A recovery plan for grizzly bear populations in the lower forty-eight contiguous United States was implemented because grizzly bears were listed in 1975 under the Endangered Species Act (USFWS 1982). The plan was developed to provide direction for the conservation of grizzly bears and their habitat to federal agencies responsible for managing land within the recovery zone. That same year, YNP completed an Environmental Impact Statement (EIS) for a grizzly bear management program specifically designed to recover the subpopulation of grizzly bears inhabiting the Park (NPS 1982). Management of grizzly bears in YNP has been successful in enabling grizzly bear recovery and reducing bear-human conflicts (e.g., property damage, incidents of bears obtaining human food, bear-inflicted human injuries) and human-caused bear mortalities in the Park (Gunther 1994, Gunther, et. al, 2004). The U.S. Fish and Wildlife Service removed grizzly bears in the Greater Yellowstone Ecosystem from the Federal List of Threatened and Endangered Wildlife on April 30, 2007. In 2009, a U.S. District Court returned the grizzly to the federal threatened species list, saying the Conservation Strategy was not enforceable and insufficiently considered the impact of climate change on grizzly food sources. The USFWS and the Department of Justice have appealed and a ruling is expected in 2012. While there are a variety of different habitat types within three miles of Old Faithful that provide bears with a range of foraging opportunities during the spring, summer, and fall, most grizzly bear use of the Old Faithful area occurs during early spring (Gunther, et al. 1998). During this time bears are feeding on winter-killed carcasses after emerging from hibernation. Carcass-feeding activity is usually completed by mid-May. It is unknown how many grizzly bears use the Old Faithful area in the spring. When all Park developments are compared for the level of grizzly and black bear activity, habitat quality, cub production, bear/human conflict, and bear management actions, the Old Faithful area ranks below many other Park developments (Gunther, et al. 1998). The Park also manages the area in the spring with wildlife closures in effect until April 15th. Management of carcasses in developed areas requires their removal to reduce conflicts with bears. These carcasses are relocated to other areas of the Park where they can be safely utilized by bears and other scavengers without disturbance.

Impacts to threatened species in YNP were evaluated by YNP wildlife biologists. Evaluations of threatened and endangered species were completed using records sightings within at least three miles (5 km) of Old Faithful area, records of sightings, and knowledge of habitats. The evaluation of effects included direct, indirect, interrelated, interdependent, and cumulative impacts as defined by the Endangered Species Act (ESA). Consultation with the U.S. Fish and

Wildlife Service (USFWS) will occur for this plan. Mitigation proposed by the Park for impacts on threatened or endangered species could include avoidance, minimization, and conservation measures as agreed upon by the USFWS.

Gray Wolf (*Canis lupus*): Gray wolves were native to the Yellowstone area when the Park was established in 1872. Historically hunted for their hides and as predators, they were eliminated from the ecosystem by the 1930s. The United States Fish and Wildlife Service released an environmental impact statement on wolf reintroduction in May 1994. In 1995 and 1996, 31 gray wolves from Canada were released in the Park. A total of 14 wolves were released in the winter of 1994-1995; 17 additional wolves were released in 1996 (Phillips and Smith 1996). On May 5, 2011 the USFWS removed gray wolves in a portion of the Northern Rocky Mountain Distinct Population Segment (DPS) encompassing Idaho, Montana, and parts of Oregon, Washington, and Utah from the Federal List of Endangered and Threatened Wildlife. Gray wolves in Wyoming remain on the List of Endangered and Threatened Wildlife and continue to be subject to the provisions of our experimental population regulations codified at 50 CFR 17.84(i) and (n). Wolves reintroduced into YNP and central Idaho were classified “nonessential experimental” according to section 10(j) of the ESA of 1973, as amended (16 U.S.C. 1531). In national parks and wildlife refuges, nonessential experimental populations are treated as threatened species, and all provisions of Section 7 of the ESA apply (50 CFR 17.83(b)). The Service is working closely with that state to develop a wolf management plan that would allow wolves in Wyoming to be removed from the list in the future. This direct final rule implements legislative language in the recently enacted Fiscal Year 2011 appropriations bill. The Service and the states will monitor wolf populations in the Northern Rocky Mountain DPS and gather population data for at least five years. At the end of 2010, at least 97 wolves (11 packs and 6 loners) occupied YNP. This is nearly the same size population as in 2009 (96 wolves) and represents a stable population. At the end of 2010, there were approximately 501 adult wolves consisting of 37 breeding pairs present in the GYA. At least one member of most packs is radio-collared, allowing Park and USFWS personnel to monitor the movements of all packs. While the Old Faithful area is part of the Mary Mountain pack’s territory, and possibly overlaps with the territory of an uncollared group of wolves to the south, the wolves largely avoid the developed areas of Old Faithful.

Canada Lynx (*Lynx canadensis*): The USFWS listed the Canada lynx as a threatened species in 2000. Lynx are considered rare in the Greater Yellowstone Area and are believed to use boreal or montane forests. Evidence of lynx in YNP comes from about 216 winter tracking surveys (conducted during winters of 2001-2004 and covering 1,043 total miles), from 118 lynx hair-snare transects deployed parkwide during the summers of 2001-2004, and from historic sightings. Parkwide, only four lynx sightings have been reported by visitors in the last 10 years. Surveys have documented one possible, two probable, and two definite cases of lynx presence, including a female accompanied by a kitten. Population numbers are unknown. Lynx prefer upper elevation coniferous forests in cool, moist vegetation types, particularly those that support abundant snowshoe hares, the primary food source for lynx. One possible lynx track was identified near Kepler Cascades (three miles east of the Old Faithful area) by a reliable observer, but no other surveys were able to verify lynx presence in the area. No critical habitat for lynx occurs in the project area.

Whitebark Pine (*Pinus albicaulis*): Whitebark pine is a major component of the forest community in areas above 8,400 feet and a major understory component of lodgepole-dominated forests from 7,000 to 8,400 feet. Seeds of the whitebark pine are important food for grizzly bears and a variety of other wildlife species. Whitebark pine populations in Yellowstone have been declining due to native mountain pine beetles (*Dendroctonus ponderosae*) and non-native blister rust, which is caused by a fungus, *Cronartium ribicola* (Schwandt 2006). In July

2011, the USFWS determined that whitebark pine warrants protection under the ESA, but that adding the species to the Federal List of Endangered and Threatened Wildlife and Plants is precluded by the need to address other listing actions of a higher priority. This species is now added to the list of candidate species eligible for ESA protection and its status will be reviewed annually. Whitebark pine occurs primarily in the understory at Old Faithful as small non-reproductive saplings, and consequently, they provide no food for animals currently.

Boreal toad (*Bufo boreas*): The boreal toad typically breeds in Park areas with water chemistry characteristics that include a pH >8.0, high conductivity, and high acid-neutralization capacity; many of the sites have a geothermal influence (Koch and Peterson 1995). Boreal toad breeding areas are common in the Upper Geyser Basin and have been documented in the Swan Lake Flats area. Boreal toads can also be found in riparian and riverine areas where they feed if adequate cover is available. Major boreal toad breeding sites occur north (Lower Geyser Basin and Fairy Creek) and south of Old Faithful (Lone Star Geyser). Although no toads have been documented specifically within the project area, due to geothermal influence there is the potential to exist in the project area. Boreal toads have declined considerably throughout the Park and are fairly rare compared to other amphibians.

Bald Eagle (*Haliaeetus leucocephalus*): The USFWS removed the bald eagle from the list of endangered and threatened wildlife on August 8, 2007. According to the US Fish and Wildlife Service website, current data indicate populations of bald eagles have recovered in the lower 48 states, with an estimated minimum of 9,789 breeding pairs now compared to 417 active nests in 1963. Nesting and fledgling bald eagles in Yellowstone increased incrementally from 1987 to 2005 (McEneaney 2006). Resident and migrating bald eagles are now found throughout the Park, with nesting sites located primarily along the margins of lakes and shorelines of larger rivers. The bald eagle management plan for the Greater Yellowstone Ecosystem achieved the goals set for establishing a stable bald eagle population in the Park, with a total of 26 eaglets fledged from 34 active nests during 2007 (McEneaney 2006). This is the most fledged eaglets ever recorded in Yellowstone and the increasing population trend indicates habitat is not presently limiting the growth of the population. The majority of bald eagle use in this area of the Park occurs nearby at the Firehole River, with only occasional use of habitat in the project area.

American peregrine falcon (*Falco peregrines anatum*): The American peregrine falcon was removed from the list of endangered and threatened wildlife on August 25, 1999 due to its recovery following restrictions on organochlorine pesticides in the United States and Canada, and implementation of various management actions, including the release of approximately 6,000 captive-reared falcons (64 FR 46541). The U.S. Fish and Wildlife Service has implemented a post delisting monitoring plan pursuant to the Endangered Species Act that requires monitoring peregrine falcons at three-year intervals that began in 2003 and will end in 2015. Monitoring estimates from 2003 indicate territory occupancy, nest success, and productivity were above target values set in the monitoring plan and that the peregrine falcon population is secure and viable (71 FR 60563). Peregrine falcons reside in Yellowstone from April through October, nesting on large cliffs. The number of nesting pairs and fledglings in the Park has steadily increased from zero in 1983 to 32 pairs and 47 fledglings in 2007 (Baril et al. 2010). Peregrine falcons are found to use the habitat in the greater Old Faithful area, but not immediately within the project area.

Trumpeter swan (*Cygnus buccinator*): Trumpeter swans were nearly extinct by 1900, but a small group survived by remaining year round in the Greater Yellowstone Area. In 2005 there were approximately 34,800 trumpeter swans in North America (USFWS 2006). Yellowstone supports resident, non-migratory trumpeter swans throughout the year, and its areas of ice-free water that diminish as winter progresses provide limited, temporary habitat for migrants from the region, Canada, and elsewhere during the winter. The NPS is committed to the conservation of

resident trumpeter swans and preserving habitat for winter migrants in Yellowstone because swans are part of the natural biota and a species with considerable historical significance. However, counts of resident, adult trumpeter swans in the Park decreased from a high of 69 in 1961 to 6 in 2009. Causes of this decline are unknown, but may include decreased immigration, competition with migrants, and the effects of sustained drought and predation on productivity (McEneaney 2006). The Rocky Mountain trumpeter swan population operates at a scale larger than Yellowstone, and the dynamics of resident swans in Yellowstone appear to be influenced by larger sub-populations and management actions in the Greater Yellowstone Area and elsewhere. The majority of trumpeter swan use in this area of the Park occurs nearby but not within the project area, with only occasional use of habitat in the immediate project area.

Yellowstone sulfur wild buckwheat (*Eriogonum umbellatum* var. *cladophorum*): Yellowstone sulfur wild buckwheat is endemic to YNP, only occurring globally from the vicinity of Madison Junction through the Lower and Midway Geyser Basins to the Upper Geyser Basin. This conspicuous wildflower starts blooming in late June and continues into August. It is primarily present on glacial till deposits with some geothermal influence such as the sagebrush steppe community near the Old Faithful Interchange. Yellowstone sulfur wild buckwheat has demonstrated its ability to recolonize after construction disturbance in the Old Faithful area by its presence on the road prism around the interchange. There is an opportunity to utilize this species in revegetation associated with this project since it was probably much more widely present in the vicinity of the Old Faithful Inn and Old Faithful Visitor Center prior to the development of the visitor infrastructure.

Ross' bentgrass (*Agrostis rossiae*): Ross' bentgrass is restricted to YNP occurring in the Lower Geyser Basin, Midway Geyser Basin, Upper Geyser Basin and Shoshone Geyser Basin on geothermally influenced warm ground sites. This Yellowstone endemic is globally rare and was considered for possible listing under the Endangered Species Act, though in June 2011 the U.S. Fish and Wildlife Service determined that listing was not warranted at this time since they determined that existing NPS regulatory mechanisms are adequate to protect the species. Sites are in active thermal areas and should be avoided, both for the plant's benefit but also safety since construction projects in these areas would be likely to adversely affect the geothermal system.

Intensity Level Definitions

Impacts to threatened species in YNP were evaluated by YNP wildlife biologists. Evaluations of threatened and endangered species were completed using records of sightings within at least three miles (5 km) of the Old Faithful area. The evaluation of effects included direct, indirect, interrelated, interdependent, and cumulative impacts as defined by the Endangered Species Act (ESA). Consultation with the U.S. Fish and Wildlife Service (USFWS) will occur for this plan. Mitigation proposed by the Park for impacts on threatened or endangered species could include avoidance, minimization, and conservation measures as agreed upon by the USFWS. The intensity of impacts to threatened and endangered species are defined as follows:

Negligible: Adverse or beneficial impacts to individuals or population of threatened and endangered species or species of concern or to the species habitat that is not measurable or perceptible and would be unlikely to occur.

Minor: Adverse or beneficial impacts to individuals or population of threatened and endangered species or species of concern or to the species habitat that are measurable, small, and localized may occur. Short- or long-term disturbances to individuals or population and/or a small amount of habitat could be permanently modified or removed. Impacts would not measurably affect the migration

patterns, or other demographic characteristic of the population (i.e., age/sex structure, recruitment rates, survival rates, movement rates, population sizes, population rates of change).

Moderate: Adverse or beneficial impacts to individuals or population of threatened and endangered species or species of concern or to the species habitat that are measurable, localized, and of consequence would affect a moderate portion of the species/range in the Park. Short- or long-term disturbances could measurably affect the migration patterns or other demographic characteristics of a population (i.e., age/sex structure, recruitment rates, survival rates, movement rates, population sizes, population rates of change). Impacts would not significantly increase the susceptibility of populations(s) in or near the Park to environmental or demographic uncertainties (e.g., severe winters, droughts, disease epidemics, and skewed age or sex ratios).

Major: Adverse or beneficial impacts to individuals or population of threatened and endangered species or species of concern or to the species habitats that are measurable, large, long-term, and causes a widespread change across the region. The susceptibility of populations(s) throughout the region to environmental or demographic uncertainty would significantly increase.

Impacts of Alternative A – No Action

Ten special status species were determined to have potential to occur within the Old Faithful area, seven animals and three plant species. Whitebark pine, Yellowstone sulfur wild buckwheat, and Ross' bentgrass are known to occur in the Old Faithful area. Special status wildlife species are generally not expected to occur within developed areas of the Old Faithful area due to the relatively high levels of habitat disturbance and human use. Since the removal of the Old Faithful Lodge Cabins and construction of a concessioner dormitory is proposed under Alternative A, minor beneficial and adverse effects to special status wildlife species are expected. The removal of the Old Faithful Lodge Cabins has the potential to have beneficial impacts to species following vegetation restoration as this activity would return the area to a more natural state. However, most of the special status plants are found in wetlands, wet meadows, or along creeks and if present near trails, roads and other existing facilities, may be subject to local, minor, adverse effects resulting from human-caused erosion and trampling. Those found on drier obsidian sand, such as Yellowstone sulfur wild buckwheat, are relatively tolerant of disturbance. Mitigation measures would be taken to transplant specimens or to protect plants from trampling through the installation of vegetation barriers. Special status plant species found in the project area would be relocated or avoided to the maximum extent practicable.

The trumpeter swan, bald eagle, peregrine falcon, and boreal toad are not known to regularly inhabit the project area but have the potential to exist in the project area. Any effects to these species would be negligible and short-term.

Selection of this alternative would have negligible to minor effects on the three federally listed species found in the Old Faithful area. The effects on these species are described as follows.

Grizzly Bear: Because of lack of high quality habitat in the Old Faithful area, grizzlies generally avoid the area during most of the year. However, during the late winter and early spring, bears use winter-killed carcasses and thermal vegetation resources. It is unknown how many grizzly bears use the Old Faithful area during this period. The area is designated Management Situation 3 habitat, which are managed for regular human use or occupation. Management of

carcasses in developed areas requires their removal to reduce conflicts with bears. During construction, as with any other time of the year in developed areas, these carcasses are relocated to other areas of the Park where they can be safely utilized by bears and other scavengers without disturbance. Decreased human visitation and overnight occupation of the cabins area is expected because of the proposed project. Existing management wildlife closures would be maintained for the area. All contractor employees would be required to attend and abide by the Park's grizzly bear orientation sessions. These sessions focus on proper food and garbage storage, how to avoid disturbing or encountering bears, and how to minimize unavoidable effects or encounters. Food storage and disposal procedures at the construction sites and the contractor housing camp would be strictly enforced to minimize the potential for bears to obtain food. By confining construction to within the Old Faithful developed area, there would be no loss of grizzly bear habitat. By providing Living in Bear Country orientation sessions for construction workers and strictly enforcing management regulations, the potential direct and indirect effects on grizzly bears would be minimized and minor. The probability for grizzly bear loss due to vehicular traffic is not likely to decrease despite a decrease in overnight accommodations in the Old Faithful area along the Grand Loop Road. Many more visitors come to the Old Faithful area each day than there are accommodations. Most visitors travel to and from Old Faithful to accommodations elsewhere in, or outside the Park. Traffic on the roads in the Old Faithful area is expected to stay neutral, with no rise or decrease expected due to this project. Bear mortality is significantly higher in areas with speed limits above 55 miles per hour and the areas around the project site are posted at 45 miles per hour or less. While there may be short-term displacement of bears from areas adjacent to the developed area due to construction noise, there would be no long-term impacts. Implementation of Alternative A "*may affect, but is not likely to adversely affect*", the grizzly bear.

Canada Lynx: The Old Faithful area does not occur in a Lynx Analysis Unit and few, if any, lynx occur in the area. Since all of the projects are in high human use areas, movements of lynx near the project site are not anticipated. While there is always the potential that there could be some direct or indirect impacts to lynx, these impacts are expected to be short-term and negligible. Alternative A would have "*no effect*" on the Canada lynx and therefore this alternative would have "*no effect*" on Canada lynx critical habitat.

Gray Wolves: While the Old Faithful development is within the territory of the Mary Mountain pack, wolves do not den in the area or use the developed area. While there is always the potential that this alternative could have direct or indirect impacts on wolves, any impacts are expected to be short-term and negligible. Alternative A "*may affect, but is not likely to adversely affect*" gray wolves.

Cumulative Impacts: Cumulative impacts on special status species are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in the Old Faithful area. Continuing construction projects in the Old Faithful area would occur, but each project's effects on threatened and endangered species must be independently and collectively evaluated, and all moderate or major impacts on Park endangered species must be mitigated. Ongoing administrative activities such as road reconstruction and maintenance, backcountry operations, hazing activities, and facilities maintenance would continue to have adverse effects on special status species in the Park. These would cause temporary displacement of special status species from generalized disturbance; feeding and resting behavior of wildlife species may be interrupted and some special status plant species may be adversely impacted from equipment working in construction areas. Use of trails and backcountry campsites and cabins could also temporarily displace or disrupt special status species. Effects from these activities would be direct, short-term, and negligible because of the limited duration of the activity. Hazing activities usually take place near

developed areas where wildlife have become habituated to the presence of humans. The grizzly bear and wolf are the two species most likely affected by hazing activities. Most facilities maintenance would take place in developed areas where minimal impacts to special status species would occur. However, adverse impacts to some species may occur because they are disturbed by noise and people associated with maintenance activities. Park visitation is expected to increase each year as a result of population growth in nearby communities and elsewhere. Past and ongoing recreational use such as fishing, camping, and hiking would continue parkwide. These activities could lead to negligible to minor adverse impacts because special status species can become disturbed from human activity. Outside of the Park, recent hunting regulations for gray wolves would have an adverse affect on the population, but compliance with the individual state's wolf management plan would ensure genetic viability and survival of the species.

Conclusion: Under Alternative A, ongoing impacts to special status species due to the removal of cabins and dormitory construction would result in direct and indirect, local, short-term, negligible to minor, adverse and beneficial effects. These impacts would be localized and would not jeopardize the continued existence of any species or result in the destruction or adverse modification of critical habitat for any species.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Ten special status species were determined to have potential to occur within the Old Faithful area, seven animals and three plant species. Whitebark pine, Yellowstone sulfur wild buckwheat and Ross' bentgrass are known to occur in the Old Faithful area. Special status wildlife species are generally not expected to occur within developed areas of the Old Faithful area due to the relatively high levels of habitat disturbance and human use. Due to this lack of occurrence in the project areas, only negligible to minor adverse effects to special status wildlife species are expected. Several of the special status plants are found in wetlands, wet meadows, or along creeks and if present near trails, roads, and other existing facilities, may be subject to local, minor, adverse effects resulting from human-caused erosion and trampling. Those found on drier obsidian sand, such as Yellowstone sulfur wild buckwheat, are relatively tolerant to disturbance. Mitigation measures would be taken to transplant specimens or to protect plants from trampling through the installation of vegetation barriers. Special status plant species found in the project area would be relocated or avoided to the maximum extent practicable.

The trumpeter swan, bald eagle, peregrine falcon, and boreal toad are not known to regularly inhabit the project area but have the potential to exist in the project area. Any effects to these species would be negligible and short-term.

Continued operations in the Old Faithful area would result in negligible effects (“*no effect*”) to the Canada lynx and a “*may effect, not likely to adversely affect*” the grizzly bear and gray wolf. Grizzly bears found within the Old Faithful developed area are hazed out of the area to reduce conflicts with humans. The nearest critical habitat for the lynx is approximately 15 miles east-southeast of the project area, there would be “*no effect*” on critical lynx habitat from this alternative. Sightings of any of the four species are unusual in the area due to frequent human activity near this major Park development. Alternative A would not increase impacts to special status species.

Selection of this alternative would have negligible to minor effects on the three federally listed species found in the Old Faithful area. The effects on these species are similar to the effects of Alternative A as described above.

Cumulative Impacts: The impacts from past, present, and reasonably foreseeable projects are

the same as described in the cumulative effects section for Alternative A. Alternative B, in conjunction with these past, present, and reasonably foreseeable projects would result in minor, short- and long-term adverse impacts to special status species.

Conclusion: Under Alternative B, impacts to special status species would result in direct and indirect, short-term, negligible to minor, adverse effects. These impacts would be localized and would not jeopardize the continued existence of any species or result in the destruction or adverse modification of critical habitat.

Impacts of Alternative C – Existing Conditions

Ten special status species were determined to have potential to occur within the Old Faithful area, seven animals and three plant species. Whitebark pine, Yellowstone sulfur wild buckwheat, and Ross' bentgrass are known to occur in the Old Faithful area. Special status wildlife species are generally not expected to occur within developed areas of the Old Faithful area due to the relatively high levels of habitat disturbance and human use. Since facilities would remain the same under Alternative C, only negligible to minor adverse effects to special status wildlife species are expected. However, most of these plants are found in wetlands, wet meadows, or along creeks and if present near trails, roads and other existing facilities, may be subject to local, minor, adverse effects resulting from human-caused erosion and trampling.

Continued operations in the Old Faithful area would result in negligible effects (“*no effect*”) to the Canada lynx and Canada lynx habitat, and a “*may affect, not likely to adversely affect*” the grizzly bear and gray wolf. Grizzly bears found within the Old Faithful developed area are hazed out of the area to reduce conflicts with humans. The nearest critical habitat for the lynx is approximately 15 miles east-southeast of the project area, this alternative would have “no effect” on critical lynx habitat. Sightings of any of the four species are unusual in the area due to frequent human activity near this major Park development. Alternative C would not increase impacts to special status species.

The trumpeter swan, bald eagle, peregrine falcon, and boreal toad are not known to regularly inhabit the project area but have the potential to exist in the project area. Any effects to these species would be negligible and short-term.

Cumulative Impacts: The impacts from past, present, and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Alternative C, in conjunction with these past, present, and reasonably foreseeable projects would result in minor, short- and long-term adverse impacts to special status species.

Conclusion: Under Alternative C, ongoing impacts would continue to impact special status species and would result in direct and indirect, short-term, negligible to minor, adverse effects. These impacts would be localized and would not jeopardize the continued existence of any species or result in the destruction or adverse modification of critical habitat for any species.

CULTURAL RESOURCES

Historic Structures

Affected Environment

The Old Faithful developed area includes two historic districts listed on the National Register of Historic Places –the Old Faithful Historic District and the Grand Loop Road Historic District. The Old Faithful Historic District was listed on the National Register in 1982, encompasses 160 acres and is dominated by the Old Faithful Inn National Historic Landmark. The 1981 nomination form lists the Old Faithful district as nationally significant in the areas of architecture

and Park development. Under Criteria A (36 CFR Part 60), the district is significant for its association with the concessions development in the early 1900's that was necessary to accommodate the visitors flocking to view the Old Faithful Geyser, one of the most recognized resources of the National Park System. Under Criteria C (36 CFR Part 60), the district is significant for its representation of rustic style architecture. The sensitivity of the architecture within the Old Faithful district to its natural surroundings served as a model for facility development within the NPS.

The district has three distinct units with the oldest buildings being in the Old Faithful Inn area, followed by the Lodge area, and the area with the most recent concentration of construction being the Snow Lodge. Additionally, this Historic District consists of the Old Faithful Lodge, 3 stores, 2 service stations, 5 dormitories, 10 support buildings and the guest cabins associated with the Old Faithful Lodge. The larger buildings are of similar architectural style to the Old Faithful Inn and retain their architectural and historical integrity. The Old Faithful Historic District boundary includes the historic structures north of the present alignment of the Grand Loop Road and includes the Old Faithful Geyser area. The paths and walkways are not included as significant structures due to the need for periodic replacement and rerouting to decrease impact to the geyser system.

The cabins associated with the Old Faithful Lodge have historical significance and reflect the type of cabin construction for the period of significance (1903-1942) for the Old Faithful Historic District. The exterior of the cabins retain some architectural integrity and are considered contributing to the Old Faithful Historic District but the interiors of the cabins have been modified through applications of modern, non-compatible materials, and no longer contribute to the significance of the buildings within the Old Faithful Historic District.

In 2000, all of the historic structures within the Old Faithful developed area were surveyed by Historic Research Associates, Inc. to evaluate both the exteriors and interiors of the buildings. The 28 Old Faithful Lodge Cabins currently being considered for interior modifications for repurposing to visitor cabins through this undertaking were documented and evaluated at that time. Previously, that documentation has been provided to the Wyoming State Historic Preservation Office for concurrence that the interiors of the cabins have lost integrity and do not contribute to the National Register significance of the cabins within the Old Faithful Historic District.

The second historic district is the Grand Loop Road Historic District, listed on the National Register of Historic Places in 2004. The Grand Loop Road is significant at the national level under Criterion A as the first, large-scale designed planned Federal road system giving people access into the "scenic splendors" of Yellowstone. In addition to the significance of the concept, this undertaking was important because the road was constructed in an isolated region at a time when road building across the country was in its infancy. Under Criterion B, the road is significant on a national level for Hiram Chittenden's innovative and vital role in the development of the road system. Under Criterion C, the Grand Loop Road is significant on a state level for the continuing design philosophy of the Army Corps of Engineers of blending with nature and lying lightly on the land.

The modern 1970s interchange into the Old Faithful Developed Area has been evaluated and is not a contributing structure to the Grand Loop Road Historic District. No changes to the road or interchange are proposed by this undertaking. All of the historic features of the Grand Loop Road Historic District in the Old Faithful area have been documented using the Historic American Building Record format and evaluated for National Register listing.

The Old Faithful Administrative Area, located south of the Old Faithful Historic District and south of the Grand Loop Road Historic District is comprised largely of modern buildings, moved

structures, temporary housing, and a few isolated and insignificant Mission 66 era buildings. The buildings in this area are associated with employee housing and various maintenance operations. The area does not have the potential of becoming a significant historic district in the future and will remain an active employee housing and maintenance area separated from the Old Faithful Historic District by the Grand Loop Road Historic District.

Intensity Level Definitions

The only historic structures within the area of potential effect of this undertaking are the historic cabins associated with the Old Faithful Lodge located within the boundary of the Old Faithful Historic District and determined contributing to the overall historic district. The interiors of all 28 cabins presently used as employee housing have been modernized and no longer retain integrity and are determined not contributing to the cabins' National Register eligibility or the cabins' contributions to the Old Faithful Historic District.

The methodology used for assessing impacts to historic structures is based on how the project will affect the features for which the structure is significant. The thresholds for this impact assessment are as follows:

- Negligible:** The impact is at the lowest levels of detection, barely perceptible and not measurable.
- Minor:** Adverse - The impact is measurable or perceptible, but it is slight and affects a limited area of a structure or group of structures. The impact does not affect the character defining features of a National Register of Historic Places eligible or listed structure and would not have a permanent effect on the integrity of the structure.
Beneficial - Stabilization/preservation of features is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- Moderate:** Adverse -The impact is measurable and perceptible. The impact change one or more character defining feature(s) of a historic structure, but does not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.
Beneficial - Rehabilitation of a structure is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- Major:** Adverse - The impact is substantial, noticeable, and permanent. For National Register eligible or listed historic structures, the impact changes one or more character defining features(s) of the historic property, diminishing the integrity of the structure to the extent that it is no longer eligible for listing on the National Register.
Beneficial - The impact is of exceptional benefit and the restoration of a structure is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A, following the 1985 Development Concept Plan for the Old Faithful area, would completely remove all of the 71 cabins associated with the Old Faithful Lodge and determined contributing structures to the Old Faithful Historic District, listed on the National Register of Historic Places in 1982. Although only a portion of the contributing structures within the Historic

District, the 71 cabins are a distinctive type of structure associated with visitor overnight accommodations at Old Faithful. As such, removal of the 71 cabins –over 1/3 of the historic cabins associated with the Old Faithful Lodge, would constitute an adverse impact to the historic significance of the Old Faithful Historic District removing a significant number of a type (visitor cabin) of structure and depleting the integrity of the early context of visitor use of the area and concessionaire efforts to accommodate overnight visitation at Old Faithful.

Cumulative Impacts: The past removal of many of the visitor cabins in the Old Faithful area had a minor adverse impact on the Old Faithful Historic District. Past removal of the Automobile Camp, Cafeteria, Haynes Photo Shop, and other services to accommodate overnight visitation increases the adverse impact to the fabric of the Historic District. The loss of the Employee Pub and the planned future removal of several other historic structures contributing to the Old Faithful Historic District will likely have additional adverse impact on the historic district which cumulatively would have moderate adverse impact.

Conclusion: The complete removal of the 71 cabins, originally constructed for visitor use and later converted to employee housing would, combined with the past removal of visitor overnight services and structures would be substantial, noticeable, and permanent. Therefore, the impact would be long-term, moderate, adverse impact. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered an “adverse affect”.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

The preferred alternative would construct a new employee dormitory in the administrative area at Old Faithful. This area is eclectic in style, predominately modern and not historically significant. It is visually separated from the Old Faithful Historic District so the construction of a new dormitory in this area would have no impact on historic structures. The repurposing of the Old Faithful Lodge Cabins to visitor use cabins would require repairs and up-grades to the interiors of the cabins. Over the years, the interiors of all 28 cabins have been altered, have lost integrity and do not contribute to the National Register eligibility of the exterior of the cabins. The exterior of the cabins would receive in-kind repairs where necessary.

Cumulative Impacts: Past cumulative impacts upgrading and altering the historic interiors of the cabins has adversely impacted the interior integrity of the cabins. The past removal of many of the visitor cabins in the Old Faithful area had a minor adverse impact on the Old Faithful Historic District. The loss of the Employee Pub and the planned future removal of several other historic structures contributing to the Old Faithful Historic District will likely have a minor adverse impact on the historic district. The in-kind repairs to the exteriors and the upgrade of the interiors of the Old Faithful Lodge Cabins will constitute a negligible impact to the cabins. The interiors of the cabins do not contribute to the National Register eligibility of the exterior of the cabins and would not have a visible impact on the Old Faithful Historic District.

Conclusion: When combined with cumulative impacts discussed about the preferred alternative of constructing a new employee dormitory in the Old Faithful Administrative Area and the improvements to the Old Faithful Lodge Cabins to bring them into visitor use service would have minor impacts to historic structures. Construction of the proposed dormitory is outside the historic district. Within the historic district impacts would be direct, minor, local, long-term and adverse due to past removal of historic structures within the historic district. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered a “no adverse affect”.

Impact of Alternative C – Existing Conditions

The no action alternative would continue employee housing in the historic Old Faithful Lodge

cabins. Due to financial constraints, routine maintenance of employee housing structures is less rigorous than up-keep of visitor use cabins and facilities. Therefore, the continued use of the cabins for employee use may have a negligible impact on the exterior up-keep of the cabins.

Cumulative Impacts: The past removal of many of the visitor cabins in the Old Faithful area had a minor adverse impact on the Old Faithful Historic District. The loss of the Employee Pub in 2009 due to a newly active thermal area beneath, and the planned future removal of several other historic structures contributing to the Old Faithful Historic District will again have a minor adverse impact on the historic district. Future routine maintenance and in-kind repairs to the employee cabins will be necessary to maintain their historic integrity.

Conclusion: The no-action alternative when combined with past, present, and foreseeable future action would have minor impacts on the historic Old Faithful Lodge Cabins. The overall project would have direct, minor, local, long-term, adverse impacts due to past removal of historic structures within the historic district. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered a “no adverse affect”.

Cultural Landscapes

Affected Environment

Previously, YNP documented the cultural landscape within the Old Faithful area. The Old Faithful Cultural Landscape Inventory (CLI) identified three primary special organization zones – the Inn and the Lodge zones retain historic integrity although the third zone, the Upper General Store/Housekeeping Area Cabins/Auto Campground has been compromised by the removal of the auto campground and housekeeping cabins in the area. The Old Faithful CLI documented that the natural landscape characterized by the unique thermal features, retains a high degree of integrity and further identified the most important remaining cultural landscape characteristic of the area as the views to the Old Faithful Geyser, which remains the organizing point for the cultural landscape and the location of the significant historic buildings. Automobile circulation was identified as the landscape characteristic of the Old Faithful Developed Area that has been most altered although the pedestrian circulation around the Old Faithful Geyser and the Upper Geyser Basin trail system remains substantially unchanged.

The Old Faithful CLI also identified the removal of original features, such as the Housekeeping Area Cabins, the boulevard, and the buildings that lined it, the amphitheater, and the auto camp as alterations to the historic spatial organization of the landscape. Although many cabins have been removed, enough remain to evoke the importance of automobile tourism. The overall conclusion from the landscape analysis was that the Old Faithful area retained significant landscape features to retain historic integrity. The Old Faithful Cultural Landscape Inventory was provided to the Wyoming State Historic Preservation Office for review after which they concurred with YNP’s determination that the cultural landscape retained integrity sufficient for listing on the National Register of Historic Places. The boundary of the Old Faithful Cultural Landscape does not include the administrative area located south of the Old Faithful Historic District and south of the Grand Loop Road Historic District.

Intensity Level Definitions

Negligible: Impact(s) is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for §106 would be no effect or no adverse effect.

Minor: Adverse - alteration of a pattern(s) or feature(s) of the landscape would not

diminish the overall integrity of the landscape. The determination of effect for §106 would be no adverse effect.

Beneficial - preservation of landscape patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. The determination of effect for §106 would be no adverse effect.

Moderate: Adverse - alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. The determination of effect for §106 would be adverse effect. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate. Beneficial - rehabilitation of a landscape or its patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. The determination of effect for §106 would be no adverse effect.

Major: Adverse - alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. The determination of effect for §106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the National Park Service and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b). Beneficial - restoration of a landscape or its patterns and features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. The determination of effect for §106 would be no adverse effect.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A, following the plans set forth in the 1985 Development Concept Plan for the Old Faithful area, would remove the 71 cabins associated with the Old Faithful Lodge landscape and associated with the historic context of overnight visitor accommodations and the development of concessionaire-provided services at Old Faithful. As discussed above, the cultural landscape of the Upper General Store/Housekeeping Area Cabins/Auto Campground has been previously compromised by the removal of the Auto Campground and Housekeeping Cabins. The removal of the 71 cabins would further impact the historic context and integrity of the cultural landscape. The cabin removal would return the area occupied by the cabins to a more "natural" landscape but the unique and significant characteristics of the natural landscape are the thermal features, of which there are none located in the cabin area. Retuning the area to natural flora would have little impact to the significance of the landscape at Old Faithful.

Cumulative impacts: Past removal of historic cabins, auto camps, photo shop, cafeterias, the entrance boulevard, and pedestrian circulation along with the 1970's modernization of the road system and construction of the modern interchange has had an adverse impact to the cultural landscape at Old Faithful. The construction of the Old Faithful Snow Lodge and the Old Faithful Visitor Education Center contribute to the impact on the historic landscape. The Mission 66 and later construction of large asphalted parking lots has also impacted the Old Faithful landscape. The removal of the 71 cabins would continue to contribute to the impact to the circulation,

spatial organization, historic automobile context, and historic character of the cultural landscape.

Conclusion: Continued removal of historic cabins in the Old Faithful Historic District will have a long-term moderate adverse impact to the patterns and features of the cultural landscape. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered an “adverse affect”.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

The preferred alternative would provide in-kind repairs to the exteriors of the Old Faithful Lodge Cabins and up-grades to the interiors of the cabins to convert them from employee housing to visitor lodging. Although the cabins are within the boundary of the Old Faithful cultural landscape, the cabin interiors are not considered a landscape characteristic. While the fires of 1988 have made parts of the administrative area more visible from the Grand Loop Road, existing buildings, and trees would screen the proposed dormitory from the road. The administrative area is screened from the Old Faithful Historic District and the defined cultural landscape by existing vegetation. The construction of a new employee dormitory outside the boundary of the documented cultural landscape would have no effect on the cultural landscape.

Cumulative Impacts: Past removal of historic cabins, auto camps, photo shop, cafeterias, the entrance boulevard, and pedestrian circulation along with the 1970’s modernization of the road system and construction of the modern interchange has had an adverse impact to the cultural landscape at Old Faithful. The construction of the Old Faithful Snow Lodge and the Old Faithful Visitor Education Center contribute to the impact on the historic landscape. The Mission 66 and later construction of large asphalted parking lots has also impacted the Old Faithful landscape. The preferred alternative would not impact the cultural landscape.

Conclusion: The preferred alternative, construct a new employee dormitory and repurpose cabins associated with the Old Faithful Lodge for visitor use, would have negligible impacts on the Old Faithful cultural landscape. The location of the proposed new employee housing is outside the boundary and viewshed of the documented cultural landscape and therefore will have no impact on the landscape. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered a “no adverse affect”.

Impacts of Alternative C – Existing Conditions

Alternative C would have no impact on the cultural landscape documented for the Old Faithful Historic District and developed area. The character defining features of the landscape would remain as presently expressed.

Cumulative Impacts: Past removal of historic cabins, auto camps, photo shop, cafeterias, the entrance boulevard, and pedestrian circulation along with the 1970’s modernization of the road system and construction of the modern interchange has had an adverse impact to the cultural landscape at Old Faithful. The construction of the Old Faithful Snow Lodge and the Old Faithful Visitor Education Center contribute to the impact on the historic landscape. The Mission 66 and later construction of large asphalted parking lots has also impacted the Old Faithful landscape.

Conclusion: Alternative C would have negligible impacts on the Old Faithful cultural landscape, as currently documented. For the purposes of Section 106 of the National Historic Preservation Act, this would be considered a “no adverse affect”.

SOCIAL, ECONOMIC AND VISITOR RESOURCES

Socioeconomics

Affected Environment

Social and economic environments are primarily affected by changes in visitor levels, visitor spending, park and concessioner employment, and park and concessioner spending in the economy. Yellowstone National Park extends into three different states, including Wyoming, Montana, and Idaho. Most of the property surrounding the Park is managed by the U.S. Forest Service and a few private land owners. The Park plays a prominent role in the social and economic life of the Greater Yellowstone Area. The greater Yellowstone region's economy has grown and diversified dramatically in the past forty years. The trend near the Park has lessened from a heavy dependence on resource extraction and agriculture toward a service-based economy, with significant growth also coming from retirement and investment income. In comparison to other 'wildland economies' (North Cascades, Glacier, Yosemite, Grand Canyon), the greater Yellowstone region has the fastest rates of population in economic growth, but lags behind in the growth of average job wages.

Gateway communities of varying sizes have developed outside the Park-Cody, Dubois, and Jackson in Wyoming and Cooke City/Silvergate, Gardiner, and West Yellowstone in Montana. The Montana gateway communities are on the immediate border of the Park or within a few miles; the Wyoming gateway communities are an hour drive or more from the Park boundary. The gateway communities are relatively small, with populations ranging from less than 150 permanent residents for Cooke City and Silvergate combined to almost 9,000 for Cody. The population of West Yellowstone is approximately 1200 and Gardiner has approximately 850 residents; however the population increases during the summer months with an influx of seasonal workers.

Economic activities supported by visitor use are highly seasonal. June, July, and August are the months of highest use; with 50 percent of the Park's visitation arriving in July and August.

The availability of visitor services varies from community to community. Yellowstone's recreational opportunities tend to create a tourist-based economy in communities surrounding the Park. These communities receive much of their income by providing goods and services to Park visitors and employees. Local businesses also benefit from annual NPS and concessioner expenditures for salaries, goods, and services.

The continuation of the economic downturn will most likely impact not only visitation to the Greater Yellowstone Area but how visitors spend money and the lodging accommodations in which they choose to stay. Many areas throughout the Park offer overnight lodging accommodations. The 2009 Yellowstone National Park Commercial Services Strategy states that there are 2,312 rooms that provide accommodations for up to 6,822 people. This is less than what is stated in the 1974 Master Plan which caps lodging accommodations at 8,300 people. The Old Faithful area offers 557 lodging options that vary from suites to cabins during the summer months. Average occupancy rate is 98.6 % for lodging in YNP mid-April through October. Camping is not available at Old Faithful but is available 16 miles north at Madison Junction. The closest gateway community is West Yellowstone, Montana, which is 30 miles from Old Faithful.

Tourism is a major industry in the town of West Yellowstone. According to data from the Montana Department of Commerce, lodging sales in West Yellowstone has increased steadily from 1996 (\$10.9 million) through 2003 (\$15.4 million). To help West Yellowstone residents benefit from the number of visitors traveling through the community. A 2003 study conducted by the University of Montana, Institute for Tourism and Recreation Research found that most

visitors to the Yellowstone area stayed overnight in lodging accommodations or campgrounds. Other accommodations included guest ranches, vacation rentals, resorts/condominiums or the home of a friend or relative.

The Park concessioner operates visitor services in the Park, including the Old Faithful Lodge Cabins and associated facilities. The occupancy rate is high during peak Park visitation in the summer months. In addition to serving overnight visitors, meals and retail services are provided to a high number of visitors. Law requires that any concession contracts for providing public services should have a reasonable opportunity for profit. A portion of revenues generated by the concessioner are used towards upkeep, maintenance, and capital improvements to the facilities. A small portion of revenue from concessioner operations goes to the Park for oversight of contracts, and management of the concessions program.

Intensity Level Definitions

Available information on socioeconomics was obtained from NPS and concessioner staff, West Yellowstone Chamber of Commerce, Montana Department of Commerce, and the University of Montana, Institute for Tourism and Recreation Research. The definitions for the intensity of impacts to socioeconomics are defined as follows:

- Negligible:** Visitors/businesses would not be affected or changes in visitor use and/or experience would be below or at the level of detection. Any effects would be short-term. The visitor would not likely be aware of the effects associated with the alternative.
- Minor:** Changes in visitor use/businesses would be detectable, although the changes would be slight and likely short-term. The visitor/business would be aware of the effects associated with the alternative, but the effects would be slight.
- Moderate:** Changes in visitor use/businesses would be readily apparent and likely long-term. The visitor/business would be aware of the effects associated with the alternative, and would likely be able to express an opinion about the changes.
- Major:** The impact on visitor use/businesses would be measurable and perceptible and would involve a large number of businesses across the Intermountain West, including several states outside the GYA.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A would result in local, short-term and long-term, direct, minor to moderate, beneficial and adverse impacts. Alternative A would change the availability of visitor lodging and therefore would impact visitor spending and Park and concessioner revenues. Revenue to the surrounding gateway communities, especially West Yellowstone, could be increased if current capacities at lodging facilities outside the Park are not fully utilized.

Cumulative Effects: There would be adverse and beneficial impacts on socioeconomic resources under Alternative A. Coupled with past, present and foreseeable future actions, the incremental contribution of Alternative A to cumulative socioeconomics would be minor.

Conclusion: The no action alternative would be minor to moderate, beneficial and adverse due to all of the Old Faithful Lodge Cabins being removed.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Implementation of Alternative B would result in an increase in available affordable lodging for

approximately 134 overnight visitors at Old Faithful. This increase could cause a potential change in visitor spending in the Old Faithful area as well as potentially requiring up to eight additional staff. However, these impacts on regional and local employment and wages in both the short-term and long-term would be negligible.

While there is a chance that the increased affordable visitor accommodations at Old Faithful would pull visitors from surrounding communities, most lodging both inside and outside the Park remains filled mostly to capacity. A percentage of money would come back to the Park from the increase in revenue from providing these cabins for visitor lodging. This money would offset the costs associated with the cabin repurposing and the construction and maintenance of the new dormitory. This project would be funded by the concessioner responsible for the lodging in the area. Due to the short duration of the construction, the impacts to the local workforce and economy would be negligible and short-term. The addition of 67 visitor cabin units available in the Old Faithful area would have minor beneficial impacts to Park visitors seeking overnight stays in the area and to the concessioner for the opportunity for increased revenues.

Cumulative Impacts: Removal of cabins previously used as visitor lodging and the removal of the Old Faithful campground have drastically decreased the number of visitors that have the opportunity to stay overnight in the Old Faithful area.

Conclusion: Impacts would be direct, indirect, local, minor, short- and long-term, adverse and beneficial to the Park, concessioner, concessioner employees, visitors and gateway communities.

Impacts of Alternative C – Existing Conditions

Alternative C would not result in any short-term or long-term changes in the availability of visitor services or lodging and therefore would not impact visitor spending or concessioner revenues. Revenues to the Park, concessioners and surrounding gateway communities would not be impacted. Under Alternative C, cabin units would not be repurposed and a new employee dormitory would not be constructed and therefore no direct impact to socioeconomic resources would occur.

Cumulative Effects: There would be no adverse or beneficial impacts on socioeconomic resources under Alternative C because conditions would remain as current. Coupled with past, present and foreseeable future actions, the incremental contribution of Alternative C to cumulative socioeconomics would be negligible.

Conclusion: Action alternative C would be negligible due to no changes being proposed.

Visitor Use and Experience Affected Environment

People from around the world come to YNP each year to experience its wonders. Over the past decade, annual visitation to YNP averaged approximately 3 million visitors. Approximately 90 percent of these Park visitors come to the Old Faithful area. Visitation is highly seasonal. June, July, and August are the months of highest use, with 50 percent of the Park's visitors arriving in July and August. The shoulder- season months of May and September receive less use, but the volume is still substantial. Studies done in 1989 and 1992 estimated that 74 to 81 percent of all Park visitors came from outside the surrounding states of Idaho, Montana, and Wyoming. Seven percent of Park visitors are international, with about half of them coming from Canada; Germany contributes the second largest number. About half of the people coming through Yellowstone's entrances are repeat visitors (Littlejohn, Dolsen, and Machlis 1990). The 1974 Master Plan

caps overnight visitor lodging accommodations at 8,300 people. Overnight visitor lodging accommodations in the Park is currently at 6,822 people. The 1979 Grant Village DCP called for an additional 700 lodging units to be built at Grant Village to replace lodging removed from Old Faithful as stated in the 1974 Master Plan. However, to date only 300 lodging units were constructed.

Visitor lodging in the Old Faithful Developed Area consists of 26% of the Park's total visitor lodging. The cabins at Old Faithful are one of the most popular lodging accommodations in the area due to their location in close proximity to the Firehole River, affordability and the unique rustic experience gained from staying there. The closing of the campground in the late 1960s, the removal of cabins for the construction of Snow Lodge, and the use of the Old Faithful Lodge Cabins by concessioner employees have all contributed to a decrease in affordable lodging options for visitors.

Yellowstone National Park, in its Long-Range Interpretive Plan (NPS 2000), established a number of visitor experience goals that the Park would like to be available to visitors. These, in part, include:

- To experience the essence of the park's wild nature;
- To behave in ways that do not hurt themselves or park resources;
- To successfully plan their visits and orient themselves to facilities, attractions, features and experiences;
- To experience programs, media, and facilities that enhance their educational experiences;
- To understand the park's significance; and;

To enjoy themselves, have memorable experiences, and leave feeling enriched.

Intensity Level Definitions

Analyses of the potential intensity of impacts to visitor use and experience were derived from available information on visitor use of Yellowstone National Park and the Old Faithful area, including statistics kept by the Yellowstone Visitor Services Office. The thresholds used to determine the intensity of impacts to visitor use and experience are defined as follows:

Negligible: Impacts would be slight, and if detectable, would be very short-term and localized. Visitors would not likely be aware or affected by them. There would be no noticeable change in visitor use and experience in any defined indicators of visitor satisfaction or behavior.

Minor: Impacts would be detectable but localized and short-term. Visitors would likely be aware of impacts associated with implementation of the alternative, but recreational use and/or experience would not be diminished or improved. Changes in visitor use and/or experience would be slight and detectable, but would not appreciably limit or enhance critical characteristics of the visitor experience. Visitor satisfaction would remain stable.

Moderate: Impacts would be detectable and could be short- or long-term, but would not be localized. Visitors would be aware of impacts associated with implementation of the alternative and visitor use and/or experience would be diminished or improved somewhat. A few critical characteristics of the existing visitor experience would change, and the number of visitors engaging in a specified activity would be altered. Some visitors participating in that activity or visitor

experience might be required to pursue their choices in other available local or regional areas. Visitor satisfaction at the Park would begin to either decline or increase.

Major: Impacts would be detectable, frequent, long-term, and cover a large area. Visitors would be readily aware of impacts associated with implementation of the alternative and visitor use and/or experience would be substantially diminished or increased. A number of critical characteristics of the existing visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. Large numbers of visitors overall who desire to continue using and enjoying that activity or visitor experience would be required to pursue their choices in other available local or regional areas. Overall visitor satisfaction would markedly decline or increase.

Impacts of Alternative A – No Action (1985 Old Faithful Development Concept Plan)

Alternative A proposes all of the Old Faithful Lodge Cabins would be removed. This action would result in the decrease of lodging by 43 cabins (96 units) available for visitors to spend the night at Old Faithful. Even though removal of the cabins might be an adverse effect to those looking for affordable lodging, it may be beneficial to those looking for a more natural experience. Therefore, there would be impacts to visitor use and experience under the no action alternative. Use of the area by visitors would result in continuation of direct and indirect, local, moderate, adverse and beneficial, short- and long-term impacts on visitor use experience.

Cumulative Effects: Cumulative impacts on visitor use and experience are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in YNP. Visitation to Yellowstone increased throughout the early 1990s. In 2010, Park visitation was 3.6 million. The largest effect on visitor use and experience comes from the sheer number of visitors attempting to observe Old Faithful. The opening of the new Old Faithful Visitor Center in 2010 has provided a beneficial service where visitors can obtain general information, orientation, and interpretive and educational information about the Park, its resources, and visitor services. Construction projects in the Park and in the Old Faithful area would continue to occur and have an impact related to construction noise, dust, and restricted use, but each project's effects on visitor use and experience would be independently and collectively evaluated. When added to other past, present, and reasonably foreseeable future actions in the Park, Alternative A would result in moderate, adverse short- and long-term impacts to Park visitor use and experience.

Conclusion: Visitors continue to make this area of the Park a destination regardless of an increase in overnight affordable lodging. Therefore, the no action alternative would have a direct, local, moderate, short- and long-term, adverse effect.

Impacts of Alternative B (Preferred) – Repurpose Cabins and Construct New Dormitory

Alternative B consists of using all of the Old Faithful Lodge Cabins as rental units for visitors during the summer season. There would be a potential increase of approximately 134 overnight visitors at Old Faithful during the summer season. Past visitor comments during scoping periods, those given to uniformed Park employees, and from visitor surveys, have all asked for additional affordable accommodations in the Old Faithful area. Implementation of this project would help meet the objective of providing more affordable lodging options by allowing up to 134 additional visitors some of the most affordable in the Old Faithful area. By repurposing these cabin there would be an increase in affordable lodging by 12% in the Old Faithful area

and 3.1% parkwide. Using all Old Faithful Lodge Cabins for visitor lodging would help address the objective to separate the sometimes conflicting uses of, visitor accommodations vs. employee housing. During construction, visitor access in and around the project area would be limited. Noise and dust from construction activities could also adversely affect visitor use and experience; however, all construction-related impacts would be temporary and cease following construction activities. Direct and indirect impacts would be minor, local, short- and long-term, beneficial and adverse to visitor use and experience.

The increase in visitors housed at the Old Faithful Lodge Cabins would have negligible impacts to other visitor services including food service facilities. The Old Faithful area hosts 6 restaurants ranging from fast food/deli to full service, and 2 general stores, the waiting time for services during peak season can be considerable. These food service facilities serve on average 7,250 meals a day between June 1 and September 15 making it the highest number of meals a day served in the Park. Adding approximately 134 overnight visitors would result in a negligible increase in the waiting time at these facilities.

Cumulative impacts: The impacts from past, present and reasonably foreseeable projects are the same as described in the cumulative effects section for Alternative A. Ultimately, however, the resulting changes would have a beneficial effect on visitor use and experience, particularly with the increase in affordable lodging to summer visitors. Alternative B, in conjunction with these past, present, and reasonably foreseeable projects would result in direct, minor, short- and long-term, beneficial and adverse impacts to visitor use and experience.

Conclusion: While there would be short-term, minor adverse effects due to construction, the long-term effects would be moderate and beneficial.

Impacts of Alternative C – Existing Conditions

Alternative C proposes that no new changes would take place to the existing conditions of the Old Faithful area. There would be no increase in overnight visitors at Old Faithful because the cabins would not be repurposed. There would continue to be the potential for conflicts between visitors and employees housed in the Old Faithful Lodge Cabins due to the adjacent locations and varying functional uses. Therefore, there would be no new impacts to visitor use and experience under the no action alternative. The continued use of the area without cabin repurposing would result in continuation of direct and indirect, local, adverse, minor, short- and long-term impacts on visitor use experience.

Cumulative Effects: Cumulative impacts on visitor use and experience are based on the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in YNP. Visitation to Yellowstone increased throughout the early 1990s. In 2010, Park visitation was 3.6 million. The largest effect on visitor use and experience comes from the sheer number of visitors attempting to observe Old Faithful. The opening of the new Old Faithful Visitor Education Center in 2010 has provided a beneficial service where visitors can obtain general information, orientation, and interpretive and educational information about the Park, its resources, and visitor services. Construction projects in the Park and in the Old Faithful area would continue to occur and have an impact related to construction noise, dust, and restricted use, but each project's effects on visitor use and experience would be independently and collectively evaluated. When added to other past, present, and reasonably foreseeable future actions in the Park, Alternative A would result in minor, adverse short-term impacts to Park visitor use and experience.

Conclusion: Visitors continue to make this area of the park a destination regardless of an increase in overnight affordable lodging. Therefore, the no action alternative would have a direct, local, minor, short-term, adverse effect.

CONSULTATION AND COORDINATION

Internal Scoping

Scoping is a process to identify the resources that may be affected by a project proposal, and to explore possible alternative ways of achieving the proposal while minimizing adverse impacts. Internal scoping was conducted by an interdisciplinary team of professionals from YNP. Interdisciplinary team members met in October and early November 2011 to discuss the purpose and need for the project; various alternatives; potential environmental impacts; past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. The team also gathered background information and discussed public outreach for the project. Over the course of the project, team members have conducted individual site visits to view and evaluate the proposed construction site.

External Scoping

External scoping was conducted to inform the public about the proposal to repurpose the cabin and construct a new dormitory in the Old Faithful area at YNP and to generate input on the preparation of this EA. This effort was initiated with the distribution of a scoping letter, which was mailed to 169 interested parties. In addition, the scoping letter was posted on the NPS Planning, Environment, and Public Comment (PEPC) website. A press release was also sent to local news organizations. The public was given 36 days to comment on the project.

During the external scoping period, 44 pieces of correspondence which included 83 comments were received from the public through postings on the PEPC website and letters. Approximately 52 percent of responders were in support of the action alternative. Other comments were associated with: utilities (water, sewer and plumbing), costs associated with implementing the action alternative, use of sustainable building materials, natural resources, parking and employee housing.

Agency Consultation

A copy of this EA will be forwarded to the U.S. Department of Interior, Fish and Wildlife Service, to allow for consultation in accordance with the Endangered Species Act. Consultation for this project will occur during the public review period of this EA. National Park Service contacted the U.S. Fish and Wildlife Service with regards to federally listed special status species, and in accordance with National Park Service policy. The results of these consultations are described in the Special Status Species section in the Purpose and Need chapter.

In accordance with §106 of the National Historic Preservation Act, NPS provided the Wyoming State Historic Preservation Officer an opportunity to comment on the effects of this project. A letter from the Wyoming State Historic Preservation Officer, dated January 12, 2012 concurred that the interiors of the cabins were not contributing to the National Register eligibility of the cabins. The NPS's "no adverse effect" determination under §106 of the National Historic Preservation Act for the exterior of the cabins is pending and a decision would not be made until a concurrence letter is received.

Native American Consultation

A scoping letter describing the proposed action was mailed to 73 tribal members of Yellowstone's 26 associated tribes in November 2011, to solicit concerns and comments for the proposed project. Two responses were received from Tribes (Colville Confederated and

Confederated Salish and Kootenai Tribes) to state they had no comments regarding the proposed project. The following tribes were consulted:

Assiniboine & Sioux Tribes, Fort Peck
Blackfeet Tribe
Cheyenne River Sioux Tribe
Coeur d'Alene Tribe
Comanche Tribe of Oklahoma
Confederated Salish and Kootenai Tribes
Confederated Tribes of the Colville Indian Reservation
Confederated Tribes of the Umatilla Indian Reservation
Crow Creek Sioux Tribe
Crow Tribe
Eastern Shoshone Tribe
Flandreau Santee Sioux Tribe
Gros Ventre and Assiniboine Tribes
Kiowa Tribe of Oklahoma
Lower Brule Sioux Tribe
Nez Perce Tribe
Northern Arapaho Tribe
Northern Cheyenne Tribe
Oglala Sioux Tribe
Rosebud Sioux Tribe
Shoshone-Bannock Tribes
Sisseton-Wahpeton Sioux Tribe
Spirit lake Sioux Tribe
Standing Rock Sioux Tribe
Turtle Mountain Band of Chippewa Indians
Yankton Sioux Tribe

Environmental Assessment Review and List of Recipients

The EA is subject to a 30-day public comment period. To inform the public of the availability of the EA, the NPS will publish and distribute a letter to various agencies, tribes, and the 169-person mailing list, as well as publish a press release. The document will be available for review on the PEPC website at <http://parkplanning.nps.gov/OldFaithfulCabinDormEA>. Copies of the EA will be provided to interested individuals, upon request.

During the 30-day public review period, the public is encouraged to submit their written comments to NPS, as described in the instructions at the beginning of this document. Following the close of the comment period, all public comments will be reviewed and analyzed, prior to the release of a decision document. The NPS will issue responses to substantive comments received during the public comment period, and will make appropriate changes to the EA, as needed.

List of Preparers

The following persons assisted with the preparation of the EA. All are NPS employees at Yellowstone National Park.

Management:

- Dan Wenk, Superintendent
- Steve Iobst, Deputy Superintendent

Preparers (developed EA content):

- Elaine Hale, Archeologist
- Bianca Klein, Environmental Protection Specialist
- Doug Madsen, Outdoor Recreation Planner
- Vicki Regula, Environmental Protection Specialist

Interdisciplinary Team (developed alternatives, provided technical input and conducted review of the EA):

- David Hallac, Chief, Yellowstone Center for Resources
- George Helfrich, Chief, Division of Concessions Management
- Mary Murphy, Branch Chief of Facilities, Concessions Management
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