



**National Park Service**  
**U.S. Department of the Interior**  
**Yellowstone National Park**

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## Canyon Ranger Station/Emergency Services Building

### Environmental Assessment

October, 2003



*The Canyon Ranger Station near Brink of the Upper Falls, 1921-ca.1956*

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**Wyoming / Montana / Idaho**

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**Canyon Ranger Station/Emergency Services Building  
Environmental Assessment**

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**Yellowstone National Park**

Wyoming / Montana / Idaho

We are pleased to provide you with this *Environmental Assessment* for the construction of a ranger station and emergency services building or buildings within the Canyon Village area of Yellowstone National Park. The purpose of this *Environmental Assessment* and the intent of the public review and comment on this document are to help the park define appropriate levels and kinds of services and facilities to be provided in the park. We would like to hear your opinions concerning the proposed plan and the other alternatives that are described in this document.

This *Environmental Assessment* describes and analyzes the No Action and two alternatives sites for the construction of a dedicated ranger station and emergency services building in the Canyon developed area. Under the No Action Alternative, no ranger station or emergency services building would be built; however, a backcountry permit office would be located in the newly renovated Canyon Visitor Education Center.

This planning effort was initiated in 2002. In April of 2002 the National Park Service mailed a scoping letter to about 160 people/organizations to announce the planning effort. A 30-day review and comment period ended May 10, 2002. During that time, five comments were received. The alternatives were subsequently modified to incorporate public input, and this plan and environmental assessment were written.

This document was prepared to evaluate project alternatives, assess the environmental impacts of implementing each alternative, and to provide the public with an opportunity to comment. Potential impacts of the proposed project to natural resources were assessed including soils, geology, vegetation, water and air quality, wildlife, and threatened and endangered species. Impacts to cultural resources, including prehistoric, ethnographic, and historic resources were also evaluated. Potential impacts of each alternative to visitors and employees are also included.

At present, funding is available to construct a ranger station only. The emergency services facility is also being evaluated in this assessment in the event that additional funding becomes available in the future.

This plan will be on public review for 30 days. Comments are due November 7, 2003, and should be addressed to:

Superintendent  
Attn: Planning and Compliance  
Canyon Ranger Station  
P.O. Box 168  
Yellowstone National Park, WY 82190

For additional information contact the park at the above address or by telephone (307) 344-2017

**Note to Reviewers and Respondents:**

If you wish to comment on the environmental assessment, you may mail comments to the name and address below. Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. **If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations or businesses available for public inspection in their entirety.



# INTRODUCTION

The National Park Service (NPS) is proposing to construct a ranger station and emergency services building (ESB) facility for the Canyon Village area. These facilities are needed to provide ranger offices, storage space, a public contact area, and an operations base for emergency response.

Yellowstone National Park, which was established prior to the statehood of Wyoming, Montana and Idaho, is administered under the exclusive federal jurisdiction, and the NPS is the sole law enforcement authority within park boundaries. The NPS is also responsible for providing all emergency services for the park and park visitors, such as structural and wildland fire response, emergency medical services and search and rescue operations. The primary responsibility for law enforcement, visitor and resource protection, and emergency response operations is assigned to the Division of Resource Management and Visitor Protection (RM&VP). In addition to its other assigned functions, the RM&VP Division is also responsible for field management of natural and cultural resources. Division employees in the Canyon area include four permanent protection (law enforcement) rangers, six seasonal protection rangers, two seasonal resource management specialists, and eight to ten volunteers.

The RM&VP offices and storage areas are currently inadequate and are located in the Canyon Visitor Center, which will be renovated to correct structural and design defects using Recreational Fee Demonstration monies (NPS 2002a). The new Canyon Visitor Education Center will be doubled in size (by adding a second story to the building) in order to accommodate visitor services and educational/interpretive exhibits. An EA of this visitor center rehabilitation project was provided to the public in early 2001, and, following the public comment period and incorporation of substantive comments, the project was approved. Construction activities for this proposed rehabilitation project may be scheduled to begin in fall of 2003.

Early in the planning process for the new visitor education center, it was determined through functional analysis that the nature of most of the operations that occur at the ranger station would more appropriately be located in a facility separate from the visitor education center. However, in order to better serve visitors, adequate and dedicated space for a backcountry permit office was designed into the new visitor education center.

This environmental assessment addresses the purpose and need to construct a dedicated ranger station and an emergency services building in the Canyon area and examines the environmental impacts associated with these facilities. While there is no funding currently available to construct an ESB, the park's long-term goal is to have an ESB facility in the immediate vicinity of the ranger station (currently emergency vehicles are housed in crowded maintenance facilities located within the residential area). Consequently, this EA addresses construction of both facilities.

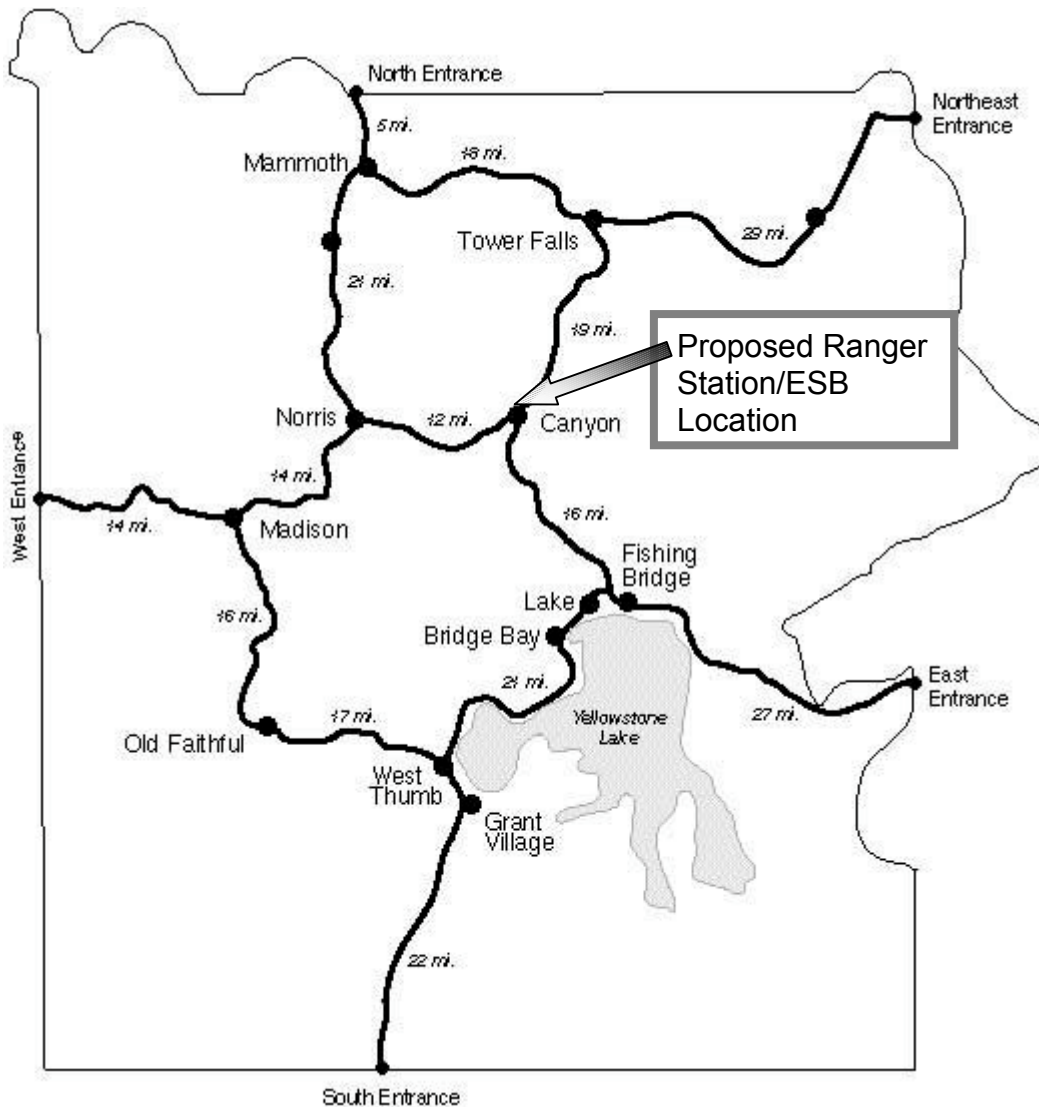


Gateway towns around Yellowstone National Park are Gardiner (pop. 851), Cooke City/Silver Gate (pop. 140), and West Yellowstone in Montana (pop. 1,177); Cody (pop. 8,835), Dubois (pop. 962), and Jackson in Wyoming (pop. 8,647); and Island Park, Idaho (pop. 215), (populations taken from Census 2000). Lodging and a full range of services are provided in all communities. These services complement the services provided in the parks. Airlines provide scheduled service to Bozeman, Montana, and Jackson and Cody, Wyoming, and West Yellowstone, Montana (summer only).

The greater Yellowstone area has developed a national reputation as a recreation center offering activities on National Park and National Forest land, including wildlife and geothermal viewing, hiking, camping, snowmobiling, cross-country skiing, and sightseeing. The parks and forests offer a broad range of activities to the park visitor.

## The Park

Figure 2: Proposed Canyon Ranger Station and Emergency Services Building Location





Yellowstone National Park is a volcanic plateau of recent geologic origin. Its average elevation is 2,438 meters (8,000 feet), but higher mountains surround the plateau except to the southwest, where the plateau descends to the lower Snake River Plain of Idaho. The park encompasses mountains exceeding 3,353 meters (11,000 feet), and canyons and valleys cut by streams flowing from the Continental Divide.

The Canyon development area is located on the Central Plateau, at an elevation of 2,408 meters (7,900 feet). The area lies near the Yellowstone River along glacial fluvial uplands and alluvial stream flood plains. The Yellowstone River cuts through the area consisting of lake-deposited sediments in a complex of slopes having a rolling, hilly appearance. The road and river continue through forested hills. At the south Canyon Rim Drive junction, the river descends the falls of the Grand Canyon of the Yellowstone River.

## PURPOSE AND NEED FOR THE ACTION

The National Park Service is proposing to construct a new building or buildings to house the Resource Management and Visitor Protection operation at Canyon Village. The current office facility used by the RM&VP staff is housed within the Canyon Visitor Center, which is scheduled for an extensive reconstruction project beginning as early as the fall of 2003. The new facility will house new and updated exhibits focusing on the geology of the park. Even though the new facility is somewhat larger than the existing visitor center, the size is not adequate to accommodate the RM&VP office space and storage requirements. The existing Canyon Fire Cache, the facility that currently substitutes for an ESB, is inadequately sized and located in a congested area away from the location of RM&VP staff during the time of the highest frequency of emergency calls requiring a response. This leads to increased emergency response times, and decreases safety for both park visitors and employees.

Earlier planning documents in Yellowstone National Park have not adequately addressed the need for a dedicated and appropriately sized Ranger Station and Emergency Services Building. Critical operational problems that could be addressed by the construction of a dedicated facility for the RM&VP operation include:

### *1. Inadequate office space and public contact areas*

The current Visitor Center-based ranger station was built in 1958 at a time when there was no need for a winter operation and no permanent year-round protection rangers were stationed at Canyon. The present staff of twelve employees, including four year-round employees, currently share a 14' x 15' office that was conceived for a smaller and seasonal operation. There are no private areas to interview victims, witnesses, or suspects of crimes nor is there space to care for visitors requiring medical assistance. Confidential activities such as employment interviews, employee evaluations, and counseling sessions impact the rest of the staff's access to the common office area.

The Canyon Visitor Education Center project would use current allotted RM&VP space for additional interpretive functions, thereby making this amount of space unavailable for RM&VP operations. The existing workroom, emergency equipment cache and law enforcement storage areas would also be used for interpretive purposes under this project. As a result, no work facilities or public contacts spaces would be available for RM&VP employees in the Canyon area, compromising employee effectiveness and public safety. For this reason, a new RM&VP facility needs to be constructed in the area.

### *2. Increased emergency response times*

The current situation of having the ranger staff and the emergency services equipment in separate locations increases emergency response times. The location of the current RM&VP staff offices is housed in the current visitor center. The existing Canyon Fire Cache (used as Canyon's present ESB) is located approximately one mile from the current visitor center, and is housed in a double-stall garage bay within the Canyon maintenance compound. The bays house an ambulance and a 23-foot fire engine in addition to providing limited storage areas for Emergency Medical Service (EMS) supplies and structural fire equipment.

Presently, emergency responses involving the use of the ambulance and/or the fire engine require employees to drive from the RM&VP offices through a congested intersection and an employee housing area to reach the emergency vehicles; then the oversize emergency vehicles are driven back

through the housing area and the intersection to reach the developed area where most of the calls originate. After-hours responses are delayed by the fact that the Canyon Fire Cache is 0.7 miles by road from the apartment buildings where the RM&VP staff live, and located in the opposite direction

from the majority of emergency services calls. The result is a longer response time to incidents such as structural fire calls and critical medical calls in which every additional minute relates to a decreased likelihood of success in saving lives and property.

3. *Inadequate security for sensitive activities and equipment*

Increasing security requirements for law enforcement equipment, evidence and fee monies could be better met in a dedicated facility with restricted access to security-sensitive areas. At present, there are no private rooms to interview victims, witnesses, or suspects of crimes. This results in the displacement of other employees from the work area when these activities occur, and can decrease the effectiveness of the interviewer.

## RELATIONSHIP OF THIS PLAN TO OTHER PLANS

This plan is closely linked to the *Canyon Visitor Center Rehabilitation Plan*, which will result in renovation and construction of a new 22,000 square-foot visitor education center. A Finding of No Significant Impact (FONSI) was signed and the plan was approved in 2001 (NPS 2002a). Early in the planning process for the new visitor education center, it was determined through functional analysis that the nature of most of the operations that occur at the Canyon Ranger Station would more appropriately be located in a facility separate from the visitor education center. However, in order to better serve visitors, adequate and dedicated space for a backcountry permit office was designed into the new Canyon Visitor Education Center.

The Yellowstone National Park Community Plan (NPS 1992) evaluated the Canyon residential area and proposed alternatives for the location of additional employee residences and community facilities. One four-plex has been built at Canyon to replace substandard trailers. Alternative B of this document proposes the Ranger Station/ESB will be located in close proximity to the location of a proposed community center under the Community Plan, but this would not interfere with the location of a community center; no funding request for the community center has been submitted at this time.

## MANAGEMENT OBJECTIVES

Yellowstone National Park was established in 1872 as the nation's first national park. Part of the enabling legislation language states:

The tract of land... lying near the headwaters of the Yellowstone River... is reserved and withdrawn from settlement, occupancy, or sale under the laws of the United States, and dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people; and all persons who locate, or settle upon, or occupy any part of the land thus set apart as a public park... The purpose of Yellowstone National Park is to preserve for the benefit and enjoyment of present and future generations its geologic features, natural systems and processes, and history.

All park planning efforts must take into consideration the purpose and significance of Yellowstone National Park to the American public and abide by its obligation to be an effective environmental steward when altering the landscape of the park. The benefits and impacts of additional development must be weighed against these values, and impacts must be mitigated to the extent possible.

A component of the visitors' ability to experience the "benefit and enjoyment" of a national park is the extent to which managers can provide for their safety and effectively respond to their aid when necessary. According to NPS management policy, the saving of human life takes precedence over all other considerations. Visitor safety and protection are achieved in part by:

- enforcing applicable laws and park regulations;
- reducing hazards and maintaining facilities used by visitors;
- educating visitors about park resources and associated hazards;
- managing natural and cultural resources effectively to preserve their integrity while reducing any associated public hazard; and
- providing search, rescue, emergency medical and fire-rescue services when needed.

The construction of the proposed Canyon Ranger Station and Emergency Services Building facilitates meeting these objectives by:

- providing adequate, secure and efficient workspaces for RM&VP employees;
- providing adequate security for sensitive activities and equipment;
- increasing efficiency and safety of emergency responses;
- providing improved safety and traffic flow;
- improving employee quality of life;
- providing appropriate and accessible public contact space.

## ISSUES AND CONCERNS

Early planning discussions among the park's interdisciplinary team for this project led to the identification of a number of issues to be addressed in this environmental assessment. The issues and concerns identified by the team included:

- Impacts to bears and other threatened and endangered species
- Cumulative grizzly bear and other wildlife habitat loss
- Impacts to wetlands
- Visual impact, including night lighting
- Impact on adjacent historic areas
- Use of previously disturbed areas
- Visitor safety and services with respect to public access and response times for emergency services.
- Security for law enforcement operations and efficiency of resource management and visitor protection operation.
- Employee health and safety/quality of life
- Comparative costs of construction
- Traffic circulation
- Potential impacts to archeological resources

## SCOPING

Public scoping for this project was carried out between April 10 and May 10, 2002, and five comment letters were received. One letter was received from the Wyoming Office of Federal Land Policy stating that the State of Wyoming had no official position on this proposal; attached was a letter from the State Engineer's Office requesting that the park follow the proper water rights application process if this project would result in changing the use of any existing water rights. The park also received a solicitation from an environmental consulting firm requesting bidding information if this environmental assessment were contracted out.

The substantive comments of the remaining two letters and the park's responses are summarized below:

- An individual voiced concern about the following issues: sewage system requirements for the project; impacts to amphibian, reptile and small mammal habitat; use of previously undisturbed areas; light and noise pollution; cumulative impacts and overall development in the Canyon area.

**RESPONSE:**

*Sewage System:* This project would not generate additional loads on the sewage system at Canyon as it results only in changing the location an already existing work force at Canyon with no net change to the number of people using the system. Sewer line improvements are scheduled in the future, and are funded from a different source than this project; therefore, this project does not impact the funding or scheduling of these improvements. A new sewage treatment facility at Canyon was completed in 1997.

*Habitat, Disturbed Areas, Light and Noise Pollution, Cumulative Impacts:* These issues are addressed in the "Affected Environment and Environmental Consequences" section of this EA.

- An environmental organization emphasized the importance of minimizing the footprint of this project and park development in general. They inquired about the possibility of relocating the facilities outside the park; and expressed concern about the impact on wildlife, particularly grizzly bears.

**RESPONSE:**

*Footprint:* The total footprint for this project will be approximately one acre. The alternative of not building a facility to house the RM&VP operation is analyzed under the "No-Action Alternative."

*Relocation:* The agency has a legal mandate to protect the public. A paramount consideration is the location of the facility so as to allow for a timely emergency response. Relocation of the facility to a gateway community is neither practical nor desirable.

*Impact on Wildlife:* This issue is addressed in the "Affected Environment and Environmental Consequences" section of this EA.

## IMPACT TOPICS

Impact topics were used to focus the evaluation of the potential consequences of the proposed action, alternative B, and no action alternative. Impact topics were identified based on legislative

requirements, topics specified in *Director's Order #12 and handbook* (NPS 2001c, and park specific information). Impact topics for the Canyon Ranger Station/Emergency Services building are presented in Table 1.

Table 1: Impact Topics Retained or Dismissed from Further Study, for the Yellowstone National Park Canyon Ranger Station/Emergency Services Building Environmental Assessment

<b>Impact Topic</b>	<b>Retain or Dismiss</b>	<b>Relevant Regulations or Policies</b>
Geology and Soils	Retain	<i>NPS Management Policies 2001</i>
Wetlands and floodplains	Dismiss	Executive Order 11988, Executive Order 11990, Rivers and Harbors Act, Clean Water Act, <i>NPS Management Policies 2001</i>
Vegetation	Retain	<i>NPS Management Policies 2001</i>
Ecologically critical areas or other unique natural resources	Retain (as Geothermal Resource)	Wild and Scenic Rivers Act, 36 CFR 62 criteria for national natural landmarks, <i>NPS Management Policies 2001</i>
Water quality and hydrology	Dismiss	Clean Water Act, Executive Order 12088, <i>NPS Management Policies 2001</i>
Air quality	Retain	Federal Clean Air Act (CAA), CAA Amendments of 1990 (CAAA), <i>NPS Management Policies 2001</i> , and Utah Administrative Code, Title 307
Visual Resources	Retain	<i>NPS Management Policies 2001</i>
Wildlife	Retain	<i>NPS Management Policies 2001</i>
Endangered or threatened species and critical habitats	Retain	Endangered Species Act; <i>NPS Management Policies 2001</i>
Species of Special Concern	Retain	<i>NPS Management Policies 2001</i>
Prime and unique agricultural lands	Dismiss	Council on Environmental Quality 1980 memorandum on prime and unique farmlands
Wilderness	Dismiss	Director's Order 41; <i>NPS Management Policies 2001</i>
Cultural resources	Retain	Section 106 of the National Historic Preservation Act; 36 CFR 800; National Environmental Policy Act; Executive Order 13007; Director's Order 28; <i>NPS Management Policies 2001</i>
Social/Economic Environment	Retain	40 CFR 1500 Regulations for Implementing NEPA
Employee Quality of Life	Retain	<i>NPS Management Policies 2001</i>
Park operations (Emergency response)	Retain	<i>NPS Management Policies 2001</i>
Public health and safety	Retain	<i>NPS Management Policies 2001</i>
Visitor use and experience	Retain	Organic Act; <i>NPS Management Policies 2001</i>
Energy requirements and conservation potential	Dismiss	<i>NPS Management Policies 2001</i>
Environmental justice	Dismiss	Executive Order 12898
Indian trust resources	Dismiss	Department of the Interior Secretarial Order No. 3206, Secretarial Order No. 3175
Natural or depletable resource requirements and conservation potential	Dismiss	<i>NPS Management Policies 2001</i>
Conflicts with land use plans, policies, or controls	Dismiss	<i>NPS Management Policies 2001</i>
Sustainability/long-term management	Dismiss	National Environmental Policy Act, 40 CFR 1500 Regulations for Implementing NEPA, <i>NPS Management Policies 2001</i>

## IMPACT TOPICS DISMISSED FROM FURTHER STUDY

Many of the impact topics presented in table 1 were dismissed from further study after site visits, discussions with resource specialists, and after internal and public scoping was completed. Impact topics that had no or negligible impacts were dismissed. Impact topics included for further analysis were those whose impacts could not be immediately determined.

### **Those dismissed include:**

#### **Prime and Unique Agricultural Lands**

Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. The Canyon Ranger Station project is within the boundaries of YNP. No park lands are classified as agricultural, therefore, no unique agricultural values or prime farmlands are included in this project. Therefore, agricultural lands were dismissed as an impact topic.

#### **Wetland and Floodplain Management (Executive Order 11990, Executive Order 11988, Rivers and Harbors Act, Clean Water Act, NPS Management Policies 2001)**

Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

Before taking an action, each agency shall determine whether the proposed actions would occur in a floodplain-- for major Federal actions significantly affecting the quality of the human environment, an evaluation is require to be prepared under Section 102 (2) (C) of the National Environmental Policy Act. There are no floodplains in the project area, therefore floodplains were dismissed as an impact topic. Similarly, there are no wetlands in the project area, therefore, wetlands were dismissed as an impact topic.

**Water Resources and Water Quality:** The National Park Service polices require protection of water quality consistent with the Clean Water Act. Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge of dredged or fill material or excavation within U.S. waters.

No water quality resources are in the area of the proposed alternatives. This project would have no effect on water quality. No impairment of park water quality would occur from the proposed project under any alternative.

**Wilderness:** Neither the no-action nor the other alternatives proposed in this document would occur in Yellowstone National Park's proposed wilderness areas.

**Conflicts with land use plans, policies, or controls:** Neither the no-action nor the other alternatives proposed in this document would conflict with National park Service plans, policies, or controls.

**Energy Requirements and Conservation Potential:** Refer to the impact topic "Sustainability and long-term management" for the rationale for dismissal.

### **Environmental Justice**

According to the Environmental Protection Agency, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Presidential 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 the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities

and low-income populations and communities. The proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Draft Environmental Justice Guidance (July 1996). Therefore, environmental justice was dismissed as an impact topic.

**Indian Trust Resources:** Indian trust assets are owned by Native Americans but held in trust by the United States. Requirements are included in the Secretary of the Interior's Secretarial Order No. 3206, "American Indian Tribal Rites, Federal – Tribal Trust Responsibilities, and the Endangered Species Act," and Secretarial Order No. 3175, "Departmental Responsibilities for Indian Trust Resources." The Bureau of Indian Affairs (BIA) and the National Park Service have formed a joint agency, the National Interagency Fire Center (<http://www.fire.nps.gov/bia>), to handle wildfire management on Indian trust lands based on fire management plans approved by the Indian landowner. According to NPS personnel, Indian trust assets do not occur within Yellowstone National Park.

**Natural or Depletable Resource Requirements and Conservation Potential:** Refer to the impact topic "Sustainability and long-term management" for the rationale for dismissal.

**Sustainability and Long-Term Management:** Sustainability is the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of development and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques.

Project actions would not compete with, dominate park features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity associated with wetlands.

The NPS *Guiding Principles of Sustainable Design* (1993) directs NPS management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. Sustainability principles have been developed and are followed for interpretation, natural resources, cultural resources, site design, building design, energy management, water supply, waste prevention, and facility maintenance and



operations. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources.

## ALTERNATIVES

The no-action alternative addresses not constructing a Canyon Ranger Station and ESB. The remaining two action alternatives presented differ primarily in location. The design of the buildings may be moderately affected by their location, but in each case, the ranger station building would be approximately 2,000 square feet and would house RM&VP offices, an employee locker room, a public contact area, storage facilities for law enforcement and emergency services, and a training room. The ESB would contain approximately 2,400 to 3,400 square feet of garage and storage space to house structural fire engines, an ambulance, storage facilities, and workshop. Including adequate parking space (12 spaces), the entire facility under alternatives A and B would be sited on less than 1 acre of land.

### NO ACTION ALTERNATIVE

The no-action alternative would involve no additional construction of a Canyon Ranger Station and Emergency Services Building. The *Canyon Visitor Center Rehabilitation Plan* (NPS 2001) would accommodate the Backcountry Permit Office within the new facility, but ranger offices, storage facilities, and other essential RM&VP functions would be displaced. With the no-action alternative”, RM&VP personnel in the Canyon area would most likely have to perform office functions at their individual residences, minimizing interaction between co-workers and interfering with personal use of the residences. There would be no public facility available for park visitors to contact or be interviewed with park law enforcement rangers at Canyon.

### ALTERNATIVE A (PREFERRED)

Under alternative A, the NPS proposes to construct facilities including a Ranger Station and Emergency Services Building to serve RM&VP functions in the Canyon Village area. The ranger station building would be approximately 2,000 square feet, and would provide RM&VP offices, an employee locker room, a public contact area, storage facilities for law enforcement and emergency services, and a training room. The ESB would be constructed at a later date when funding becomes available. This ESB facility would contain approximately 2,400 to 3,400 square feet of garage and storage space to house structural fire engines, an ambulance, workshop, and storage facilities. Including adequate paved parking space (12 spaces), the entire facility would be sited on less than 1 acre of land.

Alternative A would relocate the Canyon Ranger Station and Emergency Services Building along an electrical line utility corridor east of the YPSS Service Station, west of Canyon Campground and north of the North Rim Drive across from the Canyon Village Historic District. The area is currently accessed by an unpaved service road that leads to an area used by a winter “yurt-camping” concession. The proposed ranger station and emergency service building would be located near the entrance to this road (see Figure 3). The area is located on flat upland terrain surrounded by a moderately dense stand of lodgepole pine forest of approximately 60-100 years old.

Construction of a ranger station/emergency services building would include removal of some existing lodgepole overstory where the building, parking, and access road would be built. Excavation of the building site, foundation construction, the building footprint, access road and parking lot for the facility would occur within less than one acre of land.

While the location of this proposed facility is not located within the Canyon Village Historic District, this alternative would incorporate a design that blends with the architectural style of the area. The location of this alternative would be in an area near existing visitor facilities of Canyon. While this would be considered a semi-public visitor facility, the Canyon Ranger Station would be accessible to anyone needing to talk to a park ranger. The location would be set back from the beginning of the North Rim Drive road. A screen of existing lodgepole pine trees would be retained so that the facility will not appear as an intrusion on the landscape.

Alternative A was selected as the preferred Alternative by the interdisciplinary team due to its proximity to other visitor services, its geographic separation from the employee housing area, decreased emergency response times, and increased security. These factors are discussed in more detail in the section “Affected Environment—Social and Economic Impacts.”

## **ALTERNATIVE B**

Under alternative B, the NPS proposes to construct a Canyon Ranger Station and an Emergency Services Building facilities to serve RM&VP functions in the Canyon Village area. The ranger station building would be approximately 2,000 square feet, and would provide RM&VP offices, an employee locker room, a public contact area, storage facilities for law enforcement and emergency services, and a training room. The ESB would be constructed at a later date when funding becomes available. This ESB facility would contain approximately 2,400 to 3,400 square feet of garage and storage space to house structural fire engines, an ambulance, workshop, and storage facilities. Including adequate parking space (12 spaces), the entire facility would be sited on less than 1 acre of land.

Alternative B would relocate the Canyon Ranger Station and Emergency Services Building to a utility corridor on an abandoned road bed running east-west from the Tower-to-Canyon Road in the vicinity of the Canyon employee residential area (see Figure 3). This corridor is on the northwest corner of Canyon Junction west of the Yellowstone Park Service Station (YPSS) and is approximately 300 feet long. It runs through flat upland terrain within a moderately dense stand of lodgepole pine forest with a uniform age class of approximately 60-100 years old.

Construction of a ranger station/emergency services building would include removal of some existing lodgepole overstory where the building, parking, and access road would be built. Excavation of the building site, foundation construction, the building footprint, access road and parking lot for the facility would occur within less than one acre of land.

As with Alternative A, this alternative would incorporate a design that blends with the architectural style of the area. The location of this alternative would be in an area near existing visitor facilities of Canyon. While this would be considered a semi-public visitor facility, the Canyon Ranger Station would be accessible to anyone needing to talk to a park ranger. The location would be set back from the beginning of the Grand Loop Road, north of Canyon Junction. A screen of existing lodgepole pine trees would be retained so that the facility will not appear as an intrusion on the landscape.

## **MITIGATION FACTORS COMMON TO ALL ACTION ALTERNATIVES**

Mitigations to the potential impacts of these alternatives are discussed within each impact topic. They include: Potential cultural, natural, and human impacts of the construction of a Canyon Ranger Station and Emergency Services Building can be minimized by

1. the restoration of grizzly bear habitat in the Canyon area in an amount equal to the land area impacted by this project (alternatives A and B)
2. management measures to prevent the availability of food sources during construction and use of the facilities (alternatives A and B)
3. vegetation management practices that will revegetate the impacted area while preventing exotic plant invasion (Appendix A) (alternatives A and B)
4. Design will be compatible with historic architecture of near-by Historic Canyon Village (alternatives A and B)
5. site selection based on sound resource assessments;
6. use of environmentally sound building methods and materials; and actions such as vegetation management and use of appropriate technology in lighting, sound management, site disturbance and visual screening.

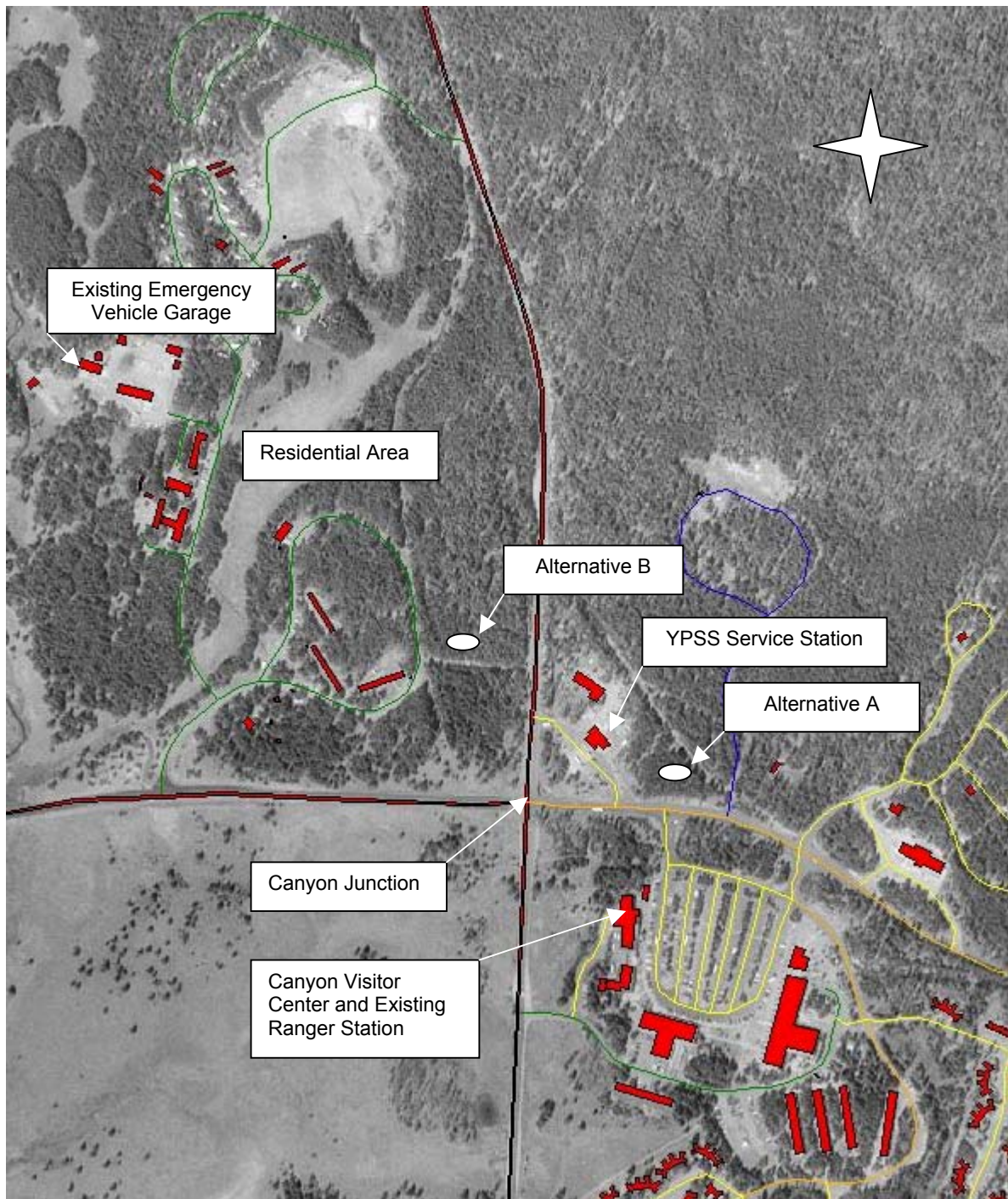


Figure 3 - Canyon Junction Developed Area and Proposed Action Alternative Locations

Table 2. Alternatives Comparison

<b>Alternatives/ Issues</b>	<b>Adequate RM&amp;VP Office/ESB Space</b>	<b>Adequate Security for Sensitive Activities and Equipment</b>	<b>Emergency Response Times</b>	<b>Traffic Flow</b>	<b>Employee Quality of Life</b>	<b>Public Access &amp; Visitor Contact</b>
<i>No Action—No Ranger Station, ESB in Maintenance Compound</i>	None would be provided	No dedicated space allotted, interviews would impact daily operations, equipment would not be securely stored.	Improved—RM&VP staff would be working out of residences.	Emergency vehicles still responding through residential area.	Moderate Impact—RMVP staff would work out of residences—interfering with personal use of residence	No public access would occur at Permit Office in Visitor Education Center—use not programmed in design
<i>Alternative A—Ranger Station and ESB East of YPSS near entrance to Yurt Camp</i>	Approximately 2,000 sq. ft. office space and 2,400 to 3,400 sq. ft. of ESB space would be constructed.	Dedicated secure space would be constructed for sensitive interviews and equipment storage.	Somewhat Improved—RM&VP staff workplace, ESB in closer proximity; residences across intersection Alt. A offers better daytime response.	Emergency vehicles do not respond through residential area or intersection.	Limited effect on YPSS dormitory.	Good access from Canyon North Rim Drive  Located in close proximity to other visitor use facilities
<i>Alternative B—Ranger Station and ESB on utility access corridor between Residential Area and Dunraven Road</i>	Approximately 2,000 sq. ft. office space and 2,400 to 3,400 sq. ft. of ESB space would be constructed	Dedicated secure space would be constructed for sensitive interviews and equipment storage.	Improved—RM&VP staff workplace, ESB and residences in close proximity. Alt. B offers better night response.	Visitor access is from least congested side of intersection; emergency vehicles do not respond through residential area, but must cross intersection.	Some Impact—visitor use facility located in close proximity to residential area; loss of separation of function.	Good access from Canyon-Dunraven Road  Located across Canyon Junction from other visitor use facilities

Table 3. Resource Impact Comparison

<b>Alternatives/ Issues</b>	<b>Endangered Species – Grizzly Bear Habitat</b>	<b>Vegetation Previously Disturbed Site</b>	<b>Historic District – Archeological Resources</b>	<b>Viewshed</b>	<b>Amphibian Habitat/ Wetlands</b>
<i>No Action—No Ranger Station, ESB in Maintenance Compound</i>	No Ranger Station/ESB- No effect on bear habitat. No effect on Canada lynx, gray wolf, bald eagle	NA	NA	NA	No impact on wetlands or amphibian habitat
<i>Alternative A— Ranger Station and ESB East of YPSS near entrance to Yurt Camp</i>	Ranger Station/ESB proposed in development bubble—some grizzly bear habitat loss (< 1 acre), May effect, not likely to adversely effect grizzly bear, bald eagle, Canada lynx, gray wolf.	Semi-disturbed (powerline) Some vegetation disturbed (< 1acre)	Located on periphery of Canyon Village Historic District—SHPO concurrence needed. No archeological resources on site	Facilities in dense lodgepole stand adjacent to Canyon Village Historic District	Drier of the two alternatives may have lesser impact on amphibian habitat.  No wetland impact— Facilities in upland terrain
<i>Alternative B—Ranger Station and ESB on utility access corridor between Residential Area and Dunraven Road</i>	Ranger Station/ESB proposed in development bubble—some grizzly bear habitat loss (< 1 acre), May effect, not likely to adversely effect grizzly bear, bald eagle, Canada lynx, gray wolf.	Semi-disturbed (water utility corridor) Some vegetation disturbed (< 1acre)	Located on periphery of Canyon Service Area Historic District and Grand Loop Road—SHPO concurrence needed. No archeological resources on site	Facilities in dense lodgepole stand adjacent to Canyon residential area and Dunraven Pass Road	Alternative B is on slightly moister soil and on a possible amphibian travel route; may have greater impact (although negligible) on amphibians.  No wetland impact – Facilities in upland terrain

## **ALTERNATIVES CONSIDERED BUT REJECTED**

### *Construct Canyon Ranger Station and ESB north of YPSS on Dunraven Road:*

This site is located on the east side of the Tower-to-Canyon Road north of the YPSS Service Station. The area has not been previously disturbed, and the terrain makes the building site marginal. Distance to utility hook-ups would also make the construction costs associated with this alternative prohibitive.

### *Ranger Station in the Canyon Village Historic District; emergency vehicles remain in maintenance compound:*

This proposal would locate a dedicated ranger station building behind the Canyon Visitor Center in the open area southeast of Canyon Junction. The visual intrusion of the facility along the Lake-to-Canyon Road and the impact on the Canyon Village Historical District led to the rejection of this alternative.

### *Ranger Station and ESB in Yurt Camp:*

This location is north of the area described in Alternative A and at the terminus of an unpaved service road running north-south from the North Rim Drive. It was rejected based on the distance to utility access, which would make construction costs prohibitive. Development of this site would also displace a business permit holder's winter operation.

### *Ranger Station and ESB in Fitness Trail site:*

This site is located within the Canyon residential area. This area was rejected because it would require visitors to enter the residential area to access the ranger station, increasing traffic in the area and interfering with the residential function of the area. Preliminary resource evaluations also revealed possible historic sites and a small wetland, which would both be impacted by the development.

### *Ranger Station only in new Visitor Education Center:*

This alternative was discussed at length during the planning process for the rehabilitation of the Visitor Center. It was rejected because it was determined through functional analysis that the nature of most of the operations that occur at the ranger station would more appropriately be located in a facility separate from the visitor education center. It would also not allow for the relocation of the ESB.



## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The "No Action Alternative" would result in no direct impact to the natural and cultural resource environment because it does not require additional development. However, it is not the environmentally preferred alternative. The operational inefficiencies caused by the lack of a facility to house the RM&VP function would have a long-term adverse impact on enforcement rangers' abilities to act as guardians of the environment and effectively preserve the park's resources for succeeding generations. Employees would be denied safe, productive surroundings in their workspace. The "No Action" alternative does not allow for adequate employee workspace. Employee quality of life would be adversely affected by the lack of work facilities as many work activities would be relocated to private residences.

Alternative A allows for adequate workspace for employees, increasing employee effectiveness in protecting and preserving park resources. The public is also provided with convenient access to protection rangers, increasing safety and enjoyment of the park. The location also avoids impacting the employee residential area use, increasing the quality of life for employees of all divisions.

Alternative B also allows for adequate workspace for employees, increasing employee effectiveness in protecting and preserving park resources. The visitor experience is somewhat affected by the less-convenient and less-than-obvious location of Alternative B in comparison with Alternative A. Employee quality of life would also be affected by

Alternative B's close proximity to employee housing. Alternative B was also identified as having a greater potential impact on amphibian habitat.

Because of the reduced impact on employee quality of life, the improved quality of visitor experience provided by its proximity to the Canyon Developed area, and its lesser potential impact on amphibian habitat, Alternative A was selected as the Environmentally Preferred Alternative.

# AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## Overview

Canyon Village is a major developed area in Park County, Wyoming, near the center of Yellowstone National Park (see Figure 1). Canyon is named for its primary visitor attraction, the Grand Canyon of the Yellowstone River. Visitor facilities include concession lodging (approximately 600 rental units) and meal service, general stores, a service station, laundry and shower facilities, horseback riding/corrals, a 280-site campground, and a visitor center and ranger station. National Park Service facilities include an employee housing area, maintenance buildings and storage yard, gas pumps, and a recreational ball field (see Figure 2).

Lodging for visitors is available from early June to mid-September. Food services are available from late April to mid-October. Other facilities are open from early-May to mid-September. The service station remains open in winter providing service and fuel to winter visitors. A warming hut is provided in the winter, and a “yurt-camp” operation provides overnight facilities during the winter months.

## Methodology for Determining Impacts

Potential impacts are described in terms of type (**beneficial or adverse**), context (effects are **site-specific, local, or regional**), **direct** versus **indirect** effects (immediate vs. later in time – farther in distance), duration (**short or long-term**), and **intensity (negligible, minor, moderate, or major)**, and **cumulative** or “additive effects. The thresholds of change for the intensity of impact topics are generally defined as follows:

<b>No Effect-</b>	no detectable impacts
<b>Negligible-</b>	the impact is at the lowest levels of detection
<b>Minor-</b>	the impact is slight, but detectable
<b>Moderate-</b>	the impact is readily apparent
<b>Major-</b>	the impact is a severe or adverse impact or of exceptional benefit

The methodology varies for impact topics and therefore, the definitions for the thresholds of change for intensity of the impact are different for each impact topic discussed.

## Impairment

In addition to determining the environmental consequences of the preferred and other alternatives, NPS Management Policies 2001 (NPS 2000) and NPS Director’s Order 12 (NPS 2001c) requires analysis of potential effects to determine whether or not actions would impair park resources.

The fundamental purpose of the National Park System, established by the 1916 Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park

resources and values. However, the laws do give NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. A major adverse impact to any park resource or value may constitute impairment.

For all impact topics analyzed, adverse impact would be likely to constitute impairment to the extent it affects a resource or value whose conservation is:

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

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Because the impacts described in the alternatives do not severely affect a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Yellowstone National Park; (2) key to the natural or cultural integrity of the memorial or to opportunities for enjoyment of the memorial; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values resulting from this proposal.

## Natural Resources

### Geology and Soils

#### Methodology and Intensity Thresholds

Analysis of the potential intensity of impacts to geology and soils were derived from the available soils and information and park staff's past observations of the effects on soils from both visitor use and construction activities. The thresholds of change for the intensity of impacts to soils may be adverse or beneficial and are defined as follows:

- Negligible-** the impact is at the lowest levels of detection and causes very little or no physical disturbance, compaction, or unnatural erosion.

- Minor-** the impact is slight, but detectable with few perceptible effects of physical disturbance, compaction, or unnatural erosion.
- Moderate-** the impact is readily apparent and has measurable effects of physical disturbance, compaction, or unnatural erosion.
- Major-** the impact is severe or adverse or of exceptional benefit and has severe effects of physical disturbance, compaction, or unnatural erosion.

### **Geology and Topography**

Yellowstone National Park lies in a geologically dynamic region of the northern Rocky Mountains. The park is noted for its geologic features that are the result of volcanism, glaciation, and continued geological processes fueled by a continental hotspot. The Canyon area itself is located in the caldera of a huge, collapsed volcano. Throughout geologic time numerous lava flows have filled the caldera with subsequent periods of glacial flows covering and further sculpted the landscape.

Canyon Village is situated between the Washburn Range to the north and Hayden Valley to the south. Elevation is approximately 2,408 meters (7,900 feet). Terrain is predominantly flat to gently rolling. At the southern end of the developed area the terrain drops sharply into the Grand Canyon of the Yellowstone.

Selection of either Alternative A or Alternative B would require some grading for a building site and construction of an access road to the Canyon Ranger Station and ESB facilities. As both sites are relatively flat, topographical changes either through contouring or from erosion should be minimal. Utilities would be trenched, placed, and back-filled as much as possible at the road edge. Both action alternatives would disturb approximately one acre of land. The no-action alternative would not impact topography. Long-term, indirect, cumulative effects on park geology and topography would be negligible from this project.

### **Soils**

Soils in the Canyon area are derived from the rhyolitic sands and gravels that were originally deposited as glacial till or glaciofluvial alluvium. The resulting soils are moderately coarse textured inceptisols with medium to loose base saturation.

Under both action alternatives, topsoils would be disturbed. Topsoil would be stockpiled and saved for revegetation purposes. No effects would occur with the no-action alternative. The project would have minor, direct, short-term impacts the soils on site.

### **Geothermal Resources**

Yellowstone contains three-fifths of the world's geysers and countless examples of other geothermal features such as hot springs, travertine terraces, mud pots, and fumaroles. Thermal areas influence Yellowstone's flora and fauna in the winter. Hot water creates microclimates that allow certain plants and insects to remain active and growing. Warm ground keeps these areas relatively free of snow, enabling elk and bison to feed in the

otherwise snowbound interior of Yellowstone. Hot springs flowing into lakes and rivers keep some waters from freezing, increasing habitat for waterfowl and bald eagles during the winter. The Canyon development occurs within the Yellowstone caldera, but there are no geothermal features within these development. Geothermal areas near the development include Washburn Hot Springs 6 kilometers (4 miles) north of Canyon, Mud Volcano 15 kilometers (10 miles) South of Canyon. No geothermal resources are in the area of the proposed alternatives.

### Conclusion

Long-term, indirect, cumulative effects on park geology and topography would be negligible from this project. This project would not impair park geologic resources.

Topsoil conservation and revegetation efforts would have minor, direct, short-term effects. However, long-term, indirect, cumulative effects on park geology and soils would be negligible from this project. This project would not impair park soil resources.

No geothermal resources are in the area of the proposed alternatives. This project would have no effect on geothermal resources. Geothermal resources would not be impaired by implementing this project.

## **Vegetation**

### Methodology and Intensity Thresholds

Analyses of the potential intensity of impacts to vegetation were derived from the available information and reports on Yellowstone's plant communities and park staff's past observations. Specific site specific surveys were conducted by park plant specialists for rare plants, exotic vegetation, and hazard trees in the areas of the alternatives. The thresholds of change for the intensity of impacts to vegetation may be adverse or beneficial and are defined as follows:

- Negligible-** the impact is at the lowest levels of detection and causes very little perceptible change to a plant population or individuals of species or a resource.
- Minor-** the impact is slight, but detectable with few perceptible effects to a plant population or individuals of species or a resource.
- Moderate-** the impact is readily apparent and has measurable effects to a plant population or individuals of species or a resource.
- Major-** the impact is severe or adverse impact of exceptional benefit and has severe effects to a plant population or individuals of species or a resource.

### **Forest Canopy**

Canyon is situated in a forest dominated by lodgepole pine *Pinus contorta* with occasional subalpine fir *Abies bifolia*, Englemann spruce *Picea englemanni*, and

whitebark pine *Pinus albicaulis*. As trees are removed from the mature lodgepole pine cover type, the remaining adjacent trees often become at risk for blowing down in strong winds. The removed trees had helped to anchor roots and support trees adjacent to them. As trees are removed when spaces are cleared for the construction of these facilities, hazard trees could be created that would also need to be removed.

The forest understory is variable, but often includes such species as pinegrass *Calamagrostis repens*, elk sedge *Carex geyeri*, grouse whortleberry *Vaccinium scoparium*, and bluejoint reedgrass *Calamagrostis canadensis*. Other species present include arnica *Arnica cordifolia*, arrowleaf groundsel *Senecio triangularis*, and a variety of grasses and mosses. Bear foods in the Canyon area include yampa *Perideridia gairdneri*, strawberries *Fragaria virginiana*, sedges *Carex sp.*, and timothy *Phleum sp.*. Area exotic species include Canada thistle *Cirsium Arvense*, butter-and-eggs *Linaria vulgaris*, and yellow sweet clover *Melilotus officinaliss*. The forest is interspersed with meadows of various sizes that contain numerous shrub, grass, and forb species.

Hazard tree assessment and mitigation would be required with implementation of either action alternative. Both the alternatives A and B would remove approximately 1 acre of lodgepole pine overstory for the construction of ranger station, ESB, and associated parking areas. When the forest canopy is opened for a construction project, remaining trees may become more vulnerable to wind-throw and could become hazards to human safety and property. Hazard trees would be removed before they would fall and cause damage or injury.

The project would have a moderate long-term affect on the forest canopy and understory in the area of the proposed ranger station and ESB for Alternatives A and B. The no-action alternative would have no effect on the forest canopy and understory.

### **Rare Plants**

While there are no plant species protected by state law in Wyoming and only one federally listed taxa that occurs in the southeast of Wyoming, there are many species that are quite rare within the state. The only species of special concern known to occur in the Canyon developed area is thread rush *Juncus filiformis*, which occurs in a modified or artificial pond in the south end of the softball field located on the north side of the employee housing area. An inspection of both alternative sites did not reveal any thread rush plants Thread rush is a widespread circumboreal species that is more common to the north and, therefore, on the peripheral edge of its distribution in Wyoming. This species is only known to occur in Yellowstone National Park, Grand Teton National Park, and the Medicine Bow National Forest in Wyoming.

A survey in August 2002 of the proposed sites did not reveal any rare plants. Most of the affected area is subalpine fir/grouse whortleberry habitat type with a canopy dominated by lodgepole pine. Associated species include strawberry, elk sedge, and other sedge species. The non-forested swales are dominated by bluejoint reedgrass and sedges.

There are no federally listed or candidate (category I) plant species that are known to occur in the park. However, there are two endemic plant species that occur only in Yellowstone National Park—Ross' bentgrass *Agrostis rossiae* which occurs in geothermal areas along the Firehole and in the Shoshone Geyser Basin, and Yellowstone sand verbena *Abronia ammophila* which is restricted to sandy lakeshores around Yellowstone Lake. Neither species was found in the Canyon area. This project is not expected to affect any rare plants in the area.

### **Exotic Vegetation**

At least 185 species of non-native plants are known to have occurred in Yellowstone National Park, and many of these species are invading natural communities (Olliff et al. 2001). While the Canyon area has experienced less severe invasions of non-natives plants than other areas of the park due to its distance from park boundaries and higher elevation, several of these exotic species are found in the Canyon area, including Canada thistle, butter-and-eggs, yellow sweet clover, Orange hawkweed, and spotted knapweed. Most non-native plants are found in disturbed areas such as developments and road corridors. The potential for proliferation of non-native plants during construction operations is a concern. Contractors would be required to adhere to proper construction and precautions, including washing of equipment before it enters the park. 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 (see Vegetation Management for Construction in Appendix A). Park RM&VP staff would monitor and control new exotic plant infestations that occur associated with this project.

After construction activities are completed, revegetation with native plant materials would return disturbed areas to a more natural state. Plant species used would reflect the vegetation native to the area and would not include plants known to attract bears. The long-term effects on exotic vegetation of either action alternative would be minor after completion of the revegetation efforts and the monitoring and control of exotic plants. The no-action alternative would not affect exotic vegetation.

### Conclusion

Disturbance to vegetation would be mitigated by topsoil conservation, revegetation and noxious weed monitoring and control efforts. The project would have a moderate long-term affect on the forest canopy and understory in the area of the proposed ranger station and ESB for Alternatives A and B. The no-action alternative would have no effect on the forest canopy and understory. This project is not expected to affect any rare plants in the area. The long-term effects on exotic vegetation of either action alternative would be minor after completion of the revegetation efforts and monitoring and control of exotic plants.

Cumulative impacts to park vegetation by implementing either of the action alternatives along with the mitigation measures stipulated, would have minor direct, short-term effects. Long-term, indirect effects, and cumulative effects on park vegetation would be minor to moderate from this project. Vegetation impacts from any of the alternatives would not be of a degree that would constitute impairment to park vegetation.



## Air Quality

### Methodology and Intensity Thresholds

Analyses of the potential intensity of impacts to air quality were derived from monitoring data derived from within the park, and observations by park staff of past construction activities. The thresholds of change for the intensity of impacts to air quality may be adverse or beneficial and are defined as follows:

- Negligible-** the impact is at the lowest levels of detection and causes very little perceptible change to air quality.
- Minor-** the impact is slight, but detectable with few perceptible effects to air quality.
- Moderate-** the impact is readily apparent and has measurable effects to air quality.
- Major-** the impact is severe or adverse impact of exceptional benefit and has severe effects to air quality.

Yellowstone National Park is designated as a mandatory Class I area under the Clean Air Act, as amended. This designation provides the highest level of air quality protection for internal and external emissions. Monitoring of air quality is required by law to avert violations of national air quality standards, to preserve views and visibility, and to prevent health and safety risks to residents and visitors. Air quality is monitored in the park at two locations. The Tower Ranger Station is part of the National Atmospheric Deposition Program network, and particulate matter as well as precipitation volume and chemistry are monitored there. At Lake, there is a semi-automatic station that measures air pollutants (such as fine particulates, sulfates, nitrates, organic and inorganic carbon, and heavy metals), an ozone analyzer and calibrator, and meteorological equipment. Levels of mercury in the air are also monitored at Lake.

There are currently no major point sources of air pollution in the vicinity of the park, and air quality and visibility are generally considered excellent. Occasional periods of degradation may occur due to regional haze or forest fire smoke. The major source of air pollutants in the area are those emitted locally by motor vehicles (automobiles, busses, snowcoaches, and snowmobiles) concentrated along motorized routes and in developed areas; smoke from wood fires (stoves, fireplaces, and campfires); boilers for the generation of steam and electricity; and road material processing equipment.

Effects would be temporary and limited to the duration of construction. Dispersed dust and mobile exhaust emissions would be caused by truck and equipment activity. Contractor activities would comply with state and federal air quality regulations, and contractors would operate under applicable permits.

### Conclusion

The short-term impacts to air quality would be minor, localized, and limited to the duration of construction. There would be no long-term impacts on air quality or visibility

in the Canyon area as a result of this any of the alternatives. There would be no long-term, cumulative effect on air quality resulting from this project. No impairment of park air quality would occur from the proposed project under any alternative.

## Visual Resources

### Methodology and Intensity Thresholds

Analyses of the potential intensity of impacts to visual resources were derived from staff observations in the field and from within each of the alternative locations based upon proposed building design and size. The thresholds of change for the intensity of impacts to visual resources may be adverse or beneficial and are defined as follows:

- Negligible-** the impact is at the lowest levels of detection and causes very little perceptible change to the existing viewshed.
- Minor-** the impact is slight, but detectable with few perceptible effects or changes to the existing viewshed.
- Moderate-** the impact is readily apparent and has measurable effects or changes to the existing viewshed.
- Major-** the impact is severe or adverse impact of exceptional benefit and has severe effects or changes to the existing viewshed.

Visual quality affects both visitor enjoyment and perception of Yellowstone. Canyon Village is a developed area, with many highly visible buildings. Both building sites being considered are located off the roadway where government buildings and activities would be largely masked from public view by trees.

The short-term visual effects of the proposed Canyon Ranger Station and Emergency Services Building would include construction equipment. Contractors would be required to maintain an organized construction site and to minimize visual impacts on park residents and visitors in the area.

Lighting would be the minimal required for security and safety purposes and fixtures would be positioned in the best possible way so as not to create unnecessary glare around or beyond the building. Visual impacts at night could be more of a concern under Alternative B than A, due to Alternative B's location along the Grand Loop Road where there is presently no night lighting visible. This effect could be mitigated by proper lighting choices for the buildings. Alternative A is located in an area near other visitor use facilities that have visible lighting at night.

In both alternatives, the removal of trees during site preparation will be restricted to the minimum required to complete the project, but could result in the completed buildings being partially visible from the roadway--the North Rim Drive in the case of Alternative A, or the Grand Loop Road for Alternative B.

### Conclusion

The no-action alternative would have no affect on visual resources. The proposed project under either alternatives A or B would have a minor long-term, direct impact on visual resources. Cumulative effects on visual resources would be minor. This would not impair this park resource.

## **Wildlife (Including, Threatened, Endangered, and Species of Special Concern)**

### Methodology and Intensity Thresholds

Analyses of the potential intensity of impacts to wildlife were derived from all available information and reports on Yellowstone's animal populations including park staff's past observations of mammals, birds, amphibians and reptiles, fish, threatened and endangered species, and species of special concern. Discussions with park wildlife specialists occurred for wildlife groups listed above to determine affects to various species. Where possible map locations of sensitive resources were compared between alternative locations. Informal consultation with the U.S. Fish and Wildlife Service occurred as part of this evaluation process. The thresholds of change for the intensity of impacts to wildlife may be adverse or beneficial and are defined as follows:

- Negligible-** an action that could result in a change to a individuals of a population of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.
- Minor-** an action that could result in a change to individuals of a population of a species or a resource. The change would be small and localized and of little consequence.
- Moderate-** an action that would result in some change to a population of a species or a resource. The change would be measurable and of consequence to the species or resource but more localized.
- Major-** an action that would have a noticeable change to a population or individuals of a species or resource. The change would be measurable and result in a severely adverse or major beneficial impact, and possible permanent consequence upon the species or resource.

### **Mammals**

Many of the 60 known mammals that occur in Yellowstone National Park are found in the Canyon area. Large mammals found in the vicinity of Canyon are bison, moose, elk, mule deer, white-tailed deer, bighorn sheep, cougar, pronghorn, wolf, grizzly bear, and black bear. Smaller mammals include coyote, wolverine, badger, porcupine, red squirrel, red fox, pine marten, weasel, and a variety of mice and vole.

Red fox are present in Yellowstone National Park and in meadows and forests near Canyon junction. There has been one reported sighting of a fisher in the Canyon area. Badgers are rare but have been reported near Canyon. Although bobcats are rarely seen in the park, the habitat near Canyon may support these animals.

Mountain lions have been reported in the Canyon area. This area is generally summer range for mountain lions. Snow depths in the park interior prevents much resident lion activity south of the park's northern range. Smaller mammals such as weasels, pine marten, and red squirrels are common in the forests of central Yellowstone near Canyon. Some temporary displacement of some individuals may happen during construction activities. Some temporary displacement of some individual mammals may occur during construction activities, however, long-term impacts to various species' populations are not expected.

Riparian wildlife species such as beaver, river otter, muskrats, and mink are found along the Yellowstone River and all but beaver along Cascade Creek. River otters have been sighted on the Yellowstone River between Fishing Bridge and Canyon. Because neither alternative of this project occurs in riparian areas, there will be no effect on any of these species.

Small groups of bull bison are found in the Canyon area throughout the year. It is extremely rare to see cow/calf bison herds around Canyon Village. Wintering populations of bison are found in this area mainly along wind swept ridges and stream bottoms of the Yellowstone River and within geothermal areas such as Mud Volcano south of Canyon and Norris Geyser Basin west of Canyon.

Elk, mule deer, and moose make use of habitats in the Canyon area. Bighorn sheep are found on the slopes of Mount Washburn, north of Canyon. One mountain goat was sighted in 2001 on top of Dunraven Peak, four miles north of the Canyon developed area. Pronghorn are not known to occur in the Canyon area. There would be no foreseen impacts to ungulates as a result of either alternative considered for this project.

Black bears are dispersed throughout the park. Although there is some habitat overlap with grizzly bears, black bears are more likely to be found in forested cover types than grizzly bears, which dominate the meadows. Both black bears and grizzly bears occupy a wide range of habitats on a seasonal basis and forage on an array of natural diet items. Spring foraging includes winter-killed or weakened ungulates and early emergent vegetation, both found on lower elevation and within geothermal habitats. Summer foods include numerous grass and forb vegetation species found in wet and moist sites, cutthroat trout in tributaries of Yellowstone Lake, roots such as those from biscuit root and yampa in moist to dry open meadows, and insects such as ants in mature forests. Fall foods for bears include mostly whitebark pine seeds found in high elevation timber stands (Mattson et al. 1992).

The Canyon developed area lies within and adjacent to important bear habitat that has a high level of use by bears. The Canyon Village development had the second highest

average ranking of all recreational developments in Yellowstone National Park when measuring habitat quality, cub production, bear activity, bear-human conflicts, and management actions.

A loss of bear habitat resulting from this project was identified as an issue during the scoping phase. The impact on grizzly bears is analyzed in the “Threatened and Endangered Species” section. Long-term, direct effects of either alternative would be minor to mammal populations due to the small area of land affected and its proximity to an existing developed area. The no-action alternative would not affect mammals.

### **Birds**

Yellowstone National Park is home to a wide array of seasonally migrant and year-round resident bird species. Two threatened or endangered bird species occur in Yellowstone National Park (See “Threatened and Endangered” section).

The black-backed woodpecker is primarily found in conifers, particularly spruce-fir forests or mixed lodgepole pine/spruce-fir forests. This bird is rarely observed along the Canyon area because the habitat is almost exclusively lodgepole pine. The three-toed woodpecker is more frequently found than the black-backed woodpecker. The habitat requirements of this species primarily include coniferous forests, especially disturbed or recently burned sites with dead or dying trees. The common loon prefers to nest on mountain lakes, in particular Yellowstone Lake. Harlequin ducks are typically found in fast-moving waters lined with boulders or cobbles. They have been found on occasion in the Yellowstone River north of Canyon, primarily during the month of May. The northern goshawk is rarely observed in the Canyon area; when observations do occur they are more of an incidental nature and are usually in conjunction with the spring and fall migrations. No neotropical species would be adversely affected by the project.

Two bird species of special concern to Yellowstone National Park are found within the confines of the proposed development—the boreal owl and the great gray owl. Both utilize coniferous trees for nest sites and cover, yet hunt the open meadows.

Another sensitive species—trumpeter swans—are found in the Yellowstone River south of Canyon Village; this species is addressed in the “Species of Concern” section of this document.

No effect on avian species would be expected from the no-action alternative. Long-term, direct effects of either action alternative would be negligible to bird populations due to the small area of land affected and its proximity to an existing developed area. Trees would be sparingly removed, and the construction footprint minimized to the greatest extent possible. No disturbances would occur in important raptor hunting areas such as open areas or wet meadows.

### **Amphibians and Reptiles**

Impacts on amphibian and reptile species were cited as a concern during the scoping phase of this project.

A survey of amphibian and reptile populations in the Canyon area was conducted in 1995 along the Grand Loop Road near Canyon (Patla 1998). Breeding ponds for the (boreal) chorus frog and the Columbia spotted frog were found in ponds south and west of the Canyon junction, and in a forested pond north and west of the junction, north of alternative A location site. Blotched tiger salamanders are known to exist in a man-made concrete cistern approximately 1,200 meters (1097 yards) south of the junction and west of the Grand Loop Road. The western (boreal) toad, a species that has been declining in the Yellowstone area (Koch and Peterson 1995), was not found during amphibian surveys but a dead western (boreal) toad was found recently in the Canyon area. A reptile, the wandering garter snake, inhabits the Canyon area. Another reptile, the rubber boa snake, was not found during surveys but two dead specimens were found on roads in the Canyon area (D. Patla, pers. comm.).

Neither alternatives A and B for the proposed construction of the Canyon Ranger Station/ESB lie in known amphibian habitat or in areas of known migration between identified habitats. However, the Alternative B site location may be more likely to occur in potential amphibian migration corridors and may also be a more moist site constituting potential upland habitat for amphibians (D. Patla, pers. comm.).

The site nearest the YPSS Service Station (alternative A) would have a slightly less impact on area amphibian populations than would alternative B. Long-term, direct effects of alternative A would be negligible to amphibian and reptile populations. Long-term, direct effects of alternative B would be minor to amphibian and reptile populations.

### **Fish**

Fish, both native and introduced, are an important component of the park's animal life. When explorers first visited Yellowstone, the vast majority of lakes, and most streams above major waterfalls or cascades, were devoid of fish. As a result of stocking for increased angling opportunities in early years, the Yellowstone fishery is now comprised of 12 native and five introduced species, including both the native westslope and the Yellowstone cutthroat trout, longnose dace, arctic grayling, longnose sucker, and the introduced brown, brook, and rainbow trout. This mixture provides high-quality angling opportunities for visitors as well as food for birds, otters, grizzly bears, and other wildlife. The Yellowstone River near the Canyon area provides important Yellowstone cutthroat trout habitat. The Cascade Creek drainage supports many species of fish, the most noteworthy being a reintroduced population of adfluvial or lake-dwelling Arctic grayling, which were stocked in Cascade Lake (the headwaters of Cascade Creek) and the Gibbon River. This population of Arctic grayling is not considered "sensitive" compared to the fluvial (river-dwelling) populations of this species. None of the alternatives for this project would impact fish resources.

### Conclusion

Long-term, direct effects of either alternative would be minor to mammal populations due to the small area of land affected and its proximity to an existing developed area.

Cumulative effects to black bears and other mammal species would be mitigated by bear precaution measures and would be minor. The no-action alternative would not affect mammals. Mammal populations within the park would not be impaired by this project.

Long-term, direct effects of either alternative would be negligible to bird populations due to the small area of land affected and its proximity to an existing developed area. Cumulative effects to bird species would be negligible. No impairment to avian resources would occur.

Long-term, direct effects of alternative A would be negligible to amphibian and reptile populations. Long-term, direct effects of alternative B would be minor to amphibian and reptile populations. Cumulative effects to amphibian and reptile species would be negligible. Due to the small area of land affected and its proximity to an existing developed area amphibian and reptile populations within the park would not be impaired by implementation of this project.

None of the alternatives for this project would impact fish resources. No long-term, direct effects of any alternative would occur to fish populations. Cumulative effects to fish species would not occur. No alternative would impair fish species within Yellowstone National Park.

Wildlife species such as mammals, bird, amphibians, and fish would not be impaired by this project.

### **Threatened and Endangered Species**

Four species protected under provisions of the Endangered Species Act of 1973 (as amended) are present in Yellowstone National Park. The grizzly bear, bald eagle, and Canada lynx are classified as threatened. The gray wolf was reintroduced into Yellowstone in 1995 and 1996 and is classified as a nonessential experimental population. Although additional flexibility for management of such a population is allowed under the final rule and special regulations promulgated in 1994 (59 FR 60252), wolves that are part of the experimental population are considered a threatened species on any National Park Service or National Wildlife Refuge System lands.

The whooping crane is listed as endangered, but is no longer considered a species found in Yellowstone National Park. The U.S. Fish and Wildlife Service (USFWS) removed the peregrine falcon from the list of threatened and endangered species in 1999. Although no longer endangered, the peregrine falcon (as with other migratory birds), their eggs, parts, and nests would continue to be protected from unauthorized killing, possession, transportation, and importation by the Migratory Bird Treaty Act. Also, federal requirements for de-listing of the peregrine falcon mandate that populations will be monitored for the next 12 years, and that data on at least two generations be collected so as to ensure the population stability of the species.

### **Grizzly Bear**

Fewer than 1,000 grizzly bears are thought to reside in six recovery areas of Montana, Wyoming, Idaho, and Washington. In 1983, the Interagency Grizzly Bear Committee was formed to better manage the six ecosystems identified as grizzly bear recovery areas. This recovery area includes Yellowstone National Park, where the species is protected as prescribed in the Grizzly Bear Recovery Plan (USFWS 1993).

The greater Yellowstone grizzly bear population is considered one of the largest of the recovery populations in the lower United States and is estimated to have a minimum population of 353 bears (Gunther, pers. comm). Grizzlies range over 2.2 million hectares (5.5 million acres) within the greater Yellowstone area; nearly 40 percent of this range (0.9 million hectares or 2.2 million acres) is within Yellowstone National Park. Yellowstone's bear management program is directed toward preserving and maintaining the grizzly bear population as part of the park's native fauna while providing for visitor safety; recovery and management of the grizzly bear is of the highest priority.

Developments in grizzly bear habitat may increase human-caused mortality of bears by increasing the potential for bear-human conflicts, and due to concern for human safety, bears are often removed from the population (Gunther et al. 1998). In previous planning for the construction of a Canyon Contractor Camp, computer modeling showed that the addition of 45-60 RV sites could potentially increase grizzly bear management actions by up to 15percent, and human-caused bear mortality by up to 13% (NPS 2001a). The increase of management actions was based upon the added overnight stays of people in the Canyon development area. Because the proposed action, construction of a Canyon Ranger Station/ESB, would not increase the overnight capacity of people staying in the area, bear-human conflicts and bear mortality should not be increased. The potential for bear-human conflicts may occur with a small influx of workers during the construction of these facilities.

The Canyon area is considered one of the higher quality bear habitats in Yellowstone National Park (Gunther et al. 1998). The proposed Canyon Ranger Station/ESB would create approximately one acre of disturbance within the Canyon development. Although the location of the proposed Ranger Station/ESB would be within the Canyon developed area, this action would be considered a one-acre loss of lower-quality bear habitat.

To mitigate the potential bear-human conflicts and loss of bear habitat as a result of the project, the following measures would be implemented:

1. Construction activities would be managed through conducting ranger talks for contract workers on living and working in bear country. Park and contract crews working on the project would be educated in bear safety and in proper work procedures to ensure food and garbage security. These informational talks would be followed up with strict enforcement of park regulations that are intended for the protection of bears and other wildlife.



2. Food facilities would be minimal for the proposed ranger station/ESB and would be limited to a staff break room. While bear-proof garbage containers would be placed at the ranger station/ESB, there would be no picnic tables available to park visitors.
3. Restoring one acre of bear habitat would be accomplished by reclaiming an equivalent amount of disturbed lands in the Canyon area. Three informal pullouts and social trails along the North Rim drive located east of the Canyon development would be restored using topsoil and vegetation available from the construction site and other projects.

#### Conclusion

Long-term, direct effects of either alternative would be minor to grizzly bear populations due to the small area of land affected and its proximity to an existing developed area. Cumulative effects to grizzly bears would be mitigated by bear precaution measures and would be minor. Taking into consideration the mitigation measures, and the small area affected being within the Canyon development, this project **may affect, but not likely to adversely affect** the threatened grizzly bear population. Grizzly bears would not be impaired by this project.

#### **Bald Eagle**

The bald eagle is currently the only bird in Yellowstone classified as threatened under the Endangered Species Act. Resident and migrating bald eagles can be found throughout the park. Sightings have been reported year-round along watercourses such as the Lamar, Lewis, Yellowstone, Madison, and Firehole rivers. Resident bald eagles begin defending territories in late January, display courtship behavior in February, and begin nesting, laying eggs, and incubating in March and April. Bald eagles are most sensitive to human activity during the nesting period (Montana Bald Eagle Working Group 1994, Greater Yellowstone Bald Eagle Working Group 1996). Bald eagles prey on waterfowl and fish during the nesting season, and waterfowl and carrion in the winter months. Slightly larger concentrations occur in the park in the winter, primarily due to open rivers, large concentrations of waterfowl, and an abundance of carrion. Bald eagles are observed year-round on the Yellowstone River near Canyon and along the Gibbon River. Bald eagles do occasionally forage in the Canyon area; however, the developed area does not support any bald eagle nesting activity nor is it considered essential habitat for the bald eagle or any of its prey species (McEneaney 1997). Nesting sites occur primarily along the shores of Yellowstone, Shoshone, Heart, and Lewis lakes and along the shorelines of several of the larger rivers in the park.

#### Conclusion

Long-term, direct, and cumulative effects of either alternative would be negligible to bald eagle populations due to the small area of land affected and its proximity to an existing developed area. Because bald eagles do not nest in the Canyon area, the proposed project **may affect, but is not likely to adversely affect** the bald eagle population.

#### **Canada Lynx**

Lynx are considered rare in the greater Yellowstone area and are believed to use habitat in dense forests away from traveled areas. From 1987-1996, there were four reported

lynx sightings in Yellowstone National Park; two of these lynx observations were by biologists (Robison et al. 1997). Although none of the observations were located near the Canyon area, the proposed sites are within potential lynx habitat. However, the sites lack the forest cover types and prey species that are found in high quality habitats, and habitat quality at these locations is considered poor.

No lynx were detected while conducting lynx surveys in the area in June of 2000, and no lynx sightings have been reported in the Canyon area since 1887. No road-killed lynx have been reported either within or adjacent to the Canyon Village developed area and no sign of snowshoe hares (their primary food source) were detected at the proposed sites (Gunther et al. 2000).

### Conclusion

Long-term, direct, and cumulative effects of either alternative would be negligible to Canada lynx populations due to the small area of land affected and its proximity to an existing developed area. The proposed project **may affect, but is not likely to adversely affect** the Canada lynx population.

### **Gray Wolf**

Gray wolves were eliminated by humans from the northern Rocky Mountains by the 1930s and placed on the endangered species list in 1973. After years of research and planning, it was determined that wolves should be re-established in Yellowstone National Park in order to restore this key predator species to the ecosystem. Fourteen wolves were captured in Canada and released in the park in 1995. Another 17 wolves were captured and released in 1996. As of December 2002, there were approximately 273 gray wolves in 31 packs within the greater Yellowstone area (D. Smith, YNP, pers. comm.). Wolves in Yellowstone are designated as an experimental population, and therefore, no areas are designated a critical habitat for wolves.

Currently, gray wolves are not known to frequent the areas proposed for construction of the Canyon Ranger Station and Emergency Services Building. Use of the Canyon development area by wolves is not likely because wolves avoid areas of high human activity and prefer to follow large suitable prey. Human-caused mortality and the availability of prey are the two most limiting factors for wolf populations. To date, most human-caused mortality in the Yellowstone ecosystem is the result of management removals (mostly related to livestock depredations), poaching, and by collisions with vehicles. Within Yellowstone National Park, human-caused wolf mortality is neither from management removals or poaching, but is exclusively caused by automobile collisions (a total of eleven wolves). One vehicle-caused fatality occurred in the Canyon area just west of Canyon Junction. The proposed project is not expected to increase any of these sources of mortality within the park and thus would not have any direct impact on wolves. Prey species for wolves are considered abundant in the park. Elk are the primary prey species. While wolves have killed prey in the Canyon area, no wolf pack has focused its activities here. Wolves follow prey and frequent the valleys near Canyon on established ungulate winter ranges because of the abundance of elk and bison.

### Conclusion

The proposed project would not be expected have any significant impact on elk or any of the other species preyed upon by wolves. Long-term, direct, and cumulative effects of either alternative would be negligible to gray wolf populations due to the small area of land affected and its proximity to an existing developed area. The proposed project **may affect, but is not likely to adversely affect** the gray wolf population.

### **Species of Special Concern.**

#### **Wolverine**

Wolverines, which are very wide-ranging and rarely seen scavengers, have been reported seven times since 1986 in the vicinity near Canyon but not in the Canyon development area (S. Chin, YNP Bear Mgmt. Office, Pers. Comm.). Wolverine sightings are likely due to the presence of ungulates and the potential for winterkill foraging opportunities. Although wolverines occur in YNP, whether or not individuals are entirely resident and/or breed in the park are unknown. The no-action alternative would not affect wolverine populations. Both action alternatives would have a negligible affect on wolverines.

#### **Peregrine Falcon**

Peregrine falcons reside in Yellowstone from April through October, nesting on large cliffs. There have been several adult breeding pairs in the park including activity in the Grand Canyon of the Yellowstone River. Peregrine falcons are summer residents and are found nesting near the Canyon area during the summer season, but not in the immediate vicinity of the Canyon development area, or the area of the proposed project. They are also known to occasionally hunt in the Canyon area meadows. The no-action nor both action alternatives would not affect peregrine falcon populations.

#### **Trumpeter Swan**

Trumpeter swans remain in the Yellowstone River near Canyon year-round and are joined by winter migrants. The trumpeter swan is a species of special management concern in Yellowstone. Up to nine pairs nest in Yellowstone, and depending on the number of migrants spending at least part of the year here, in winter the population may increase to somewhere between 40 and 300 birds. In winter, swans require slow-flowing open water habitat that is sometimes available due to geothermal activity. However, extreme cold temperatures in Yellowstone may make these scarce, and swans relocate outside the park. Swans require a long season for the young to mature enough to fly, and the area's severe climate makes this area marginal for breeding. Severe weather is the primary cause of poor swan reproduction in Yellowstone. Trumpeter swans are found along both the Hayden Valley and the Gibbon River near the Canyon area, primarily from mid-October through February. There is no evidence of swans nesting in the Canyon development area or the proposed project areas. The no-action alternative would not affect trumpeter swan populations. Both action alternatives would have a negligible affect on trumpeter.

### Conclusion

All alternatives are located within an existing development “bubble” and will have negligible long-term, direct or cumulative adverse effect on the wolverine population. The construction activities and the use of the proposed Canyon Ranger Station/ESB would have no long-term, direct or cumulative effect on peregrine falcons under any alternative. The proposed project would have negligible long-term, direct or cumulative adverse affect on trumpeter swan populations due to the small area of land affected and its proximity to an existing developed area. The proposed project under the no action or the two action alternatives would not impair wildlife species of special concern.

## **Cultural Resources**

### **(Including Historic, Prehistoric, and Ethnographic Resources)**

#### Methodology and Intensity Thresholds

In order for an archeological resource or an historic structure to be eligible for the National Register of Historic Places it must meet one or more of the following criteria of significance: A) associated with events that have made a significant contribution to the broad patterns of our history; B) associated with the lives of persons significant in our past; C) embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; D) have yielded, or may be likely to yield, information important in prehistory or history.

An archeological resource or historic building or structure must also possess integrity of location, design, setting, materials, workmanship, feeling, association (*National Register Bulletins: Guidelines for Evaluation and Registering Archeological Properties; How to Apply the National Register Criteria for Evaluation*).

For purposes of analyzing potential impacts to archeological resources and historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

- Negligible-** the impact is at the lowest levels of detection – barely measurable with no perceptible consequences, either adverse or beneficial, to archeological resources or historic structures.
- Minor-** Adverse impact – disturbance of a site(s) results in little, if any, loss of significance or integrity and the National Register eligibility of the site(s) is unaffected. For purposes of Section 106, the determination of effect would be *no adverse effect*.
- Beneficial impact – maintenance and preservation of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Moderate-** Adverse impact – disturbance of a site(s) does not diminish the significance or integrity of the site(s) to the extent that its National Register eligibility is jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Beneficial impact – stabilization of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Major-** Adverse impact – disturbance of a site(s) diminishes the significance and integrity of the site(s) to the extent that it is no longer eligible to be listed in the National Register. For purposes of Section 106, the determination of effect would be *adverse effect*.

Beneficial impact – active intervention to preserve a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

### Historic Resources

The Canyon area has long been one of the park’s major developed areas where visitor activity focused on camping, lodging, shopping, and finding information about the park. Development of the Grand Canyon area actually began in 1883 when the former Yellowstone National Park Improvement Company established a hotel camp near the “Great Falls of the Yellowstone.” Other buildings soon followed, and by the late 1920s, hundreds of buildings crowded the edge of the canyon. By the 1940s, somewhat haphazard development had begun in a government service area, located northwest of the canyon at the base of the Washburn Range. In 1940-41, the park constructed a mess hall and brick powerhouse in this area. In 1946, three Civilian Conservation Corps buildings were removed from the abandoned Lake CCC camp and relocated there for use by employees working on whitebark pine blister rust control.

As time went on, the NPS philosophy for visitor use facilities evolved into moving such constructions away from the primary natural features for which a park was known. By 1940, the NPS had developed a master plan for the Canyon area, which called for removing buildings from the canyon rim and locating lodges, cabins, stores, cafeterias, ranger stations, and other facilities in a new developed area to the north. This, especially through the period of Mission 66 construction in the 1950s and 1960s, became today’s Canyon Village. The village is a horseshoe-shaped plaza in which visitor services and facilities were concentrated around an area tailored for the independent auto traveler, who increasingly came to national parks in the post-World War II travel boom. While catering to the current needs of park visitors, the new Canyon Village development also meet park managers’ goal of distancing facilities from the park’s major natural attractions. The hotel concessioner in the 1950s, the Yellowstone Park Company (YPC), and eventually the other primary services provider, Hamilton Stores and Haynes Photo

Shops, contracted with Welton Becket and Associates of Los Angeles to design the Canyon Village development. The YPC agreed to spend \$13.5 million during a ten-year period to implement new construction plans at Canyon, Bridge Bay, and Grant Village. The park's priority for Mission 66 construction was Canyon Village. The architectural style of the village has come to be called "National Park Service Modern."

Although not yet 50 years old, Canyon Village was evaluated in 2000 for its potential eligibility for listing on the National Register of Historic Places, in keeping with the NPS' current practice of studying Mission 66 buildings for that purpose and because of proposed renovation of the Canyon Visitor Center, also located in the horseshoe plaza. The Wyoming State Historic Preservation Office concurred with the park's determination that Canyon Village was eligible. Contributing structures include the Canyon Village Lodge and Registration building, the Hamilton Store and Photo Shop, and the Visitor Center.

Also in 2000, the park evaluated the Canyon service area, and determined that the mess hall, the former CCC barracks, a bunkhouse, and powerhouse contributed to the eligibility of a potential Canyon Service Area historic district. The Wyoming SHPO concurred with this determination of the area's local significance, based on the period 1940-1947 for its association with park planning efforts made as part of the administrative development.

Cultural resource staff conducted survey inventories within the proposed sites for a Canyon Ranger Station and ESB in 2002. No historic resources were noted on the park's Cultural Sites Inventory, nor were any found in ground surveys of the two proposed alternative sites. Alternative A (the preferred alternative) is located on the north side of the North Rim Drive, which marks the boundary of the proposed Canyon Village historic district. Part of the modern Canyon Campground, located northeast of Canyon Junction and several hundred yards to the east of the Alternative A site, was also inventoried and no cultural resources were found.

Alternative B is located on the periphery of the government service area, but more than a quarter-mile to the west of the proposed Canyon Service Area historic district, just west of the Grand Loop Road, Canyon to Tower segment. The Grand Loop Road has been determined eligible for the National Register of Historic Places (NPS 2001b). A 1995 inventory along that road revealed a 9.5-square-meter (102 square feet) excavated depression that was determined to be ineligible for listing on the National Register of Historic Places.

The NPS has determined that there would be *no adverse effect* on historic properties or cultural landscapes as a result of ranger station construction at either alternative site. Both alternatives are located outside the boundaries of proposed historic districts. At both sites, plans call for retention of trees, acting as buffers, between the existing roads and the new ranger station to reduce visual impacts. Construction at Alternative A could potentially have a visual effect on the Canyon Village historic district, and construction at Alternative B could have a visual effect on the Grand Loop Road historic district if these

trees are not retained. The NPS will incorporate principles from the Secretary of the Interior's Standards for the Treatment of Historic Properties into design of a new ranger station, and will consult with the Wyoming State Historic Preservation Office on these determinations and on building design.

#### Conclusion

The proposed project location under both action alternatives would be outside, but near, the historic district boundary. With the design measures implemented, long-term, direct, and cumulative effects of either alternative would be minor to historic resources. **No historic properties affected** by implementation of this project. The effects of the proposed project would not constitute an impairment of park historic resources.

#### **Prehistoric Resources**

The park archeologist supervised a survey within the proposed sites for a Canyon Ranger Station and ESB in 2002. No prehistoric resources were found within the proposed alternative sites from these surveys. The Canyon area contains numerous prehistoric and historic archeological resources. Archeological inventories from the summer of 1996 revealed only a single prehistoric item, a fine-grained quartzite core. It was not collected and would not be disturbed by any of the proposed alternatives. This raw material is not available in the park.

#### Conclusion

The park archeologist determined that proposed construction at either action alternative site would have no effect on archeological resources. Long-term, direct, and cumulative effects of either alternative would be negligible to prehistoric resources. The proposed project would not constitute an impairment to park prehistoric resources.

#### **Ethnographic Resources**

The Grand Canyon of the Yellowstone is known to be an area of traditional interest and use to many of the park's affiliated American Indian groups. In 2002, for example, an elder from the Crow Tribe shared stories about the Canyon and its wildlife the park ethnographer and other staff. An ethnographic overview and assessment has been compiled to assist in the identification of ethnographic resources within Yellowstone, and the canyon itself is one of those resources. However, there are no known ethnographic resources in the project area of potential effect provided by tribal review of the ethnographic assessment or other sources.

#### Conclusion

No ethnographic resources would be affected by construction of a Canyon Ranger Station/ESB. The proposed project would not constitute an impairment of cultural resources in the park.

## **Social and Economic Environment** **(Including Employee Quality of Life, Park Operations, Economics, Public Health and Safety, and Visitor Use and Experience)**

### Methodology and Intensity Thresholds

Analyses of the potential intensity of impacts to social and economic conditions were derived from all available information and surveys staff and community meetings. The thresholds of change for the intensity of impacts to social and economic conditions may be adverse or beneficial and are defined as follows:

- Negligible-** social economic conditions and park operations would not be affected or would be at low levels of detection. The change would be so small that it would not be of any measurable or perceptible consequence.
- Minor-** the effect on social economic conditions and park operations would be small but measurable and would affect a small portion of the population. The change would be small and localized and of little consequence to the community.
- Moderate-** the effect on social economic conditions and park operations would be readily apparent, likely long-term, and widespread in the vicinity. The change would be measurable and of consequence to the community.
- Major-** the effect of the social economic conditions and park operations would be readily apparent, long-term, and would cause substantial changes to the social economic conditions and park operations in the vicinity. The change would be measurable and result in a severely adverse or major beneficial impact and possible permanent consequence to the community.

Yellowstone National Park extends into five counties in three different states including Teton and Park counties in Wyoming, Gallatin and Park counties in Montana, and Fremont County in Idaho. The U.S. Forest Service, the states of Montana, Wyoming and Idaho and a few private landowners manage most of the property surrounding the park. Yellowstone National Park plays a prominent role in the social and economic life of the Greater Yellowstone Area.

Gateway communities of varying sizes have developed outside the park's five entrances - Cody, Dubois, and Jackson in Wyoming; Cooke City/Silvergate, Gardiner, and West Yellowstone in Montana; and Island Park, Idaho. The Montana gateway communities are on the immediate border of the park or within a few miles; the Wyoming gateway communities are an hour's drive or more from the park boundary. Island Park is about a half-hour drive south of West Yellowstone, Montana.



The Canyon developed area is centrally located within the park, and does not border any park boundary. The nearest gateway community is Gardiner, MT, 37 road miles to the north; West Yellowstone, MT is located 40 road miles west, and Cody, WY is a 96-mile drive from Canyon. The distance to the gateway communities, coupled with the emergency response responsibilities of the RM&VP operation prohibit the location of the proposed facilities outside the park.

While the two action alternatives differ only in minor ways with respect to their impacts on natural and cultural resources, there are greater differences between the two alternatives in terms of social impacts. Both action alternatives offer good public access to park patrol rangers, and adequate and secure office and storage space for RM&VP staff and equipment.

The no-action alternative does not accommodate acceptable public access to the RM&VP operation nor adequate office or storage space. Limited access however, would be available through the Canyon Backcountry Permit Office in the new visitor education center. The visitors needing to speak with RM&VP personnel would be contacted in the Canyon Backcountry Permit Office, impinging on the space available to serve and educate backcountry users. Confidential activities such as suspect interviews and employee evaluations would regularly displace programmed functions in the new visitor education center. Security of evidence and law enforcement equipment would be significantly compromised, and emergency equipment would not have adequate storage facilities to make them accessible and prolong their useful life.

### **Economics (Construction Costs)**

Based on preliminary assessment by park engineers, the infrastructure costs associated with each action alternative were determined to be essentially equal. The location of Alternative A in relation to the Canyon Village Historic Area may result in slightly higher design and construction costs in order to ensure that these new structures are architecturally compatible with the near-by Canyon Village Historic District. The current cost estimate of \$488,000 in either alternative site includes site development, construction of the ranger station and construction of a parking lot, but does not include construction of the emergency services building.

### **Conclusion**

The no-action alternative would not result in any construction costs, but would have very real costs in terms of inefficiency for the RM&VP staff without a facility to work from. The infrastructure costs for alternative A and B are essentially equal, although Alternative A may incur a slightly higher construction cost in ensure architectural compatibility with the Historic District. The effect on local/regional economics by the proposed action alternatives would therefore be negligible.

## **Employee Quality of Life**

The existence and location of a ranger station/ESB in the Canyon area would affect the employees that live there. The “No-Action” alternative would require that RM&VP employees conduct government business in their private residences, greatly impacting their productivity and quality of life. Alternative B is located at the edge of the Canyon government employee residential area. The mid-density lodgepole forest would offer some visual screening, but some of these trees would be cut during the site clearing. This site may cause a “blurring of the distinction” between public areas and residential areas. The proposed site plan would call for the improvement of a utility roadbed between the YPSS gas station and the government employee residential area. This would allow public access to the facility from the Dunraven Pass Road. Employees could access the facility from the residential area. Signs would prohibit the public from continuing into the residential area from the facility and access road, but inevitably some visitors will drive through into the residential area. Emergency responses from this site may entail the use of sirens near the residential area. Alternative A is located closer to the visitor facilities in Canyon Village and farther away from NPS employees, but closer to the Canyon YPSS Service Station employee dormitory, which would have some impact on YPSS employees.

### Conclusion

The “No-Action” alternative has a moderate impact on the quality of life of RM&VP employees. Alternative B would cause a minor impact on all NPS employees living in the Canyon Residential Area. Alternative A would have a negligible impact on a limited number of YPSS employees.

## **Park Operations (Emergency Response Times)**

A major long-term objective of this project is to improve the safety and response time for emergency operations by co-locating the Canyon Ranger Station with the ESB in an area that would not require driving emergency response vehicles through the residential area and would minimize the necessity to drive through the Canyon intersection.

The no-action alternative would allow for the continued separation of emergency services staff and their equipment and vehicles. Response times would continue to be hampered by the logistical separation and distance.

Alternative A would co-locate the Ranger Station and ESB on the northeast side of the Canyon intersection, directly across from the Canyon Village developed area. This alternative would require that personnel responding after-hours drive through the residential area and through the Canyon intersection to access the ambulance or structural fire engine, but at that point, the emergency vehicles would be in the vicinity of the high call-volume area, and would not be driven through the residential area or the Canyon intersection for the majority of incidents. With this alternative, and the completion of a Canyon ESB, staff working at the Canyon Ranger Station would have a greatly reduced response time for emergency incidents that mostly occur in the Canyon Village

developed area. Emergency staff residing within their residences would still have to travel to the Canyon village area to respond to emergency calls.

Alternative B would locate this combined facility near the employee residential area, improving response times during times when RM&VP staff are not on-duty and would be responding from their residences. The co-location of the ranger station/ESB would greatly improve response times during work hours when personnel are available in the Ranger Station. The access road to Dunraven Pass would eliminate the need to drive emergency vehicles through the residential area. However, response to the high-call volume area of the Canyon Village developed area would necessitate driving through the Canyon intersection once.

### Conclusion

The no-action alternative would continue to have a moderate adverse impact on emergency response times or safety of emergency responses, as this alternative does not substantially change the existing situation. Both Alternative A and B result in minor improvement in response times and increased safety in responses by co-locating the ranger station and ESB and removing the necessity to drive emergency vehicles through the residential area.

### **Public Health and Safety (Traffic Flow)**

Public safety may be affected by this project because the alternatives would affect traffic flow in the Canyon area. Both Alternative A and Alternative B would add an intersection in close proximity to existing intersections. The no-action alternative would have no impact on traffic flow, as it does not substantially change the existing conditions.

Alternative A would add an intersection approximately 150 meters (137 yards) east of the Canyon intersection. This access road is currently unpaved and not open to the public; it receives light usage during the winter months as an access to a winter concession operation located in a meadow north of the proposed site. The intersection would be located between the two entrances to the Canyon Village developed area, and west of the entrance to the Canyon Campground. Traffic congestion is generally greater on this side of the intersection in comparison to the other three sides of the intersection.

Alternative B would add an intersection approximately 100 meters (91 yards) north of the Canyon intersection on the Dunraven Road. The access to the ranger station/ESB is an old roadbed that was rehabilitated in 1984 and is no longer open to vehicular traffic. Once developed, this intersection would be used by on-duty employees of the RM&VP staff and by members of the public to access the ranger station. Emergency vehicles such as patrol cars, ambulances and structural fire engines would access the Canyon Village developed area through this intersection. Residents would be required to continue using the main residential area access located west of the Canyon intersection. The north side of Canyon intersection is generally less congested than the others.

### Conclusion

The no-action alternative would have no impact on traffic flow, as it does not substantially change the existing conditions. Under Alternative B the majority of emergency responses would still require that emergency vehicles travel through Canyon Intersection; Alternative A eliminates this concern for the majority of calls. Neither Alternative A nor B would be expected have any significant impact on park traffic flow. Under both action alternatives, long-term, direct, and cumulative effects of either alternative would be negligible.

### **Visitor Use and Experience**

The goal of a Resource Management and Visitor Protection program in the Canyon area is to provide quality visitor interaction and convenience. The no-action alternative does not provide for visitor interaction space. Visitors requiring contact with a protection ranger would be contacted in other public spaces such as parking areas. Some public contacts may occur in the Backcountry Office of the new Canyon Visitor Education Center; however, this use would displace and interfere with the intended use of this office. No seating accommodations would be available.

The proximity of alternative A to the Canyon Developed Area lends itself to convenient access for both park visitors and concession employees. Visitors and employees needing to contact a protection ranger could easily be directed to walk across the road to the ranger station. Protection rangers would also be in closer visual contact with the primary visitor use area, as the “horseshoe” area is visible from the entrance to this site. This allows protection rangers to more closely gauge the level of activity in the area and adjust patrol strategies accordingly. This awareness is particularly important in the winter, when daily and hourly use levels vary significantly.

Alternative B is located across the opposing corner of the intersection from the Canyon Developed Area. Visitors and concession employees who live in the developed area would most likely choose to drive to the ranger station from the developed area, and would have to cross the Canyon intersection. The developed area is not visible from the general vicinity of this site.

### Conclusion

The no-action alternative would have a major negative impact on visitor services and convenience. Both alternatives A and B would cause moderate beneficial improvement in visitor service and convenience from existing conditions, with alternative A slightly more accessible and convenient public interaction would occur from the Canyon developed area.

### **Cumulative Effects**

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act, requires 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” (40CFR 1508.7). Cumulative impacts are considered for both the no-action and proposed actions alternatives.

Cumulative impacts were determined by combining the impacts of the proposed alternative with potential other past, present, and reasonably foreseeable future actions. Therefore it was necessary to identify other ongoing or foreseeable future projects within Yellowstone National Park and, if necessary, the surrounding region.

Although numerous construction and maintenance projects are planned for the greater Yellowstone area over the next 20+ years, the major emphasis of these projects is to replace, repair, and rehabilitate existing facilities that are approaching the end of their useful service life. Where new facilities are needed, they would be concentrated in and adjacent to existing developed areas to minimize the creation of new, isolated developments. Although some commitment of previously undisturbed resources is inevitable, as are some adverse cumulative effects, many of the project efforts to be undertaken involve the removal of existing development and the revegetation of other human activity scars.

Several hectares or acres of previously undisturbed land are currently identified for commitment in construction projects in the park. Conversely, disturbed lands are also slated for reclamation and revegetation, almost half of which are in the sensitive grizzly bear habitat at Fishing Bridge. In addition, reclamation of past material spoil sites, and old road scarring has been successfully accomplished in the park through the Abandoned Mine Lands Program, a cooperative effort of the state of Wyoming and the National Park Service.

The purpose of this discussion is to identify and assess the cumulative effects of other activities and projects on resources, visitors, area residents, and staff in the Canyon area as it relates to the proposed project.

### **Roadway Projects**

The *Parkwide Road Improvement Plan* (1992) outlines a 20-year program of road construction throughout the park to bring Yellowstone’s principal park road system up to current National Park Service standards. Under this action, both the positive and negative impacts on natural, cultural, and socioeconomic resources associated with the original development of all the park roadways would persist. Positive effects include public access to the park to enjoy its features, and benefits to local economies both in and outside the park. Negative effects include the disturbance of bedrock, soils, and vegetation; loss, degradation, and fragmentation of habitat; temporary disturbance and displacement of some wildlife during construction; possible loss of historic and prehistoric resources; and waste production. Ongoing maintenance of the road would continue to result in the disturbance of roadside soil and vegetation as well as the ongoing

use of road grading and building materials, often from in-park quarry sources in need of reclamation.

The reconstruction of the road between Canyon Junction and Tower Junction is scheduled to be started in 2003 and continue through 2008 (NPS 2001b). The overlay projects for the road between Fishing Bridge and Canyon Junction is expected to begin in 2003 and continue through 2004. Other future road projects include the Canyon Rim Drives to be overlaid beginning in 2004. Start-up and completion dates for these projects are dependent on available funding.

The National Park Service proposes to resurface, restore and rehabilitate the road and associated pullouts and parking areas between Canyon Junction and Fishing Bridge Junction, also known as the "Hayden Valley Road". This is an interim measure starting in 2003 until the road can be reconstructed in 2014. Work involves recycle and overlay of the entire 25.3 kilometers (15.7 miles) of roadway on the existing alignment to the same 6-meter (19.7-foot) width. A number of pullouts would be formalized; others would be obliterated. Aggregate and borrow material would be obtained from the Sylvan Pass Pit on the east side of the park (NPS 2001d).

The National Park Service is initiating planning for the resurfacing of the Canyon North Rim and South Rim Drive Roads. The planning/design for these projects may affect the location of access entrances for facilities in the Canyon development area including the Canyon Village parking areas.

#### **Other Projects in the Canyon Area**

Other actions would be occurring in the Canyon area during the course of this action, possibly adding to the overall cumulative impact.

The Canyon Visitor Center is scheduled for rehabilitation starting in 2004 and lasting at least two years (NPS 2001). Under the approval of a park community plan (NPS 1992a), Canyon Village employee housing would be replaced, as funds become available. Completion of a four-plex occurred in 2001. More employee housing quarters may be replaced as funding becomes available. Construction of a 50-site contractor camp (NPS 2001a) began in 2002 and construction will resume in 2003. Yellowstone National Park is in the process of replacing 488 obsolete guest lodging units in the Canyon Village area (NPS 1988). The Norris wastewater facility is scheduled to be replaced in 2003 (NPS 2002). In 2003, the Canyon dump service, located in A loop of the Canyon Campground will no longer be operational for park visitors. A new site would need to be determined for the construction of a new dump service facility.

#### **Beneficial Development Effects**

A number of resource restoration and rehabilitation projects have been completed in the Canyon area, with others in the planning stage. In 1999, a concrete impoundment on Cascade Creek near the Canyon Maintenance compound was removed and the area rehabilitated. The environmental compliance to remove a concrete cistern associated with

the Old Canyon Hotel has been completed, and its removal and site rehabilitation will take place as part of the Dunraven Road Project. A section of old roadbed used for administrative purposes near the Grebe Lake Trailhead will be rerouted and the area restored also as part of the Dunraven Road Project. These two rehabilitation projects are associated with the Canyon Contractor Camp planning process (NPS 2001a). Several areas along the North and South Rim Trail system have been revegetated and had unused man-made structures removed. These projects will continue as funding is made available.

### Conclusion

The proposed project would be expected to have negligible cumulative impacts on park natural, cultural, social, and economic resources. Long-term, direct, and cumulative effects of either alternative would be negligible. The proposed project would not constitute a cumulative impairment of park resources.

### **Regulatory Compliance**

If, based on the results of the environmental assessment, the project would significantly affect the human environment, a notice of intent (NOI) to prepare an environmental impact statement (EIS) would be issued. Conversely, a Finding of No Significant Impact (FONSI) would be issued if it was determined that there would be no significant impact from this project.

Consultation with the USFWS on threatened and endangered species under 50 CFR Part 402, which implements the Endangered Species Act, would be completed. As part of the consultation process, the National Park Service would seek Fish and Wildlife Service concurrence with the determination of effect on threatened and endangered species.

In compliance with Executive Order 11990, "Protection of Wetlands," a statement of findings (SOF) issued for impacts on wetlands is not required, as no wetland will be impacted by any of the alternatives.

Consultation with the Wyoming State Historic Preservation Office (SHPO), as required by Section 106 of the National Historic Preservation Act, will be completed before a FONSI will be signed. As part of the consultation process, the NPS would seek the SHPO's concurrence with the determination of effect on cultural properties.

All historic and prehistoric archeological sites within the area of potential effect have been inventoried. No evidence of historic resources were noted on the park's Cultural Sites Inventory, nor were any found in ground surveys of the two proposed alternative sites.

Native American tribes traditionally associated with Yellowstone National Park have been notified of this project with a public scoping letter. All will be sent a copy of this

environmental assessment for their review and comment prior to any implementation of this project.



## **CONSULTATION AND COORDINATION**

### **Planning Team, Contributors, and Consultants**

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The following is a list of agencies and organizations to which this Environmental Assessment will be sent:

### **Wyoming State Historic Preservation Office US Fish and Wildlife Service – Cheyenne, WY**

#### **Persons, Organizations, and Agencies Contacted in Scoping:**

A scoping letter was sent to approximately 160 individuals, agencies or groups in the spring of 2002, soliciting comments on the problems, issues, and alternatives to be addressed in the environmental assessment. Five comment letters were received. See “Issues and Concerns” for a summary of the comments received.

#### **Agencies/libraries That Will Receive This Environmental Assessment:**

US Fish and Wildlife Service – Cheyenne, WY  
Wyoming Office of Federal Land Policy  
Wyoming State Historic Preservation Office  
Billings, MT Public Library  
Bozeman, MT Public Library  
Cody, WY Public Library  
Jackson, WY Public Library  
Yellowstone National Park Research Library

**Agencies, Organizations, And Tribes That Will Be Notified Of This Environmental Assessment:**

Beaverhead National Forest  
Big Hole National Battlefield  
Bridger-Teton National Forest  
Custer National Forest  
Environmental Protection Agency, Region 8 – Denver  
Gallatin National Forest  
Glacier National Park  
Grand Teton National Park  
Grant-Kohrs Ranch NHS  
Idaho Department of Commerce  
Idaho Department of Parks and Recreation  
Idaho Fish and Game Department  
Idaho State Historic Preservation Office  
Little Bighorn Battlefield NM  
Montana Department of Commerce  
Montana Department of Fish Wildlife and Parks  
Montana Intergovernment Review Clearinghouse  
Natural Resource Conservation Service – Bozeman and Cody  
Shoshone National Forest  
Targhee National Forest  
Teton County Certified Local Government  
Town of West Yellowstone  
Western Federal Lands Highway Division  
Wyoming Department of Transportation  
Wyoming Game and Fish Department  
Wyoming State Clearinghouse  
Wyoming State Lands and Investments  
Wyoming State Library  
Wyoming Travel Commission  
ACHP Western Office of Project Review  
Alliance for Wild Rockies  
American Fisheries Society  
American Wildlands  
Bear Creek Council  
Beartooth Alliance  
Billings Chamber of Commerce  
Bozeman Area Chamber of Commerce  
Cheyenne High Plains Audubon  
Citizens for Teton Valley  
Cody Chamber of Commerce  
Cooke City/Silver Gate Chamber of Commerce  
Defenders of the Rockies  
Defenders of Wildlife  
Fremont County of Audubon Society

Gallatin County Commissioners  
Gardiner Chamber of Commerce  
Great Bear Foundation  
Greater Yellowstone Association of Conservation Districts  
Greater Yellowstone Coalition  
Idaho Falls Chamber of Commerce  
Idaho Wildlife Federation  
Jackson Hole Alliance for Responsible Planning  
Jackson Hole Chamber of Commerce  
Lander Chamber of Commerce  
Livingston Chamber of Commerce  
Montana Audubon Council  
Montana State University  
Montana State Preservation Office  
Montana Wildlife Federation  
National Audubon Society  
National Parks and Conservation Association  
Nature Conservancy – Idaho Chapter  
Nature Conservancy – Montana Chapter  
Nature Conservancy – Wyoming Chapter  
National Wildlife Federation  
Northern Plains Resource Council  
Northern Rockies Conservation Cooperative  
Northwestern University  
Park County (MT) Commissioners  
Park County (WY) Commissioners  
Park County Environmental Council  
Pinedale Chamber of Commerce  
Red Lodge Chamber of Commerce  
Riverton Chamber of Commerce  
Sierra Club Idaho Chapter  
Sierra Club Northern Plains Regional Office  
Sierra Club Teton Group  
Sierra Club Utah Chapter  
Snake River Audubon Society  
Star Valley Development Association  
Stone Fly Society  
Teton County Commissioners  
Teton County Historic Preservation Board  
University of Colorado  
University of Wyoming  
Upper Missouri Breaks Audubon Society  
Utah Audubon Society  
Utah Wilderness Association  
Utah Wildlife Federation  
Wyoming Wildlife Federation

West Yellowstone Chamber of Commerce  
Wild Forever  
Wilderness Society  
Wyoming Association of Professional Historians  
Wyoming Heritage Society  
Wyoming Outdoor Council  
Yellowstone Association  
Yellowstone Park Foundation  
Yellowstone Valley Audubon Society  
Northern Arapaho Tribe  
Blackfeet Tribe  
Northern Cheyenne Tribe  
Coeur d'Alene Tribe  
Confederated Tribes of Salish and Kootenai  
Crow Tribe  
Crow Tribe/Apsaalooke Nation  
Kiowa Tribe  
Nez Perce Tribe of Lapwai  
Nez Perce Tribe of Nespelem  
Nez Perce Tribe of Colville  
Eastern Shoshone Tribe  
Shoshone-Bannock Tribes  
Assiniboine and Sioux Tribes  
Gros Ventre and Assiniboine Tribes  
Cheyenne River Sioux Tribe  
Crow Creek Sioux Tribe  
Flandreau Santee Sioux Tribe  
Lower Brule Sioux Tribe  
Oglala Sioux Tribe  
Rosebud Sioux Tribe  
Standing Rock Sioux Tribe  
Spirit Lake Sioux Tribe  
Sisseton-Wahpeton Sioux Tribe  
Yankton Sioux Tribe

The Environmental Assessment will be available on Yellowstone National Park's web site at.

[www.nps.gov/yell/technical/planning](http://www.nps.gov/yell/technical/planning)

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# APPENDIX A

## VEGETATION MANAGEMENT FOR CONSTRUCTION IN YELLOWSTONE NATIONAL PARK

Revegetation efforts within the park have focused on careful management of topsoil as the only available growing medium and seed source. This is based on a park policy that seed obtained from sources outside the park would contaminate the park gene pools. Although it is a conservative method, the topsoil management approach has worked well.

The park has an interagency agreement with the Bridger Plant Material Center to assist in the formation of a park seed bank. The park has also tested mulches and can make this information available upon request.

All construction work within the park involving ground disturbance will meet the following criteria for revegetation accepted by the park.

1. All construction will be limited to that area necessary to complete required work. No activity, including vehicle or material use or storage, will be allowed outside the predetermined zone. If vehicles are to be traveling through an area numerous times, the same tracks will be used to prevent compaction in other areas. Compacted zones will be treated (raking, aerating, and replacement of topsoil) to assist revegetation. Topsoil will not be driven on at any time.
2. Excavation and improvement will be handled in manageable sections that reflect changes in the soil and vegetation. Trenching routes and disturbance zones will be flagged and approved by the park. All flagging and debris will be removed from the area after work is completed.
3. Sections will be rehabilitated as soon as possible. Topsoil will not be stockpiled over the winter or for longer than three months in sagebrush/rabbitbrush zones or longer than six months in grass-dominated zones. Any deviation must be approved by the park.
4. Topsoil refers to the uppermost soil horizon; it is usually found in the top 2 to 6 inches. Topsoil will be removed and replaced from the same area. Care will be taken to ensure that topsoil and fill material are not mixed and are stockpiled in separate areas (e.g., topsoil to the right of the trench and fill to the left).
5. Vegetation over 3 feet in height will be removed before the removal of topsoil and in a manner that least disturbs the topsoil. Topsoil will not be driven on, gouged, or compacted as vegetation is removed. Topsoil will be removed before stumps are pushed. Any deviation from this process must be approved by the park.
6. After large trees are removed, topsoil will be removed from an area in a single cut, including any vegetation that is 3 feet tall and under. Grubbing is not permitted.
7. Irregular land surfaces are recommended for a natural effect. Some rock outcropping and boulders may be left in place to create natural pockets for revegetation (see number 11). Deadfall snags may be stockpiled for later use on slopes that are very steep to provide catch points for soil.

8. Topsoil will not be used as bedding material. Separate bedding material will be obtained from sources approved by the park.
9. Topsoil will be replaced on site in a mixture of topsoil and vegetation associated with the topsoil and will be reworked over the site in a manner that preserves the seed source while spreading the soil over the area.
10. No topsoil will be imported from outside the park or moved internally within the park unless approved by the park. Any imported fill will be checked for exotic plants.
11. Trees and shrubs will be avoided if possible during trenching or excavation. Any trees removed during construction will be removed from the site unless specified by the park.
12. If replacement seed is required for revegetation in an area, the park will provide seed at cost to the contractor. Advance notice of six months to one year is required on projects exceeding 1,000 square feet.
13. Boulders unearthed during construction may be reburied or left exposed (with lower third buried) depending upon the location and extent of rock naturally occurring in the area.
14. If a trench is required, the surface of the trench will be left mounded to allow for settling along the line.
15. If mulch is required in sensitive areas due to visibility or exotic plant infestation, the park will specify the type and depth of mulch to be used. Nitrogen may be added in small quantities to any wood product used on slopes to balance nitrogen lost through decomposition.
16. No fertilizer will be used in any revegetation work unless requested by the park.
17. If relocated due to road reconstruction, junction boxes or cans will be placed in the field and approved by the park. Locations should be well screened by vegetation, topography, or large boulders.
18. All access to the site and stockpiling or staging areas will be identified by the contractor and approved by the park. These areas will be revegetated using approved techniques upon completion of the project.
19. All debris will be removed from the site to an approved pit or hauled away as approved by the park.
20. Final review and inspection will be made by the park before the work is accepted.