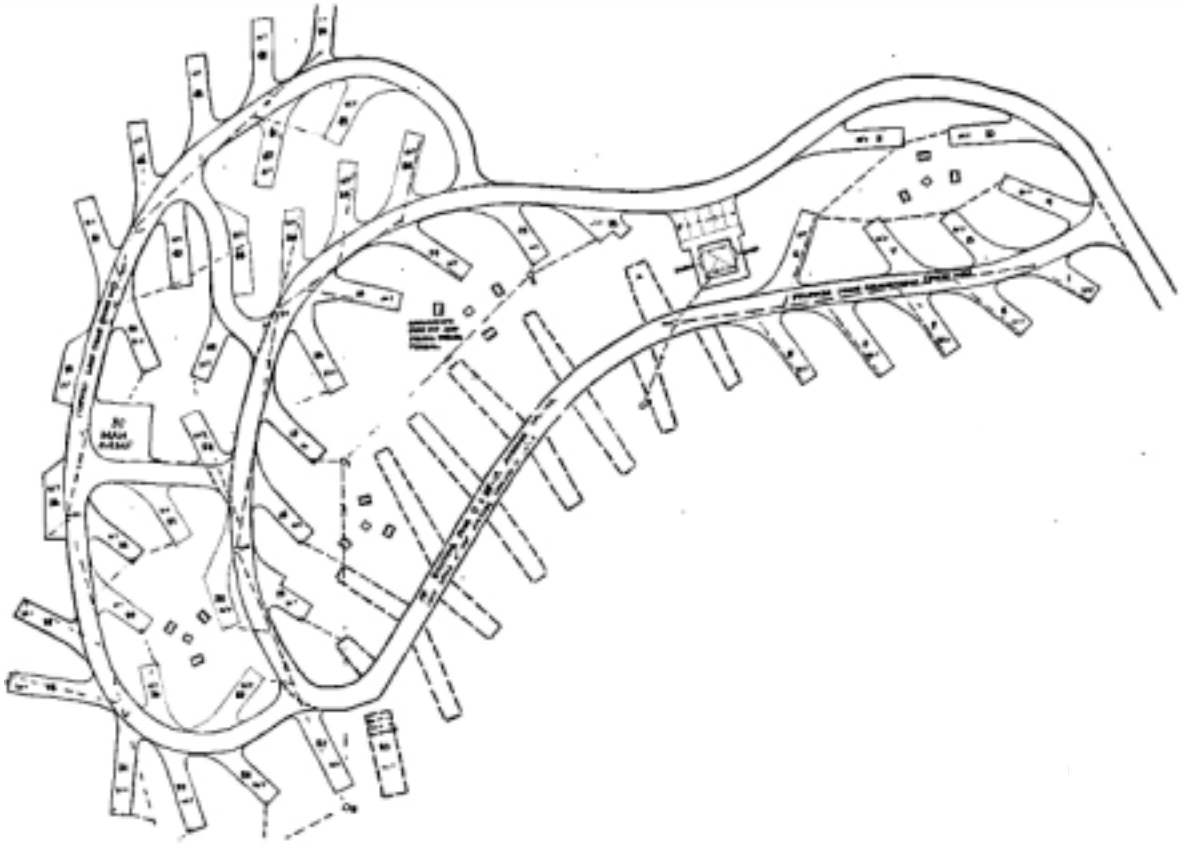
Environmental Assessment

August 2001



Canyon Contractor Camp

Yellowstone

National Park

Wyoming / Montana / Idaho

CONTENTS

FROM THE SUPERINTENDENT

We are pleased to provide you with the *Canyon Contractor Camp Plan/Environmental Assessment* for the Canyon area of Yellowstone National Park. We would like to hear your opinions concerning the proposed plan and the other alternatives that are described in this document.

This planning effort was initiated in 1996. In March of 1997 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 April 22, 1997. During that time, ten comments were received from a combination of government agencies and environmental groups and one construction company. The alternatives were subsequently modified to incorporate public input, a proposed action was selected, and this plan was written.

The purpose of this *Canyon Contractor Camp Plan/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.

Comments on the draft plan are encouraged and will be accepted by mail until October 4, 2001. Please send written comments to the following address:

Superintendent
Attn: Planning and Compliance
Canyon Contractor Camp Environmental Assessment
P.O. Box 168
Yellowstone National Park, WY 82190

We appreciate your helping to determine the future direction of facilities provided at Yellowstone National Park. Your participation is most useful.

Frank Walker
Acting Superintendent

Yellowstone

National Park
Wyoming / Montana / Idaho

This *Canyon Contractor Camp / Environmental Assessment* describes and analyzes four alternatives for the expansion of an existing trailer park facility to provide sites for contractors to park trailers while working on construction projects within the boundaries of Yellowstone National Park. The alternatives described define appropriate levels and kinds of services and facilities and set the basis for park actions. **Alternative A (the proposed action)** provides for the construction of 50 additional contractor camp sites and is intended to enhance safety of the visiting public and contractor employees. It is expected that by providing more contractor employee housing options, contract prices for park projects would decline. **Alternative B** would construct 44 contractor campsites. **Alternative C** would construct 60 contractor campsites. **Alternative D (no action)** would continue the existing conditions at the park.

The major impact topics assessed are natural resources, including soils, geology, vegetation, water and air quality, wildlife, and threatened and endangered species; cultural resources, including prehistoric, ethnographic, and historic resources; and the visitor experience at the four main developed areas of the park. This document was prepared to evaluate the alternatives, assess the impacts of implementing each alternative, and to provide the public with an opportunity to comment. This plan will be on public review for 30 days.

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.

Comments are due October 4, 2001, and should be addressed to:

Superintendent
Attn: Planning and Compliance
Canyon Contractor Camp Environmental Assessment
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

INTRODUCTION

The National Park Service is proposing to construct a contractor camp to provide recreational vehicle (RV)/trailer sites for contractor employees working on construction projects in Yellowstone National Park (YNP). A variety of construction projects are underway or planned for areas within Yellowstone National Park. These include park road reconstruction and rehabilitation projects, park employee housing, visitor lodging, and rehabilitation of the Canyon Visitor Center.

Construction of campsites for construction workers has been considered throughout Yellowstone National Park. However, because of its central location, the Canyon Village development is the primary area for consideration for the construction of a contractor camp. The area proposed for this camp is located immediately northwest of the Canyon employee residential area and west of the Canyon-to-Tower road. The area would include the current RV loop containing 14 sites, used by Canyon area employees and contractors, and an area immediately surrounding the existing camp.

Earlier planning documents in Yellowstone National Park did not adequately address contractor housing. Three previously completed road reconstruction environmental assessments have stated that contractor housing would not be provided in Yellowstone National Park. Environmental assessments for construction projects such as park employee housing and concession lodging construction also did not address contractor housing for construction workers in depth and stated that the existing RV loop at Canyon would be phased out (NPS, 1992a). Since that time, housing for contract workers on park road and other construction projects have been accommodated with available housing in and outside Yellowstone National Park. However, these housing needs may have been underestimated in previous planning documents and have been increasingly more difficult to fill. Camping accommodations outside the park have been more difficult to find, especially on east side park projects where other road construction activities on U.S. Highway 12/14/20 take up any available spaces. In-park housing has also been mostly unavailable, as park and concession employees have utilized most available housing. A typical occurrence on park road projects is that some workers, after a shift, would pull over on road projects and camp on the work site illegally. This has been a routine enforcement problem for park rangers and has presented potential bear-human conflicts.

The National Park Service, in cooperation with the Federal Highway Administration (FHWA), is in the process of rehabilitating or reconstructing the principal park roads in Yellowstone. The Surface Transportation Assistance Act (PL 97-424), passed in 1982, established the federal lands highways program (FLHP). This program distributes funds from federal motor fuel tax revenues for work on roads in parks and on other federally administered lands. Road reconstruction of the park road between Old Faithful and West Thumb, resurfacing between West Entrance and Madison, and Norris and Canyon, Northeast Entrance to Tower, and reconstruction on portions of the East Entrance Road and between Madison and Biscuit Basin are examples of work performed under this program. Current road construction projects include the Norris to Madison road segment.

Future road park projects would include Canyon to Tower, Fishing Bridge to Canyon, and Norris to Mammoth road sections.

Road reconstruction in YNP is presently scheduled through the year 2017 and possibly beyond. Currently, road reconstruction projects occur on both the east and west sides of Yellowstone National Park. Contractors working on the west side road projects have housed their employees outside of the park, within 32 kilometers (20 miles) of the job site. Contractors working on the East Entrance Road project have had difficulty finding housing for their employees. The job sites are about 113 kilometers (70 miles) from Cody, Wyoming. Forest Service campgrounds are generally unavailable for contractor use.

Other construction projects planned for Yellowstone National Park may also require contractor housing. These include Canyon lodging redevelopment, the Canyon Visitor Center rehabilitation, sewage and water treatment plants, and trailer replacement housing for park employees. Some contractor RV sites may also be necessary to house workers for these projects.

PURPOSE OF AND NEED FOR THE ACTION

The National Park Service is proposing to expand an existing recreational vehicle trailer court at Canyon to increase the number of spaces available to contractors performing park-requested work within Yellowstone National Park. Park employees and contractors currently use a 14-space RV court.

The Federal Highway Administration has requested the park to consider providing contractor housing for highway construction workers for projects inside Yellowstone National Park. The Federal Highway Administration has expressed a need to house over 100 contractor employees for park road projects, and thus have also requested 50 RV sites to help with their operation. Similarly, the NPS Business Management Office has begun a project building visitor-lodging units in the Canyon developed area. They have determined that housing for 10-15 workers is required to complete this project, and requested RV sites for 15 contractor workers in an abandoned loop of the Canyon Campground. A new water and sewer system is proposed for the Norris area, 19 kilometers (12 miles) west of Canyon. Contractors need sites for housing their employees. Because construction of a contractor camp may occur beyond the development bubble stated in the *Employee Housing, Community Plans for Canyon Environmental Assessment* (NPS 1992a) and is contrary to statements in the Parkwide Road Improvement Plan (NPS 1992b), a new and separate environmental assessment for this project is necessary.

This environmental assessment will address construction beyond the existing Canyon housing area. The *Employee Housing, Community Plans for Canyon* stated, in part, that the current contractor camp area would be retained in its present configuration, and

phased out over time. The plan also states that new construction at Canyon would be within the periphery of the existing housing area. Depending upon the alternative chosen, the existing approved housing plan for Canyon would be amended through this effort.

Three critical problems caused by the lack of available contractor housing include safety, quality contractors, and construction cost.

1. Safety to traveling public and contractor personnel

Most park construction occurs during a 12-hour night road closure between 9:00 PM and 9:00 AM. Workers usually travel for an hour or more to and from their housing and the work site, usually during heavy visitor traffic. The mix of commuting contractors and visitors both using the road for different purposes could pose dangers of additional motor vehicle accidents. Examples of road construction worker-related vehicle accidents include a 1992 passenger fatality when a driver fell asleep returning to a trailer site outside the park after a 12-hour shift and a 1994 driver injury when a construction worker fell asleep while driving in the park and drove down an embankment.

2. Attracting quality contractors and contract employees

Quality contractor employees are usually one of the keys to a successful project. However, contractors in Yellowstone National Park have difficulty getting the most qualified personnel, though the projects are complex and environmentally sensitive. Contractors who have completed construction projects in the park have stated that the lack of close and affordable housing is among the top reasons making it difficult to acquire quality workers (Bronder 1996).

3. Road construction cost

Contractors who have completed construction projects in the park stated that to acquire and retain employees on their park projects, they have to add an average of $2.00 per hour to employee's wages (Bronder 1996). This increase was attributed to the long distance of travel from housing to the site, the high cost of housing, and the lack of available housing in and around the park. For a road construction project with an average of 50 workers for a six-month work season, the extra cost is about $125,000 per project per year. This cost gets passed on in the contract bid prices (Bronder 1996).

RELATIONSHIP OF THIS PLAN TO OTHER PLANS

The Yellowstone Parkwide Road Improvement Plan, Environmental Assessment (NPS 1992b) states:

> "Housing construction personnel within the park would increase the impact on housing and support services. These impacts would be

> minimized by utilizing existing developed areas and other resources to the fullest extent practicable. The needs of construction personnel would be met without development of additional housing or other facilities."

The 1992 Environmental Assessment for Employee Housing states:

> "The existing RV spaces for concessionaire employees and contractors would be retained in their current configuration. These spaces wold be phase out in the long-term" (NPS 1992b).

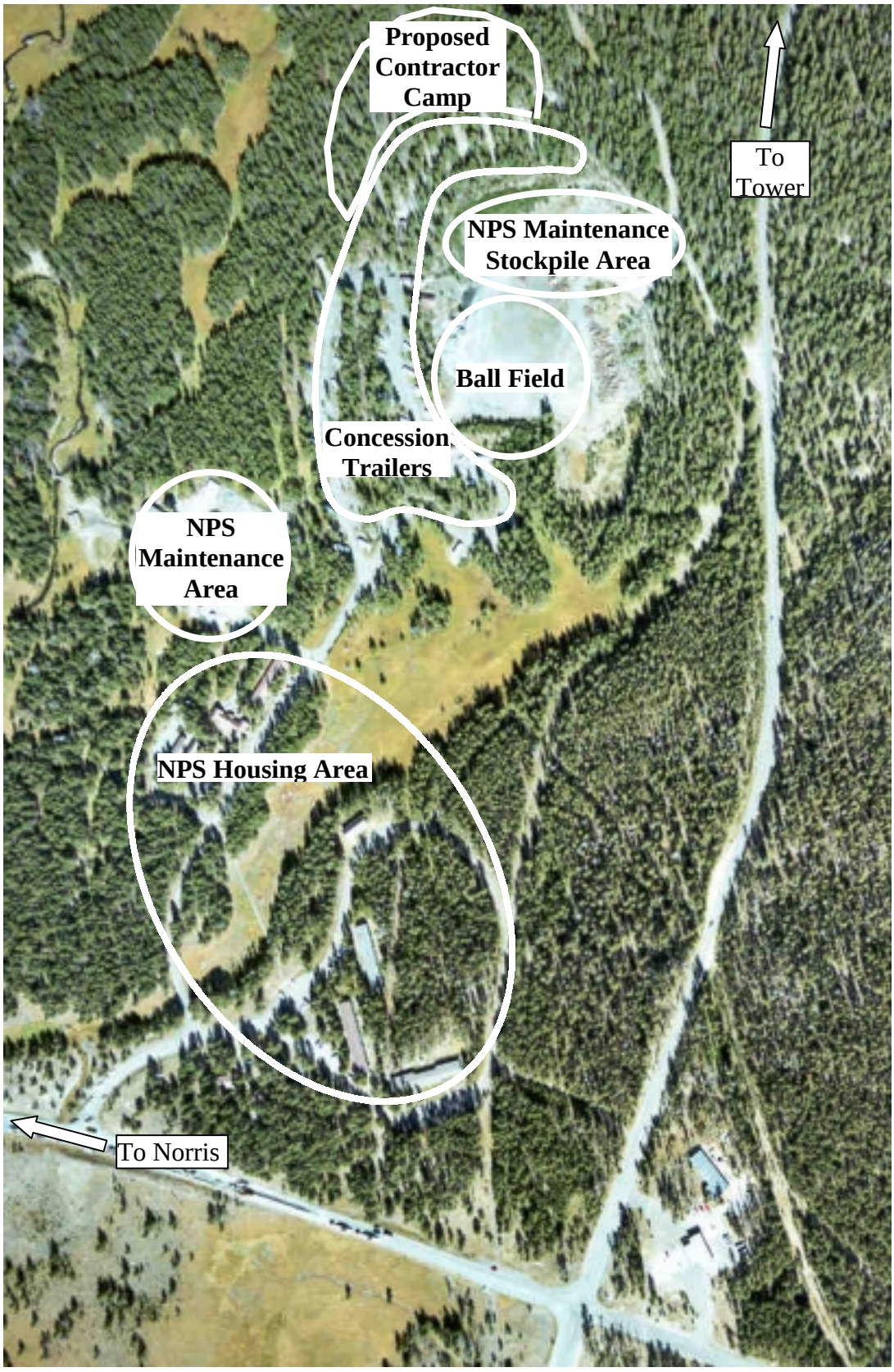


Figure 1 - Canyon Junction Developed Area

PARK PURPOSE AND SIGNIFICANCE

Park Purpose

The purpose statement explains why Yellowstone National Park was established. The following statements were taken from the park's Strategic Plan and establishing legislation (16 USC Sec. 21).

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 it's geologic features, natural systems and processes, and history.

MANAGEMENT OBJECTIVES

The National Park Service faces a tremendous challenge at Yellowstone to minimize the impact on the park's natural and cultural resources while providing for visitors' enjoyment of the park. This is especially acute in developed areas where visitors concentrate and where the kind and level of services available often dictate how much impact there will be on park resources. The following management objectives were devised to guide the development of alternatives in the Canyon Contractor Camp Plan/Environmental Assessment:

- **Objective 1** Provide park contractors with spaces to park privately owned recreational vehicles for lodging during construction projects.
- **Objective 2** Improve safety to traveling public and contractor personnel.
- **Objective 3** Attract higher quality contractors and contract employees.
- **Objective 4** Reduce the cost of the park's construction contracts because of increased amount charged by contractors due to poor housing options.

Yellowstone National Park is a tract of land encompassing 898,714 hectares (2,219,823 acres) that was:

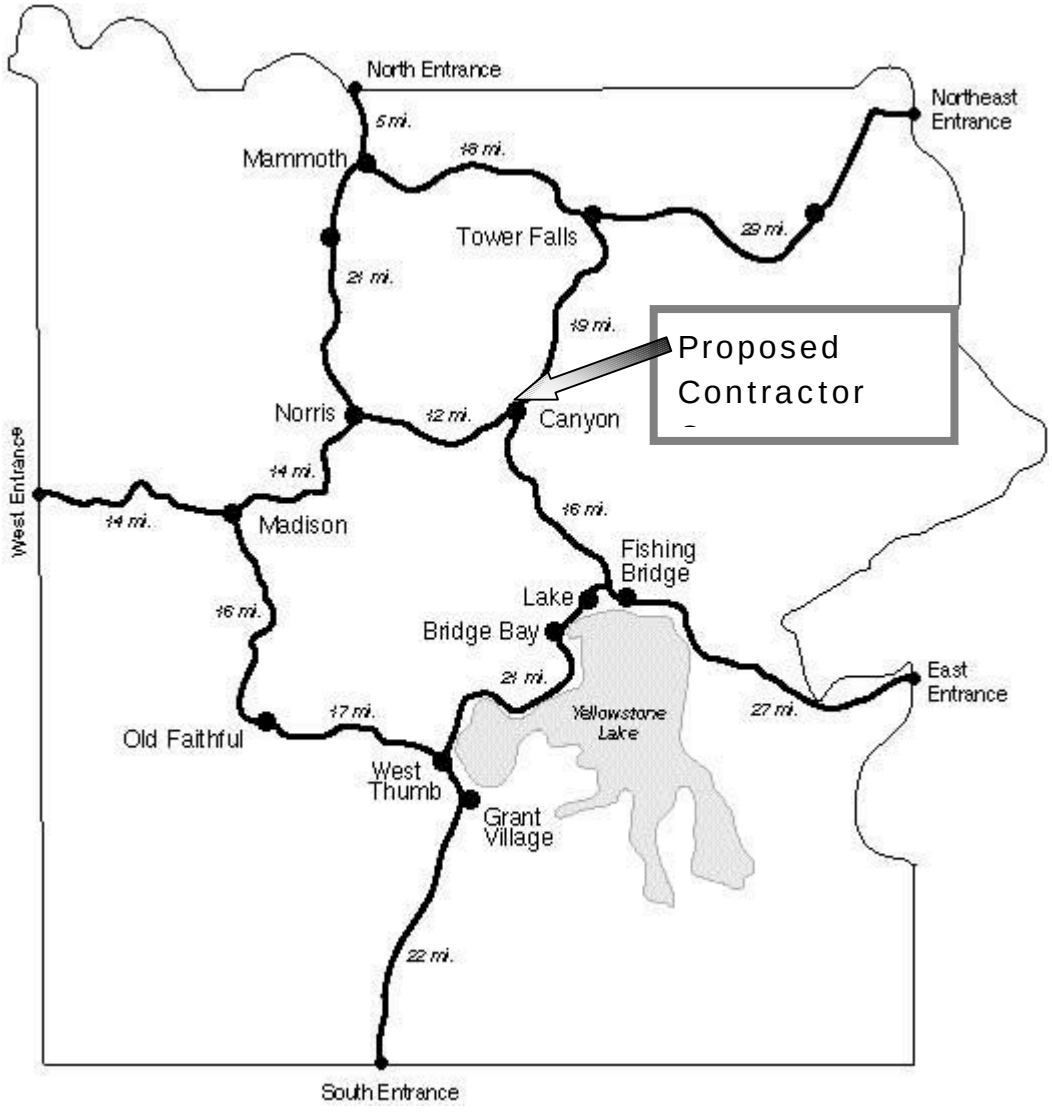
- Dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people.
- Provided for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition.
- To conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Park Significance

The significance of Yellowstone National Park is found in its natural and cultural resources and related values, which include but are not limited to:

- The majority of the world's geysers, including Old Faithful, the icon of them all;
- The core of the last large ecosystem in the lower 48 states still inhabited by every wild species present when Columbus reached the New World; and
- The powerful evidence of human history, such as several hundred archeological sites, nearly 1,000 historic structures, and six designated National Historic Landmarks—Old Faithful Inn, the Northeast Entrance Station, Obsidian Cliff, and the Norris, Madison, and Fishing Bridge Museums.

Yellowstone National Park was created as the first national park in 1872, and has served as a symbol for establishing the 384 additional national park units in the United States, and national park systems in more than 140 countries around the world. In recognition of this significance, the United Nations Educational, Social, and Cultural Organization (UNESCO) in 1972 named Yellowstone as the first American area to be designated as a Biosphere Reserve. In 1978, UNESCO designated Yellowstone as a World Heritage Site.



ISSUES AND CONCERNS

Public scoping for this project was carried out between March 24, 1997, and April 22, 1997, and ten comments were received from a combination of government agencies and environmental groups and one construction company. Comments have been incorporated into the project design and this environmental assessment. Funding limitations for the project delayed final design, and completion of the environmental assessment until now.

Issues identified included:

- There is a need for a centrally located area for construction workers to park their trailers with proper utility hook-ups while working on park construction projects.
- Conflicts of this plan with prior approved park plans.
- The project area is located in prime grizzly bear habitat.
- Introduction of possible bear attractants into the area.
- The park's policy of "no net loss" of habitat for grizzly bears.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Description of the site

The project site (figure 1) for all action alternatives lies between 2,371 and 2,384 meters (7,780 and 7,820 feet) above sea level in the foothills on the northwest side of Canyon Junction. On the south side of the project, there is an extensive existing trailer park, employee housing, and a large gravel pit that has been used to store a wide variety of materials. In addition, part of the pit is used as a softball diamond for NPS and concessioner staff living in the area.

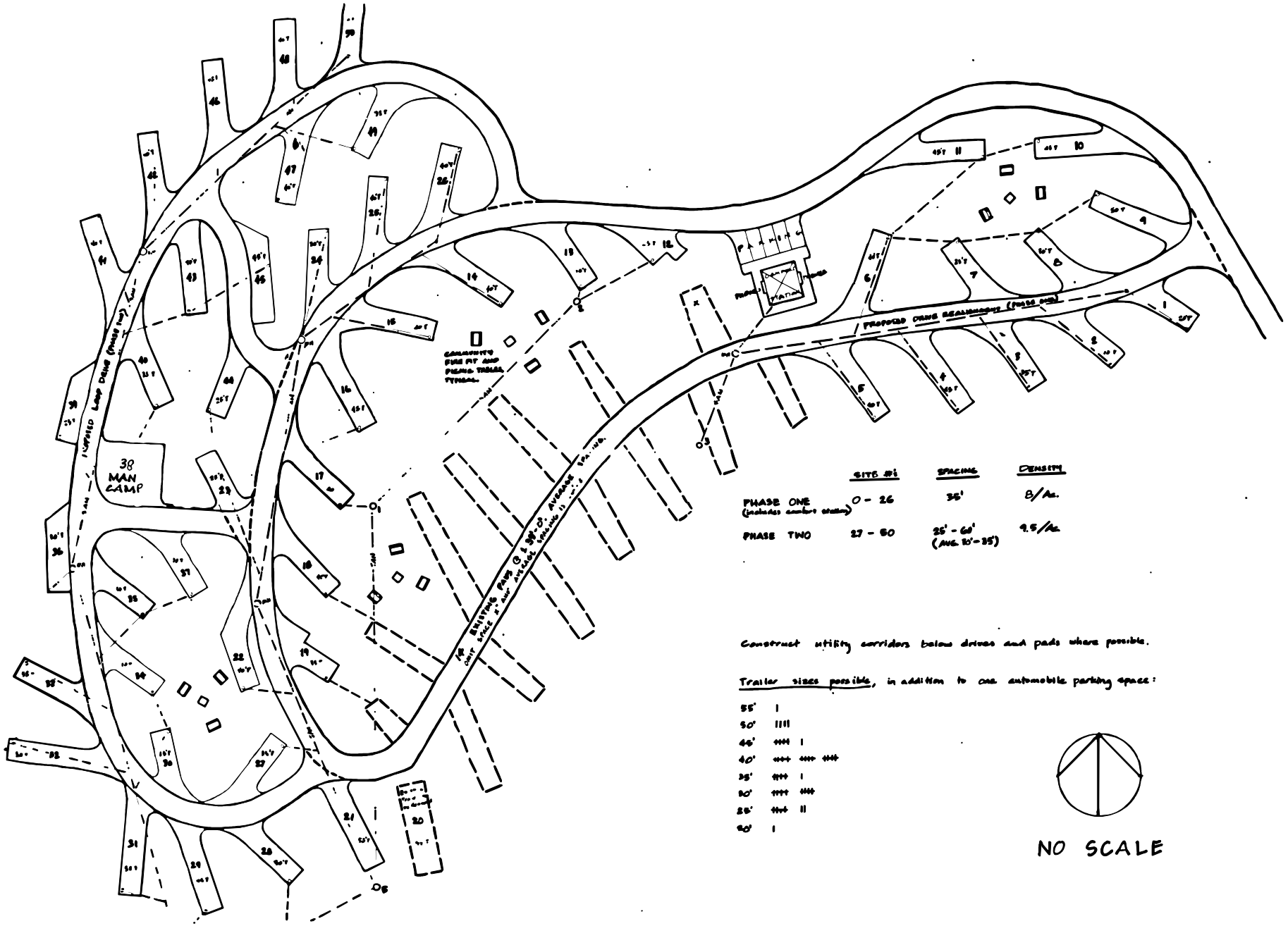
The project elevation is highest on its north side and gradually slopes downward towards the west and southwest. At the north end, an intermittent drainage flows northwesterly into a large meadow beyond the project.

The project area is generally forested with mature lodgepole pines, with the trees spaced apart. The site bubble extends beyond existing development by 1.7 hectares (4.2 acres) for all three action alternatives. There are several swales that provide drainage to the north. There is a small pond outside the northern boundary of the project and a two-track road extending in a northwesterly direction from the northeast corner of the project. This road terminates at an area that was, in the past, used by the park for dumping old material such as waste fill, old asphalt, logs and lumber from demolished buildings. This area appears to not have had any dumping activity for a number of years. There is an extensive meadow system beyond the forest to the west and north of the project area and adjacent to this dump area.

All of the following action alternatives would include the installation of underground utilities to include electric, water, and sewer. Phone lines would be installed to the laundry shower facility where pay phones would be installed. Fire hydrants would be placed according to national fire codes within the proposed RV loop. Three drainage culverts would be placed under the proposed roadway to handle projected stormwater run-off.

ALTERNATIVE A (PREFERRED) ■ Highway Construction Needs

This alternative would fulfill the road construction housing request of approximately 50 sites. This alternative would include infilling the existing contractor loop at Canyon and adding two smaller loops east and west of the existing loop. This alternative includes adding 10 new RV sites in the existing loop, 11 additional sites on an east loop and 29 sites west of the existing loop. The alternative includes one larger site for a potential mobile multi-housing unit "man camp" and a shower/laundry facility. Total number of new sites: 50; spacing between new sites of 9.1 - 10.7 meters (30-35 feet); total area of disturbance covered by this alternative: 1.7 hectares (4.2 acres).



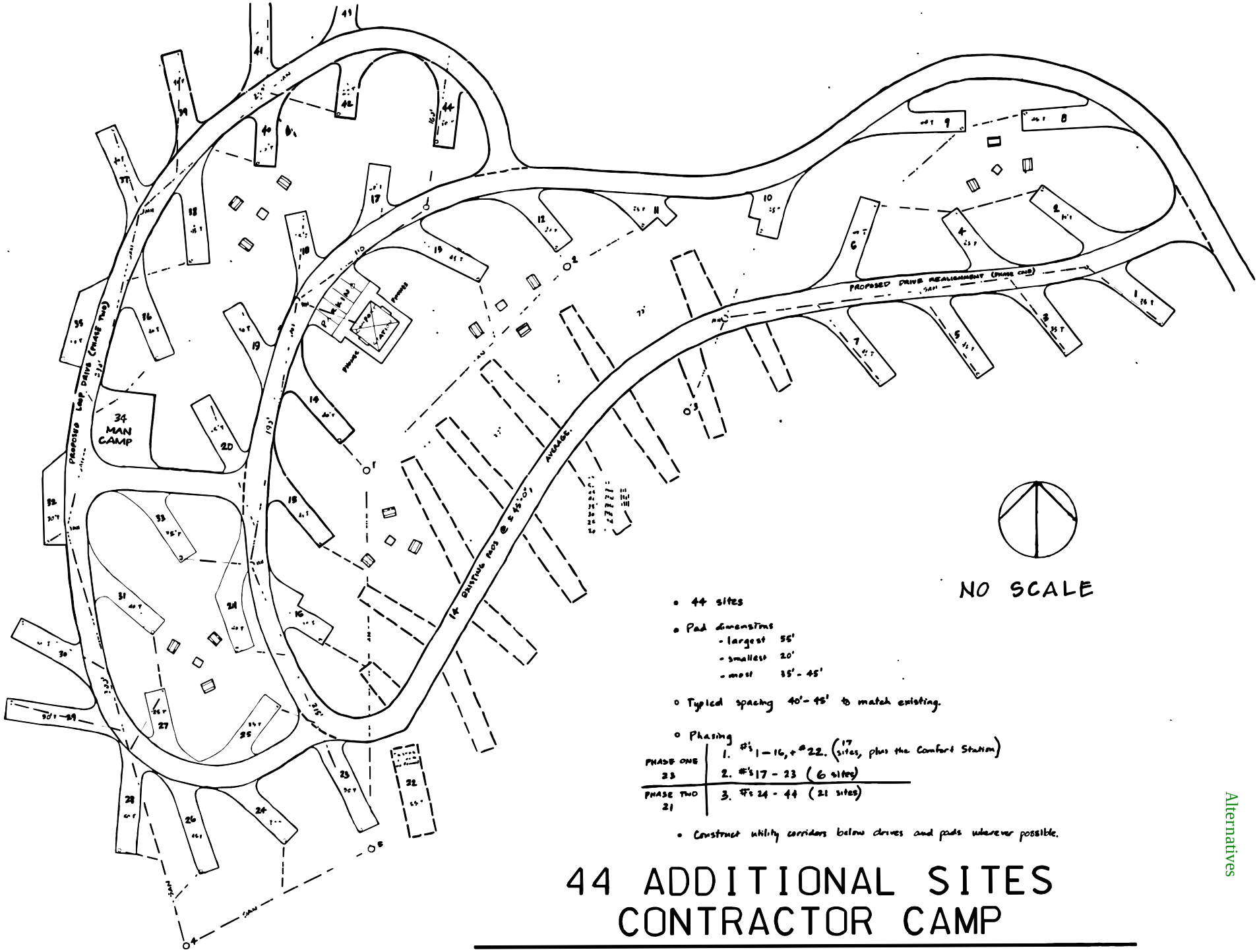
50 ADDITIONAL SITES CONTRACTOR CAMP

CANYON VILLAGE YELLOWSTONE NATIONAL PARK

ALTERNATIVE B ■ Wider Site Spacing

This is an alternative design to fulfill road construction needs and provide fewer sites in the expanded area of development than is described in Alternative A. This alternative would construct RV sites within the area described in Alternative A, but with wider spacing between the sites. The alternative includes one larger site for a potential mobile multi-housing unit "man camp" and a shower/laundry facility. Total number of new sites for this alternative is 44; spacing between new sites equals about 12.2 -13.7 meters (40-45 feet). This spacing matches the spacing of the RV sites in the existing loop sites. Total area of disturbance covered by this alternative is 1.7 hectares (4.2 acres).

Alternatives A,B, and C all incorporate mitigation measures for the loss of grizzly bear habitat which would occur if this project were to be constructed. These mitigation measures can be found on page 39 of this document.



- 44 sites
- Pad dimensions
  - largest 55'
  - smallest 20'
  - most 35' - 45'
- Typical spacing 40' - 45' to match existing.
- Phasing

PHASE ONE 23	1. #'s 1 - 16, + #22. (17 sites, plus the Comfort Station)
	2. #'s 17 - 23 (6 sites)
PHASE TWO 21	3. #'s 24 - 44 (21 sites)

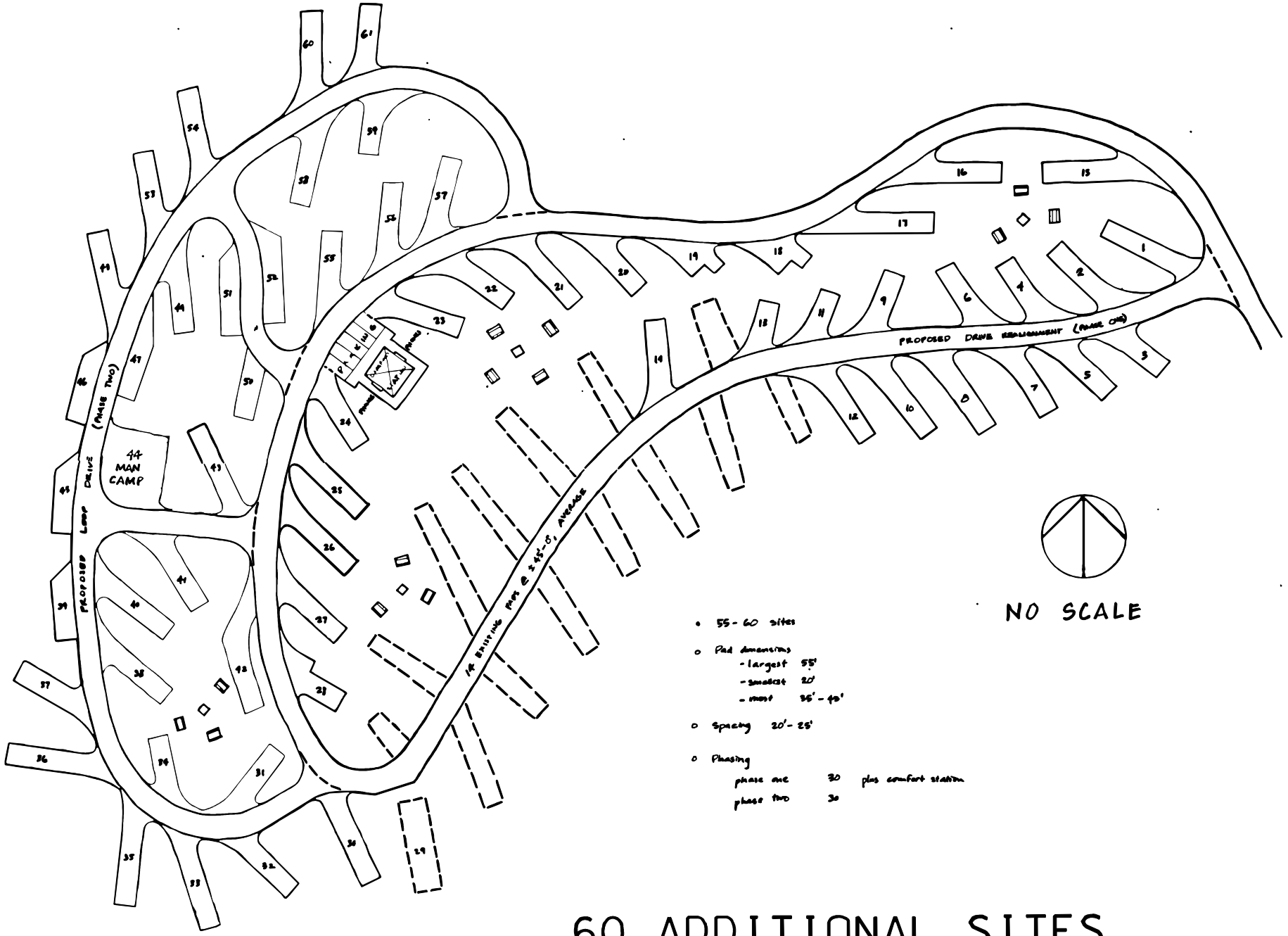
- Construct utility corridors below drives and pads wherever possible.

44 ADDITIONAL SITES CONTRACTOR CAMP

CANYON VILLAGE YELLOWSTONE NATIONAL PARK

ALTERNATIVE C ■ Highway Construction and Other Needs

This alternative would fulfill the RV space needs for road construction and other park construction needs. This alternative would include in-filling the existing loop and adding loops east and west of the existing loop. This alternative includes adding 13 new RV sites in the existing loop, 17 additional sites on an east loop and 30 sites west of the existing loop. The alternative includes one larger site for a potential mobile multi-housing unit "man camp" and a shower/laundry facility. Total number of new sites for this alternative is 60; spacing between sites of 6.1 -7.6 meters (20-25 feet); total area of disturbance covered by this alternative:1.7 hectares (4.2 acres). Up to 10 of these new RV sites could be used by park concessioner employees working in the Canyon area.

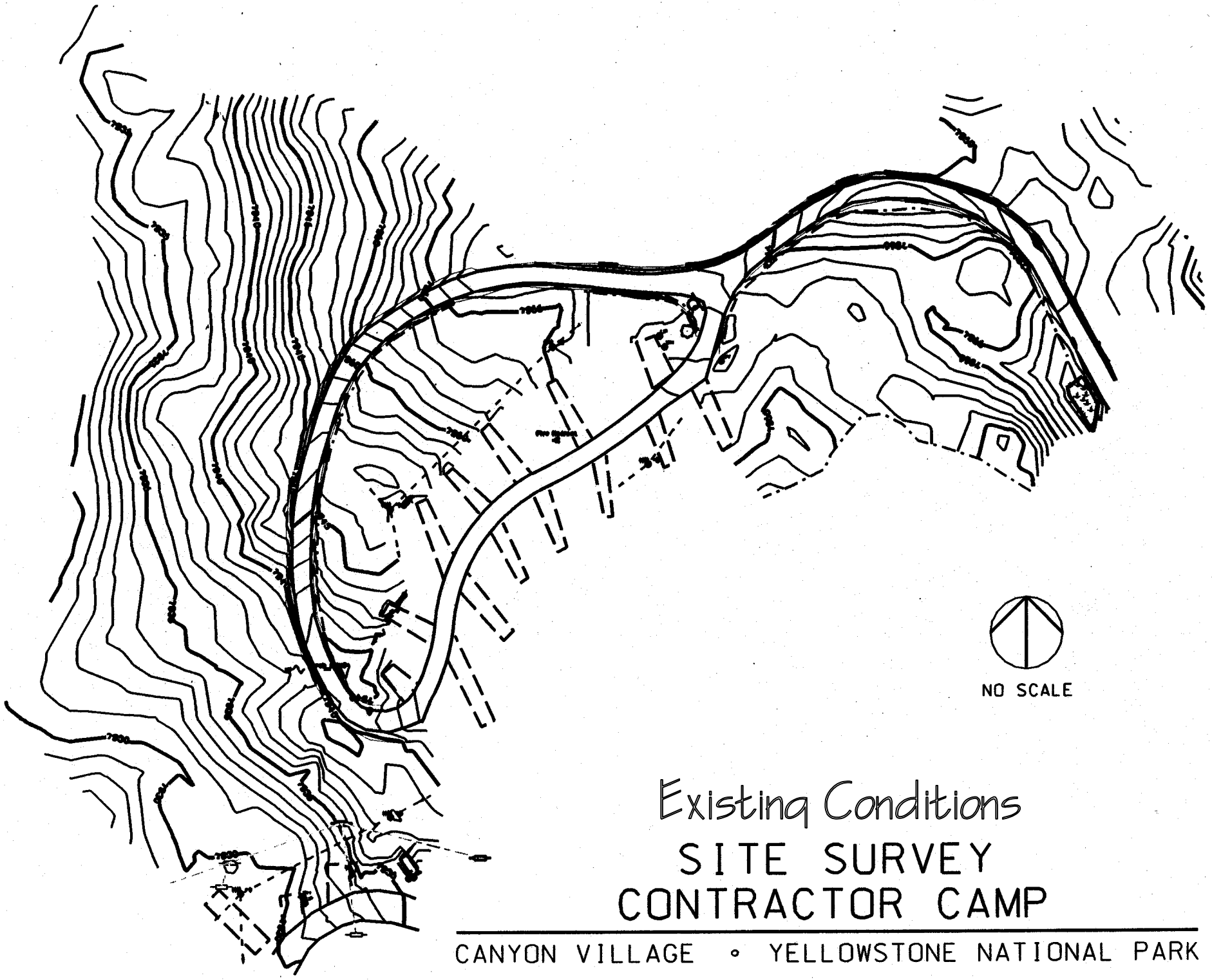


60 ADDITIONAL SITES
CONTRACTOR CAMP

CANYON VILLAGE . YELLOWSTONE NATIONAL PARK

ALTERNATIVE D ■ No Action

This alternative would not allow construction of contractor sites at Canyon beyond the existing bubble. Existing direction in the Parkwide Road Improvement Plan and the Housing Plan for Canyon would be adhered to. Housing for construction workers would be allowed in areas in the park where such housing has been approved in previous planning documents such as additional RV sites or dry camps in previously disturbed areas and in available housing outside the park. Contractor employees would be allowed to continue to use existing disturbed areas within NPS administrative and maintenance areas for dry camps. The existing RV loop would remain as is with 14 existing sites. .



Existing Conditions

SITE SURVEY
CONTRACTOR CAMP

CANYON VILLAGE • YELLOWSTONE NATIONAL PARK

ALTERNATIVES CONSIDERED BUT REJECTED

■ Combined RV and Multiple Unit

This alternative would provide housing to fulfill road construction needs in a reduced area of development. This concept would include infilling the existing contractor loop with 10 sites and building 1-2 multiple unit housing facilities east of the existing loop to accommodate between 40 and 50 workers. The alternative includes a shower/laundry facility. Total area of disturbance covered by this alternative: 1.2 acres. This alternative was rejected from further consideration because it was believed that most high-quality workers would not prefer this type of living condition. Additional reasons for rejecting this alternative include: many contractor employees have their own RVs, the cost of construction would be much higher, and potential problems associated with multiple contractors using the same building.

■ Infill RV Sites and Build New RV Sites at a Later Date Near Ballfield

This alternative would occur in two construction phases. The first phase would provide some housing to fulfill road construction needs in the short-term by infilling the existing contractor loop with 10 RV sites. Once much of the ballfield site was reclaimed with fill material from various road jobs in the area, an additional 40 RV sites could be built in the area surrounding the ballfield to the north and east in this second phase. These sites would be constructed at a higher density than those in the three action alternatives due to no trees in the area that would be designed around. The ballfield itself would be raised in elevation somewhat over its present elevation. Since the area would still be lower than the existing sewage pipes (a gravity flow system) a sewage lift station would be required to complete this alternative. This second phase (40 RV sites) could not be constructed for a number of years in order to use the area as a material waste site from various road jobs in the area. Housing demand for upcoming proposed road reconstruction projects would not be met in the short-term. This alternative would also include a shower/laundry facility in the second phase. Total area of disturbance covered by this alternative would be approximately one acre for the infill of RV sites and about an additional 4 acres of currently disturbed land that would be recontoured. This alternative was rejected from further consideration because it was believed that the timing of this project did not mesh well with the proposed road project schedule, and contractor housing demand would not be met.

■ Canyon Area

Other sites in the Canyon area have been considered for contractor housing. These sites include: 1) the ball field/dry dump area immediately south of the existing contractor camp. 2) an abandoned dry camp near the Canyon Campground, and 3) the "G" loop of the Canyon Campground. These sites were rejected for use as a permanent contractor camp because they do not have on-site utilities, i.e. water, sewer, and electrical hook-ups;

these sites would have to function as dry camps for construction workers. Negative factors include the need for a sewer lift station, the potential displacement of current functions that might require new disturbance if relocated, and the need to install long and deep sewer lines to meet the existing trunk line. There would also be no convenient access to toilet, shower, or laundry facilities. The areas near the campground would also have potential conflicts between contract workers and park visitors. This alternative was rejected because of additional cost of sewer and water infrastructure upgrades, and because of potential visitor and contractor conflicts resulting from the use of the "G" Loop portion of the alternative. While these sites were rejected for a permanent contractor camp, these areas could still be used for relatively short-term use by limited contractors for dry camps.

■ Canyon Area (additional alternatives)

Other alternatives within the existing Canyon development considered but rejected include a minimum disturbance contractor camp that would construct 10 to 15 new sites within the existing developed RV loop, constructing within the existing bubble and east loop with 25 to 30 new sites and 0.53 hectares (1.3 acres) of new disturbance. These alternatives do not meet the numerical occupancy needs of the project.

■ Lake Area

The Lake area of Yellowstone National Park has been considered for contractor housing. A contractor camp at Lake would fulfil the needs of road construction workers on east side road projects. However, all potential development sites for housing at Lake are currently commited in approved plans. Employee housing at Fishing Bridge is currently planned for removal (NPS 1988); Lake housing is currently filled to its capacity and a RV camp approved for concession employees (NPS 1993) was recently constructed. Additional housing expansion at Lake may further exacerbate the potential for bear-human conflicts when bears are using Lake area spawning streams (Reinhart and Mattson 1990; Gunther et. al. 1998).

■ Grant Village

The Grant Village housing area currently has a contractor RV court with 77 sites. However, all but 17 sites have been allocated to concession employees. Those 17 remaining sites have been used by road construction contractors working on east side projects. Allocating more RV sites for road construction contractors would displace other park and concession employees.

Comparison of Alternatives

Services and Facilities	Alternative A: Proposed Action	Alternative B: Wider Site Spacing	Alternative C Highway + Other	Alternative D: No Action
All Proposed Alternatives use the Same Site but with a Different Layout				
Number of new RV sites	50 new sites	44 new sites	60 new sites	No new sites
Shower and laundry facility	Yes, this structure is the same for Alts. A,B,&C	Yes	Yes	No
Allows for siting of a multi-person-type trailer	Yes	Yes	Yes	No
Allows for needs beyond highway construction	No, all sites would be used by FHWA contractors	No, all sites would be used by FHWA contractors	Yes, up to 10 sites could be used for others, concession employees, volunteers, etc.	No
Provides utility hook-ups to RV sites	Yes	Yes	Yes	N/A
Site spacing	9.1-10.7 meters (30-35 feet)	12.2-13.7 meters (40-45 feet)	6.1-7.6 meters (20-25 feet)	N/A

Comparison of Natural Resource Impacts

Resource	Alternative A: Proposed Action	Alternative B: Wider Site Spacing	Alternative C Highway +Other	Alternative D: No Action
Natural Resources				
Area of disturbance	1.7 hectares (4.2 Acres)	1.7 hectares (4.2 Acres)	1.7 hectares (4.2 Acres)	No new disturbance
Soils / Geology / Vegetation	Removal of 1.12 hectares (2.76 acres) of lodgepole forest	Removal of 1.02 hectares (2.51 acres) of lodgepole forest	Removal of 1.32 hectares (3.26 acres) of lodgepole forest	No lodgepole forest would be removed
Tree canopy appearance	Groups of trees	Partial canopy	Single trees	Full canopy
Water resources	No impact to wetlands	No impact to wetlands	No impact to wetlands	No impact to wetlands
Water quantity / quality (assumes 65 gal./day/site)	Additional monthly use of water = 97,500 gal	Additional monthly use of water = 85,800 gal	Additional monthly use of water = 117,000 gal	Water use would not change
Air quality	Short-term degradation due to construction activities (dust, equipment exhaust)	Same as alternative A	Same as alternative A	No short-term degradation of air quality
Potential increase in grizzly bear mortality (in Canyon area)	13 percent above existing rate	10 percent above existing rate	17 percent above existing rate	No change in potential mortality rate

Comparison of Cultural Resource Impacts

Resource	Alternative A: Proposed Action	Alternative B: Wider Site Spacing	Alternative C Highway +Other	Alternative D: No Action
Cultural Resources				
Prehistoric Resources Ethnographic Resources Historic Resources	No prehistoric, historic, or ethnographic resources were identified within the project area, thus there is no difference between the alternatives.			

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.

Given the above criteria, Alternative A (the preferred alternative) was determined not to be the best suitable fit for the balance that is required to be met as the environmentally preferred alternative. Alternative A is the preferred alternative though because it best provides housing for contractors and meshes with the time schedules that allows the park to best complete the road projects. Many of the upcoming nearby road projects will require a disposal site for excess excavated material. This disposal site would exist at the

ballfield site at Canyon. This site would be required for the first phase of the proposed Dunraven and Hayden Valley road projects and would be used for approximately 3 years in this capacity. Excess road material could be used to re-contour parts of this gravel barrow pit to more natural contours. Construction of the camp (Alternative A) adjacent to an existing RV camp reduces the impacts associated with new road construction for the RV loops, the density of sites allows for some tree canopy to be left.

- Alternative D, the No-Action Alternative, would not strike the balance between public and contractor safety. Alternative D would also require additional traffic on park roads that could add to existing congestion problems.

- All of the action alternatives (Alt. A, B, C) would improve safety of the visiting public and contractor employees to varying degrees.

- Alternatives A seems to strike the best balance between campsite density and allowing for some tree canopy to be left in place without creating a "blow-down" potential for those trees.

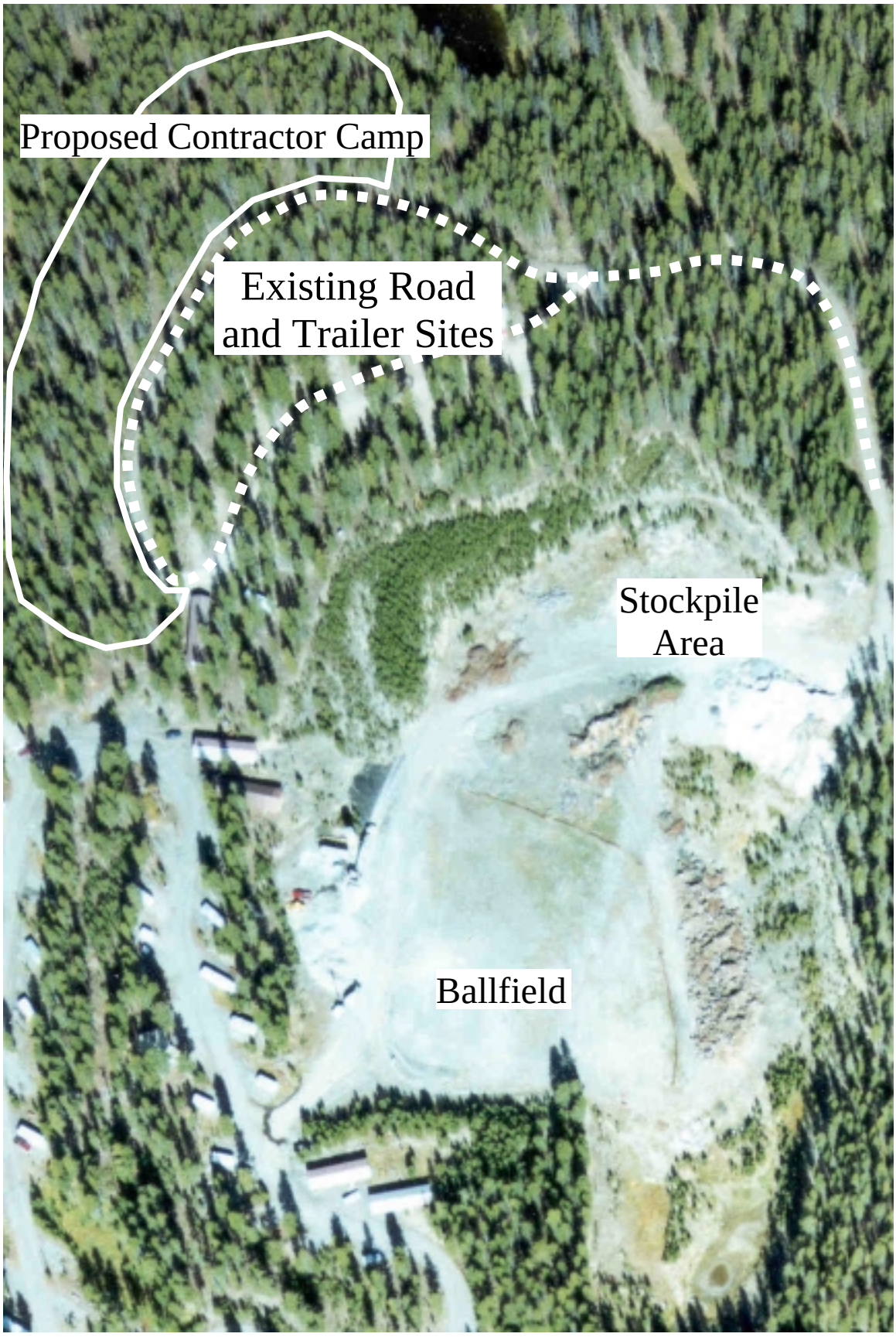
- Alternatives A, B, and C would all allow for the construction of a contractor camp that would use a gravity flow sewage system and does not require the need for a separate electric-powered lift station.

The environmentally preferred alternative would be to construct a contractor camp on the already disturbed area adjacent to the NPS employee housing area at or near the site of an existing ball diamond. This alternative was considered but rejected and was referred to as the Canyon area ballfield/dry dump. The site is presently lower than the surrounding terrain and would require the installation of a sewage lift station for the site to function. Currently an environmental assessment (EA) is being prepared for a road project to reconstruct the road between Canyon Junction and Tower Junction. The ballfield site is proposed as a disposal site for up to 30,000 cubic meters of waste excavated material from road cuts and digouts along this segment of road. The waste material would be used to reclaim portions of a disturbed borrow pit and return portions of the area to more natural contours. As part of this alternative the existing RV loop would have 10 to 15 RV sites constructed by infilling and increasing the density of sites on the existing loop. These additional in-fill sites could be constructed as soon as proper compliance procedures are completed. Additional RV sites to be constructed in the areas to be used as fill material disposal areas could not be constructed until after the first phase of the Dunraven road project was completed (approximately 3 yrs.). The lift station that would be required would need a back up power source and fuel storage and would entail additional maintenance time to keep the system working as compared with a gravity flow system which is proposed for all action alternatives. Depending on how many sites were to be constructed, the existing ball diamond would need to be removed or relocated. If relocated, additional impacts may occur if it were to be placed in an undisturbed area.

The environmentally preferred alternative would also keep from expanding development into non-disturbed forest and keep from encroaching further upon important edge and wetland habitats.

Timing of the two projects in this situation would be such that the larger portion of the contractor camp could not be built until after the first phase of the road project is completed. The road project is to be completed in two phases lasting an anticipated three years to complete each phase. Only the construction of 10 to 15 RV in-fill sites at the existing RV loop could be done prior or concurrently with the Dunraven Road project. It is for this reason along with those stated in the "Considered but Rejected" discussion that Alternative A was selected as the preferred alternative for the location of constructing a contractor camp at Canyon.

This alternative meets the national environmental policy expressed in NEPA (Sec. 101(b)) to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.


Proposed Contractor Camp
Existing Road
and Trailer Sites
Stockpile
Area
Ballfield

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Overview

The Canyon Village is a major developed area is in Park County, Wyoming, near the center of Yellowstone National Park. 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 ballfield.

Lodging for visitors is available from late June to late August. 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 also brought into the area for the winter.

Methodology for Determining Impacts

Impacts are described in terms of context (are the effects site-specific, local, or even regional?), duration (short- or long-term?), and intensity (negligible, minor, moderate, or major?). The thresholds of change for the intensity of an impact are defined as follows:

Negligible- the impact is at the lowest levels of detection
Minor- the impact is slight, but detectable
Moderate- the impact is readily apparent
Major- the impact is a severe or adverse impact or of exceptional benefit

Impairment

In addition to determining the environmental consequences of the preferred and other alternatives, National park Service policy (*Management Policies*, 2001) 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 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 the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must

leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is:

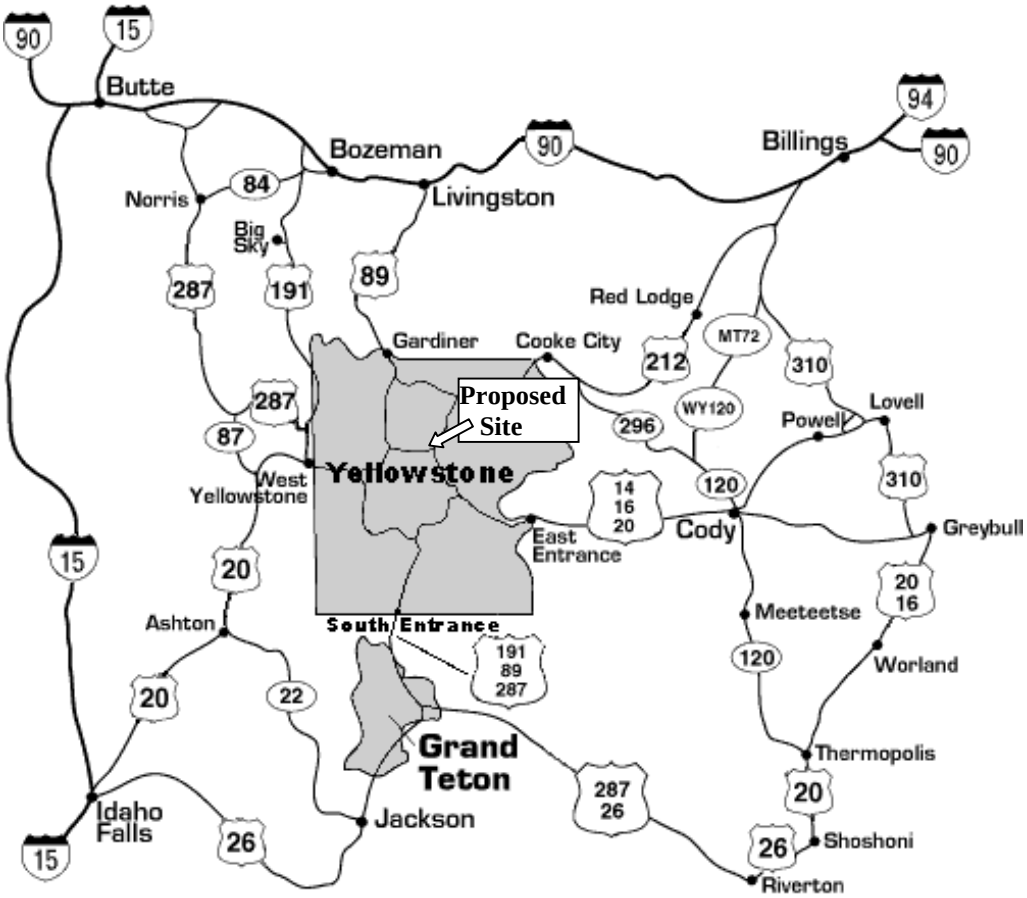
- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS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

Impairment may result from National Park Service 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.

Regional Setting

Yellowstone National Park encompasses 890,000 hectares (2.2 million acres), primarily in northwestern Wyoming and extending into south central Montana and eastern Idaho. Yellowstone National Park is the strategic core of an upland plateau called the greater Yellowstone area. This area comprises almost 4.85 million hectares (12 million acres) and is one of the last largely intact ecosystems in the world's temperate zones. In addition to Yellowstone, the area contains two other national park system units -- Grand Teton National Park and the John D. Rockefeller, Jr., Memorial Parkway. Portions of six national forests - Gallatin, Custer, Shoshone, Bridger-Teton, Caribou-Targhee, and Beaverhead-Deerlodge,– are within the greater Yellowstone area, as are two units of the national wildlife refuge system - the National Elk Refuge and Red Rocks National Wildlife Refuge. Although public lands make up the majority of the area (69%), private lands (24%), Native American reservations (4%), and state lands (3%) are also included. The greater Yellowstone area extends across 17 counties in three states. Cooperative agreements and interagency planning and coordination aid in management of the area as an ecological unit while also recognizing the different mandates of the various land-managing agencies.



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 combined, offer a broad range of activities to the park visitor.

The Park

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. The Lake and Grant Village developments occur on the north and west shores of Yellowstone Lake, 26 and 60 kilometers (16 and 37 miles) south of Canyon, respectively and both lie at an elevation of 2,377 meters (7,800 feet).

Climate and Weather

Yellowstone's weather is unpredictable. In summer, it may be warm and sunny with temperatures in the high 70°sF. At night in any given month, the temperature may drop close to freezing. A sunny warm day may become fiercely stormy with wind, rain, sleet, and, sometimes, snow. The climate of the park features long, cold winters that, typically, last from November until April. Snowfall ranges from 203 cm (80 inches) per season at Mammoth up to 508-1,016 cm (200-400 inches) at higher elevations. Between 75 percent and 85 percent of annual precipitation in the mountainous regions of Yellowstone National Park falls as snow. In the interior plateau regions of Yellowstone National Park, 45 percent to 65 percent of the precipitation falls as snow (Despain 1987). Winter snows in this region are light and powdery, although wind and warm temperatures can compact snow into very heavy, dense masses. January temperatures range from average daytime highs of -7°C (20°F) to nighttime lows of -29°C (-20°F), although lows can hit -40°C (-40°F).

Average maximum summer temperatures are usually in the 25°C (70°F) and occasionally in the 30°C (80° F) in the lower elevations. Nights are cool and temperatures may drop into the 0°-10°C (30°- 40°F). Depending on the elevation, temperatures may even fall into the -5°C (20° F) range with a light freeze. June is often cool and rainy; July and August tend to be somewhat drier, although afternoon thundershowers and lightning storms are common. At any time of year, there is a need to be prepared for sudden weather changes. Unpredictability, more than anything else, characterizes Yellowstone's weather.

Most areas within Yellowstone have a very limited season in which outdoor work and delivery of materials may be accomplished. This limited season causes compressed schedules for most construction contracts and a need to hire and house additional workers. For most parts of the park this limited work season occurs typically from mid- to late-May through early to late-October.

Natural Resources

Topography

Canyon Village is situated between the Washburn range to the north and Hayden Valley to the south. Elevation is approximately 2,377 meters (7,800 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.

Changes to the topography, because of this project, would include grading for an access road to the additional RV sites and grading of the sites themselves. Utilities would be trenched, placed, and back-filled as much as possible at the road edge. All three action-alternatives would disturb the same 1.7 hectares (4.2 acres) of area. The grading of the required roads and RV pads would have a moderate affect on the topography but would not impair park resources.

Geology and Soils

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. Numerous, subsequent lava flows filled the caldera, and periods of glaciation covered the region and sculpted the landscape.

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.

Topsoils would be stockpiled and saved for revegetation purposes. The project would not be expected to adversely impact the soils on site. Park geology and soils would not be impaired.

Hydrothermal Resources

Yellowstone contains three-fifths of the world's geysers and countless examples of other hydrothermal 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, Lake, and Grant developments occur within the Yellowstone caldera, but there are no geothermal features within these developments. Hydrothermal areas near these developments include Washburn Hot Springs 6 kilometers (4 miles) north of Canyon, Mud Volcano 11 kilometers (7 miles) north of Lake, and the West Thumb Geyser Basin 3 kilometers (2 miles) north of Grant. No hydrothermal resources are in the area of the proposed work site and none would be affected by this project. Hydrothermal resources would not be impaired by this project.

Vegetation

Canyon is situated in a forest dominated by lodgepole pine with occasional subalpine fire, Englemann spruce, and whitebark pine. 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 installation of RV pads, hazard trees could be created that would also need to be removed.

The forest understory is variable, but often includes such species as pinegrass, elk sedge, grouse whortleberry, and bluejoint reedgrass. There are wetlands scattered throughout the area (see "Water Resources and Water Quality" section below). Other species present may include horsetail, arrowleaf groundsel, and a variety of grasses and mosses. Bear foods present include yampa, strawberries, sedges, and timothy (exotic). Other area exotics include Canada thistle, butter-and-eggs, and yellow sweet clover. The forest is interspersed with meadows of various sizes that contain numerous shrub, grass, and forb species.

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 government housing area is Juncus filiformis, thread rush, which occurs in a modified or artificial pond in the south end of the softball field. Thread rush is a

Proposed Site for Contractor Camp

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 from Yellowstone National Park, Grand Teton National Park, and the Medicine Bow National Forest in Wyoming. A prior survey for rare plants in the Canyon housing area was completed for the early stages of the housing plan in areas designated at that time. These surveys did not locate any populations of vascular plant species of special concern.

The proposed area did not contain any rare plants that were recognizable in late September. Most of the area is subalpine fir/grouse whortleberry habitat type with a canopy dominated by lodgepole pine. Associated species include *Fragaria virginiana, Carex geyeri, Carex rossii*. Some of the swales are dominated by *Calamagrostis canadensis*. The meadow/wetland at the northwest edge of the area has been highly disturbed because of an old dumpsite on this location. Immediately adjacent to the dumpsite the area contains a much higher diversity of plant species and at least one permanent spring (Whipple 1997).

There are no federally listed or candidate (category I) plant species that occur in the park. However, there are two endemic plant species that occur only in Yellowstone 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 and would have a moderate long-term affect on the forest canopy of the site proposed for the contractor camp. Vegetation of the park would not be impaired by this project.

Water Resources and Water Quality

Yellowstone National Park encompasses a 9,065 square kilometer (3,500 square mile) watershed that preserves one of the most significant and near-pristine aquatic environments in the United States. The surface water resources of Yellowstone include 604 streams comprising 6,091 kilometers (3,785 miles) of running water, and 175 lakes with a total surface area of 43,706 hectares (108,000 acres). The dominant water features of the park include the headwaters of the Missouri and Columbia rivers located along the Continental Divide and Yellowstone Lake. Riparian wetlands provide important wildlife habitat year-round along the Yellowstone River, Pelican Creek, and Gibbon River, and many other water bodies. Drainages that specifically pertain to the Canyon Village development include the Yellowstone River and Cascade Creek, a tributary to the Gibbon River.

Waters in Yellowstone National Park are designated Class I by the state of Wyoming; therefore, no wastewater discharges are allowed in these park waters. These water resources are extremely important to both the natural environment and the regional economies of downstream areas.

Water quality has the potential to be affected by both natural processes and human activities. Natural influences include hydrothermal discharge, wildlife, fire, and storm runoff. Many of the lakes and streams in Yellowstone are very weakly buffered against

pH lowering that could be induced by the addition of acidic rain or snowmelt. Human activities have the potential to pollute the waterways since many roadways and visitor-use areas parallel streams, rivers, and lakeshores.

The Canyon area lies between the Yellowstone River and Cascade Creek. These drainages feature wetland areas along the river and its numerous small tributaries. Draft National Wetland Inventory mapping (1996-1997) has occurred (NPS 1997). Sediment traps would be installed before construction in areas of potential for sediment reaching existing water bodies. These traps would be left in place until it is determined that sedimentation is no longer a concern. At this point these traps would be removed. Neither of these water bodies would be affected by this project.

There are wetland areas along Cascade Creek within about one eighth mile from the proposed construction site; these areas of wetlands would not be affected by this project. Wetland resources would not be impaired by this proposed project.

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.

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.

There would be no significant long-term impacts on air quality or visibility in the Canyon area as a result of this project. 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. There would be no impairment of air quality resulting from this project.

Visual Resources and Noise

The original design of the Grand Loop Road was intended to provide the summer visitor with scenic and interesting views as well as access to the geysers and other places of

interest in the park. The pristine conditions, the striking geologic, thermal, and hydrologic features, and the presence and variety of wildlife all contribute significantly to the aesthetic value of Yellowstone. The Canyon area provides an important scenic opportunity to park visitors. These include the Grand Canyon of the Yellowstone River, the Upper and Lower Falls of the Yellowstone River, Artist Point, and the Uncle Tom's trail. The scenery along the Yellowstone River and Cascade Creek includes open stream bottomland and rolling hills surrounding the Yellowstone River, Hayden Valley, and Cascade Creek bordered by lodgepole pine uplands and Mount Washburn north of Canyon.

Human-caused noise sources include snowmobiles, snowcoaches, snowplows, snow grooming equipment, automobile and truck traffic, and aircraft noise. The timing and location of these noise-generating activities is important with regard to wildlife migration and areas of day-to-day habitat occupation. In some cases wildlife may be habituated to noise from roads or developed areas; in others they may avoid these areas.

Visual quality affects both visitor enjoyment and perception of Yellowstone. Canyon Village is a developed area, with parts highly visible to the public. The short-term visual effects of the proposed contractor camp would include construction equipment and possibly some screened views of the camp through the trees from the Dunraven road. Contractors would be required to maintain an organized construction site and to minimize adverse visual impacts on park residents and visitors in the area. The proposed project site is approximately 91 meters (300 feet) from the Grand Loop Road and is screened from view by existing mature lodgepole pine forest.

Wildlife

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.

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. Black bear 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).

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.

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. Wintering populations of mostly 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. Pronghorn antelope and mountain goats are not known to occur in the Canyon area. There would be no foreseen impacts to ungulates as a result of this project.

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 direct loss of habitat resulting from the construction of a contractor camp is a concern of this project. Although the Canyon Village area is not an ideal location strictly from a bear management perspective, this project by itself would not likely jeopardize the park's black bear or threatened grizzly bear populations.

Developments may increase human-caused mortality of bears by increasing the potential for bear-human conflict and the need to remove bears from the population due to concern for human safety.

Red fox are present in Yellowstone National Park and in meadows and forests near Canyon junction. Wolverines, which are very wide-ranging and rarely seen scavengers, have been reported more than once in the Canyon area. This is likely due to the presence of ungulates and the potential for winterkill. 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. The addition of new sites to the existing trailer court may increase the likelihood of wildlife habituation from unsecured food sources that would be mitigated by an additional ranger patrols in this area. Some temporary displacement of some individuals may happen during construction activities. This project may effect but is not likely to adversely affect theses species.

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 this project does not occur in any riparian areas, there will be no effect on any of these species.

The affects of this project on the wildlife of the park are not of a magnitude that would constitute impairment.

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 peregrine falcon was de-listed by the U.S. Fish and Wildlife Service in 1999.

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 concert with the spring and fall migrations. No neotropical species would be adversely affected by the proposed construction camp.

The following bird species are considered rare or sensitive and may occur in the vicinity of the Canyon area. 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. The construction camp impacts would be mitigated or would have no effect on these species if trees are sparingly taken down, development activities are restricted to a small area, and the development is positioned far away from important hunting areas such as open areas and wet meadows.

Amphibians and Reptiles

A survey of amphibian and reptile populations in the Canyon area was conducted in 1995 along the Grand Loop Road near Canyon Junction and in 1997 in the area of the proposed contractor camp at Canyon (Patla 1998). Based on historical records and the survey results, two species of amphibians are confirmed residents near the proposed site, the (boreal) chorus frog (*Pseudacris triseriata maculata*) and the Columbia spotted frog (*Rana luteiventris*). These two species inhabit the small pools near the proposed site and along the Cascade Creek drainage north and east of the site. Blotched tiger salamanders (*Ambystoma tigrinium melanostictum*) were not found near the proposed site but are known to exist in a man-made cistern approximately 1,200 meters south. The western (boreal) toad (*Bufo boreas*), a species that has been declining in the Yellowstone area (Koch and Peterson 1995), was not found nor is likely to be found in the Canyon area. One reptile, the wandering garter snake (*Thamnophis alegans vagrans*) is likely to inhabit the Canyon area. The rubber boa snake (*Charina bottae*) may possibly occur there as

well. The area of proposed construction of the contractor camp does not lie in known amphibian habitat or in an area of migration between known habitats. This project is not expected to have any effect on amphibians (Patla 1997).

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" as are the fluvial (river-dwelling) populations of this species. This project would not have any impact on any fish species.

Threatened and Endangered Species

Five species protected under provisions of the Endangered Species Act of 1973 (as amended) are present in Yellowstone National Park. The whooping crane (*Grus americana*) is listed as endangered. The grizzly bear (*Ursus arctos horribilis*), bald eagle (*Haliaeetus leucocephalus*), and Canada lynx (*Lynx canadensis*) are classified as threatened. The gray wolf (*Canis lupus*), 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 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, peregrine falcons, their eggs, parts, and nests would continue to be protected from unauthorized killing, possession, transportation, and importation by the Migratory Bird Treaty Act. Also, the species would continue to be monitored across the nation for the next 12 years to provide data on at least two generations of peregrines and ensure that the bird is doing well after being delisted.

Whooping Crane. Whooping cranes (*Grus americana*) are rare occasional summer migrants in Yellowstone. In recent years, no whooping cranes reside in Yellowstone National Park in the summer. For several years an individual of this endangered species has been unable to find a mate and resided in a remote area in the south end of the park. This crane died in March of 2000 after colliding with a power line in Colorado.

Presently, no whooping cranes reside in Yellowstone National Park. Whooping cranes have never been observed in the Canyon area, and therefore this project would have no affect on whooping cranes.

Grizzly Bear. Fewer than 1,000 grizzly bears are thought to survive in six 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. The Grizzly Bear Recovery Plan (USFWS 1993) guides the recovery effort.

The greater Yellowstone grizzly bear population is the second largest of the recovery populations and is estimated to have a minimum of 280-610 bears. 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 within or adjacent to bear habitat can influence bear populations both directly and indirectly. Direct impacts include human-caused bear mortality from management removal of habituated bears. Indirect impacts include reduction of habitat effectiveness by human-caused displacement from high quality habitats and behavior modification by habituation to humans. This may ultimately result in direct removal from the population (Gunther et al. 1998).

Grizzly bears are known to use habitats near the Canyon development area. When Yellowstone National Park developed areas are ranked, based on bear habitat preference, cub production, bear activity, bear-human conflicts, and bear management actions, the Canyon Village area rates second highest behind only Slough Creek Campground. Habitat use includes use of winter killed or weakened ungulates on winter ranges, preying on new-born elk calves near Canyon, foraging on vegetation by grazing grasses and forbs as well as digging for root crops, and feeding on pine seeds of upper elevation whitebark pine stands north of Canyon. A somewhat unique bear foraging strategy seen near the proposed site at Canyon is bears digging for false truffles. The area of the proposed site is considered medium-quality habitat (Gunther et al. 1998). The area surrounding the Canyon development is considered high quality spring, summer, and fall habitat.

The area around the proposed site at Canyon is considered to have high grizzly bear densities. The Canyon areas is currently ranked fourth among Yellowstone National Park developments in the number of grizzly bear sightings from 1987-1996. Canyon ranks between sixth and seventh in the number of bear-human conflicts in the same time period.

The number of grizzly bear management actions required in the Canyon developed area from 1987-1996 was four. This number could potentially increase by up to 15 percent,

and human-caused bear mortality (a rate of 2.1 bears in the ten years from 1987-1996) could increase by up to 13 percent above existing levels due to the increased overnight capacity of the Canyon developed area (Gunther et al. 1998).

Computer modeling conducted as part of the analysis for this project has determined that potential human-caused grizzly bear mortality would increase by one bear death every 36-46 years depending upon which alternative were to be implemented. The no-action alternative would not increase overnight capacity and thus would have the least impact on bears (Gunther et al. 1998).

This project may affect but is not likely to adversely affect, the park's threatened grizzly bear populations. See the "Grizzly Bear Mitigation" section later in this report for measures to reduce these affects.

Grizzly Bear Mitigation

Yellowstone National Park has evaluated various alternatives for constructing contractor housing within the park. Canyon Village has been selected as the location most suitable to fill the needs for contractors on future park road projects. The contractor camp would be built to accommodate between 45 and 60 recreational vehicle units from April through October.

The Yellowstone grizzly bear is listed as a threatened species under the Endangered Species Act. Developments within grizzly bear habitat can directly and indirectly affect bear populations. Direct impacts include human-caused bear mortality and loss of habitat. Indirect impacts include reduction of habitat effectiveness by human-caused displacement from high quality habitat and behavior modification by habituation to humans that may result in bears being removed from the population for human safety. (Gunther et al. 1998).

While the Canyon area appears the best suitable location within the park for a centrally located contractor camp, the Canyon Village developed area was classified in the top ranking for the quality of seasonal bear habitat, and in the number of bear sighting reports among Yellowstone National Park developments (Gunther et al. 1998). While the Canyon Village development was not considered the best location for construction of a contractor camp from a bear management perspective, Gunther et al. (1998) concluded the construction of a camp would not likely jeopardize the park's grizzly bear population.

To reduce the risk of direct and indirect impacts to the Yellowstone grizzly bear population or their habitat, the following mitigation measures are proposed to be implemented with the preferred Canyon contractor camp alternative:

- The contractor camp at Canyon Village would be constructed with "bear friendly" design. This includes a design that tightly spaces the camp with no loops or rows that are not in a centrally constructed design, having a centrally located common area for picnic tables and fire ring, and ensuring that no sites has individual picnic and campfire features.

- Bear-proof food storage boxes and sheds would be built to accommodate storage of foods, coolers, barbecues, and any other potential bear attractants. Bear-proof garbage cans and dumpsters would be provided to ensure that no attractants be available to bears and other wildlife. These containers would be emptied on a daily basis.

- A portion of a seasonal law enforcement position would be funded by the park road program for the specific years that the contractor camp would house workers on the FHWA park road construction projects. If others are using the camp, funding for this position would come from the group benefiting from the use of the facility. This would include a seasonal Canyon-based patrol ranger to implement food security patrols, conduct bear orientations to residents, and develop education and sanitation prevention measures toward reducing potential bear-human conflicts and human-caused bear mortalities. The effectiveness of this mitigation measure would be reviewed at some point in the future (not less than five years) to determine whether other measures would be more appropriate.

- A previously disturbed area located north of the proposed contractor camp along Cascade Creek would be reclaimed to provide habitat mitigation for the 1.7 hectares (4.2 acres) of undisturbed habitat that would be lost with the construction of the camp. The area of disturbance is approximately 0.85 hectares (2.1 acres), half of the size of the proposed camp disturbance. However, because it lies away from the existing Canyon development, is adjacent to Cascade Creek near wetland communities, and consists of edge habitat between forested and nonforested vegetation, it is considered higher quality habitat than the location of the proposed camp that lies within a lodgepole pine forest monoculture and is adjacent to the existing Canyon housing area.

Bald Eagle. The bald eagle (*Haliaeetus leucocephalus*) is currently the only bird in Yellowstone classified as threatened under the Endangered Species Act. Resident and migratory 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 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 margins of Yellowstone, Shoshone, Heart, and Lewis lakes and along the shorelines of several of the larger rivers in the park. Bald

eagles do not nest in the Canyon area and therefore should not be affected by the proposed construction camp.

Lynx. Lynx are considered rare in the greater Yellowstone area and 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 site is within the potential range of lynx.

The proposed location of the Canyon Contractors Camp is on the periphery of potential lynx habitat. However, all 78 hectares (193 acres) of habitat within 500 meters (1,640 feet) of the proposed Canyon Contractors Camp is considered potential lynx habitat. No lynx were detected and no lynx sightings have been reported in this area since 1887. No road-killed lynx have been reported either within or adjacent to the Canyon Village employee housing area and no sign of snowshoe hare (their primary food source) was present while erecting and monitoring the three scent stations. These scent stations were placed north of the Canyon Village developed area at one-mile intervals along the west side of the Tower to Canyon road. Stations were located within mature lodgepole pine forest between 2,377- 2,621 meters (7,800 and 8,600 feet) in elevation. Stations were in place for fourteen days from June 12, 2000 through June 26, 2000 (Gunther et al. 2000).

This project may affect but is not likely to adversely affect the park's threatened 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 would be re-established in Yellowstone National Park in order to restore this native 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 January 2001, there are approximately 160 gray wolves in 16 groups (including at least 11 packs) within the greater Yellowstone area. 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 use habitat in the area proposed for construction of the Canyon contractor camp. Immediate future use of this area by wolves is not predicted because of high human use around Canyon Village and the large amount of suitable prey available in other areas. Human-caused mortality and availability of prey are the two most limiting factors for wolf populations. To date, most human-caused mortality in the Yellowstone ecosystem has come from management removals (mostly related to livestock depredations), illegal kills (from poaching), and by collisions with vehicles. Within Yellowstone National Park, there has been no mortality of wolves due to either management removals or illegal kills. Five wolves within the park have been killed in collisions with vehicles. The proposed Canyon contractor camp 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 frequent the valleys near Canyon on established ungulate winter ranges because of the abundance of elk and bison. The proposed Canyon contractor camp would not be expected have any significant impact on elk or any of the species preyed upon by wolves, and therefore would have no effect on the gray wolf.

Candidate Species. A category I candidate species is a plant or animal species under consideration for listing by the USFWS as threatened or endangered. Current information indicates that listing of these species as threatened or endangered may be appropriate, but conclusive data on biological vulnerability and threat are not yet available. The Category I candidate species reported in the park include mountain plover (*Charadrius montanus*), boreal toad (*Bufo boreas boreas*), and fluvial arctic grayling (*Thymallus arcticus*).

Mountain plover are residents of the Canyon area. Much is unknown about the status of the boreal toad in Yellowstone. Arctic grayling are present in Cascade Lake and Grebe Lake, but the fluvial or river Arctic grayling are rare in Yellowstone waters. Lake grayling were established in Grebe Lake, the headwaters of the Gibbon River and have been found in the Gibbon River upstream from Gibbon Falls. Typical habitat for arctic grayling includes large stream systems with deep stream holes and large reaches of stream system without introduced game species such as rainbow, brown and brook trout. Since this project will have no impact on Cascade Creek or any riparian areas, it is not expected that this project will have any effect on these species.

Species of Special Concern. The great gray owl and boreal owl are found throughout the park, primarily in the subalpine zone in the summer and the montane and subalpine zones in the winter. Both species use conifer trees for nest sights and cover and open meadows to hunt. While boreal owl sightings are rare near the Canyon area, great gray owls are found within open meadows near Canyon Junction and Cascade Creek.

Wolverine. Known breeding dens of wolverines exist on Mount Washburn north of Canyon. Wolverine breeding dens have not been found in the location of the proposed project, therefore this project would have no 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 construction activities and the occupancy of the proposed contractor camp would have no impact on peregrines as long as the meadows are not developed.

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 in winter the population increases to somewhere between 40 and 300 birds, depending on the number of migrants spending at least part of the year here. The slow-flowing open water habitat required for swan survival is increased by thermal activity, but even in Yellowstone it becomes scarce during the coldest part of winter. Swans require a long season for the young to mature enough to fly, and the area's severe climate makes this area marginal range. 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 area.

This proposed project would not impair any threatened, endangered, or species of special concern.

Cultural Resources

An intensive archeological inventory conducted in 1996 for the proposed contractor camp covered 14 hectares (35 acres). The inventory utilized 30m (98 feet) transects. The inventoried area was 300m (984 feet) wide and 550 meters (1,804 feet) long (N-S). A file search of the Yellowstone Cultural Sites Inventory was conducted and identified no previously recorded sites in the project area. The inventory found no sites and one isolated find (a quartzite core).

HISTORIC RESOURCES

An inventory of the employee/trailer housing area immediately south of this project was conducted with one site recorded near the Canyon to Norris highway. Site 48YE43 is believed to be a dynamite bunker. It is two 50-gallon metal barrels dug into the side of a terrace (Johnson 1997).

A 1995 inventory along the Canyon Junction to Tower Road revealed Site 48YE195, a 9.5 square meter (102 square feet) excavated depression that was determined to be not eligible for listing on the National Register. Part of the modern Canyon Campground northeast of Canyon Junction was inventoried with negative results.

Neither of these two sites (48YE43 and 48YE195) would be disturbed by the proposed project.

A privy pit (site 48YE725) near the disposal area north of the proposed project area was inventoried in July 2000 and was determined ineligible for inclusion in the National Register of Historic Places. The Wyoming State Historic Preservation Office (SHPO) agreed that there would be no effect to site 48YE725 if the proposed project were carried out.

The disposal area on the north end of the proposed project area contains dispersed piles of logs, pieces of building parts from milled lumber, and some asphalt. The area is 150 meters (492 feet) east to west and 150 meters (492 feet) north to south. This material is not considered to meet the 50-year age requirement for an archeological site and was not recorded. This area would be restored by cleaning up debris and removing the logs and dumped lumber. The clean up of this area would help in mitigation of bear habitat lost through the construction the proposed contractor camp.

PREHISTORIC RESOURCES

The Canyon area contains numerous prehistoric and historic archeological resources. The 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.

ETHNOGRAPHIC RESOURCES

An ethnographic overview and assessment has been compiled to assist in the identification of ethnographic resources within Yellowstone. Tribal review of the document provided no information on ethnographic resources that may be present on the site of the proposed Canyon contractor camp. The construction of this camp was discussed at the regular tribal consultations held in 1999 and 2000 with no ethnographic resources being identified during or after consultation.

There are no known ethnographic resources in the project area of potential effect. This proposed project would not constitute the impairment of cultural resources in the park.

Social and Economic Environment

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 state of Montana, 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 gateway communities provide food, lodging, gasoline, and other automotive supplies and services as well as souvenirs and other goods and services to the motoring public.

The link between tourism and the gateway communities is evident, especially in West Yellowstone. In other areas, such as along the North Fork of the Shoshone River approaching Yellowstone's East Entrance, resorts have developed to serve both the park and national forest visitor.

Throughout the greater Yellowstone area, public lands provide the basis for much of the economic activity (recreation, mining, forestry, and agriculture) that occurs within the region. For the last few years, many communities have experienced a structural change in their economies. The communities are less dependent on extractive industries such as mining and timber. Instead, communities are more diversified and recreation has become a more important component of the economy.

Economic activity within the park is concentrated in six locations: Canyon Village, Fishing Bridge/Lake/Bridge Bay, Grant Village, Old Faithful, Mammoth Hot Springs, and Tower/Roosevelt. A wide range of visitor services including food, gas, lodging, transportation, horse rental, and medical services are available in these areas. These developed areas not only include the visitor service facilities mentioned above, but also include, roads, trails, utilities, employee housing, and park administrative facilities.

During the winter months, fewer park facilities are occupied due to the decrease in staffing levels. Older facilities are not winterized, which limits the amount of staff and visitors that can occupy the park during the winter season. Many administrative support facilities in the parks (ranger stations, maintenance areas, employee housing, and related structures) were developed for summer use and are inadequate for winter use.

Social and economic impacts as a result of this project would be a short-term minimal increase in spending for food and meals of contractor employees in the concession-operated businesses in the Canyon area. Local communities outside the park would see a negligible reduction of revenues that could have been gained from contractor employee spending.

Environmental Justice and Prime and Unique Farmlands and Floodplains

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 a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

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 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.

Prime and Unique Agricultural Lands
The Canyon contractor camp 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.

Floodplain Management (Executive Order 11988)
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.

Cumulative Effects

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act, require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (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 of previously undisturbed land are currently identified for commitment in construction projects in the park. 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 is possible through the Abandoned Mine Lands Program, a cooperative effort of the state of Wyoming and the National Park Service, and other restoration efforts.

The time span of development projects is also critical. This analysis primarily covers the period 2001 to 2007 and beyond as appropriate. The purpose of this discussion is to recognize the cumulative effects on resources, visitors, area residents, and staff of the Canyon Contractor Camp project in concert with the effects of other activities in the vicinity of the project, within the park, and on nearby lands.

Roadway Projects

The Parkwide Road Improvement Plan (1992) outlines a 20-year program of road construction throughout the park to bring Yellowstone's principle 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 access to the park enjoyment of its features, and financial expenditures 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 use of aggregate sources, possibly from existing sites needing reclamation within the park, as well as the disturbance of roadside soil and vegetation.

Reconstruction of the East Entrance Road began in summer 1994 and is expected to continue through 2004. Reconstruction of the Grand Loop Road between Madison and Biscuit Basin has been completed. The Northeast Entrance Road was resurfaced in 1997 and that is expected to extend the life of the road until it can be reconstructed in 2014-2020. A section of the West Thumb to Lake Junction segment of the Grand Loop Road was reconstructed with completion in 2000. Reconstruction of the first phase of the Madison to Norris road project began in the spring of 2001 and is expected to continue through 2003. A second phase project for this road segment is expected to begin in 2003 and continue through 2005. The reconstruction of the road between Canyon Junction and Tower Junction is scheduled to be started in 2002 and continue through 2007. The overlay projects for the road between Fishing Bridge and Canyon Junction is expected to begin in 2002 and continue through 2003. Other future road projects include the Canyon Rim Drives to be overlaid beginning in 2004. Reconstruction between Norris and Mammoth would start in 2006. Reconstruction of Mammoth to North Entrance is scheduled to start in fall 2007. A study would be completed prior to construction to determine if any changes in the location of this road would be needed. Start-up and completion dates for these projects are dependent on available funding.

The Federal Highway Administration has awarded a contract for the reconstruction of 12.4 kilometers (7.7 miles) of the Grand Loop Road between the Madison to Norris Junctions of Yellowstone National Park. Work began in May 2001 and will continue through the fall of 2003. The road was closed to the public starting August 27, 2001 for the remainder of the season. This will result in increased traffic on the Grand Loop Road in both the Old Faithful and Fishing Bridge areas.

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 2002 until the road can be reconstructed in 2014. The proposal would be to recycle and overlay the entire 25.3 kilometers (15.7 miles) of the road 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.

The Federal Highway Administration (FHWA) has awarded a contract for hauling 200,000 metric tons of material from Sylvan Pass to the Grebe Lake Pit near Canyon Village. Hauling began in June 2001 and will continue until late October 2001.

The park is currently reclaiming 4.0 km (2.5 miles) of an abandoned road known as the Turbid Lake Road. The Turbid Lake Road was part of Yellowstone National Park's East Entrance Road from 1902 until the road was reconstructed to follow the shore of Yellowstone Lake. Reclamation work began in 1997 and is scheduled for completion in 2001. Prime grizzly bear habitat and wetlands will be restored.

Other Projects Within the Park

Other actions would be occurring in the park during the course of this action, adding to the overall cumulative impact within the Yellowstone ecosystem.

The Canyon Visitor Center is scheduled for rehabilitation starting in 2003 and lasting at least two years. At Canyon Village employee housing would be replaced, as funds become available. Under the approved Canyon lodging plan, some obsolete guest cabins have been replaced and more will be replaced soon. Completion of a four-plex occurred in 2001.

The Norris wastewater facility is scheduled to be replaced in 2002/2003, and the Madison wastewater facility is scheduled to undergo a major restoration in 2003/2004.

In the Tower/Roosevelt area, concessionaire cabins have been upgraded and replaced in conjunction with rehabilitation of Roosevelt Lodge. Employee housing would be replaced pending funding, as would the upgrading of the water distribution system in the Roosevelt area.

The Finding of No Significant Impact (FONSI) for the Yellowstone Employee Housing Plan (part of the service-wide housing initiative) was signed in December 1992. Construction of some housing houses is proposed each year. In 11 developed areas, approximately 125 year-round and 347 seasonal housing units would be upgraded, replaced, or newly constructed if the plan was fully implemented. Current funding levels allow replacement or rehabilitation of a few housing units annually. Work at East Entrance has been completed and one four-plex unit was constructed at West Entrance. Work began in Lake and in Tower in 1997 and was completed in 1998. The Mammoth Housing Plan was released for public review in 1997. The plan has not been finalized or approved for implementation at this time. The concessionaire is also upgrading employee housing at several developed areas.

The Development Concept Plan, Lake/Bridge Bay FONSI was signed in 1993. The concessionaire has constructed an employee RV area in 2000. At Grant Village, housing to replace trailers may be constructed.

Development projects in the Mammoth Hot Springs area include housing rehabilitation, interior renovations of several buildings, work on the interior of the garage, and implementation of a visitor restroom facility in 2001.

At Old Faithful a number of projects are ongoing or scheduled to implement the approved Development Concept Plan, Old Faithful (NPS 1985). Planning is completed and construction started to replace the aging sewage treatment plant. Construction of employee housing one four-plex and one duplex unit to replace deteriorated quarters began in 2001 and will continue, as funding becomes available.

A number of development projects are planned that would have effects in more than one area of the park:

If the Fishing Bridge campsite replacement project begins, 100 replacement campsites would be built at Canyon Village, with an additional 175-replacement site at Norris. This project would eventually result in positive impacts on visitors and resources (see "Beneficial Development Effects" below) but at the cost of short and long-term cumulative impacts through resource commitment, construction activities and inconvenience to staff and visitors.

Commercial Services Plan and EIS will formulate and assess impacts of alternatives relating to the commercial services and facilities within and through out the park.

To comply with the 1992 Leaking Underground Storage Tank Act (40CFR 240,281) many fuel oil tanks currently in use at residences throughout the park are being replaced after testing as a part of routine maintenance procedures.

Projects Outside the Park

A number of projects outside the borers of the park have cumulative effects on the Yellowstone ecosystem. The Wyoming Highway Department is reconstructing 40 kilometers (24.9 miles) of U.S. Highway 14/20 (Cody Highway) between the East Entrance and the east boundary of Shoshone National Forest.

A Forest Highway project coordinated by the Federal Highway Administration and the State of Montana would reconstruct portions of U.S. 212, the Beartooth Highway. An initial portion of the project would be from the Northeast Entrance gate to the Montana/Wyoming state line. The project award date is expected to be in the fall of 2001. Work would start at that time or in the spring of 2002, and extend over at least two seasons. A minor amount of work would also occur inside of the park boundary, between the boundary and the entrance gate that is approximately ½ kilometer ($3/10^{th}$ of a mile) inside the park. The goal of this project is to widen the roadway to a 9.75-meter (32-foot) width. Another portion of the project would occur on the Shoshone National Forest in the State of Wyoming between milepost 25.6 and milepost 44.0.

Oil and gas leases exist outside the park boundaries, but currently no wells are in production. The only known potential oil or gas exploration near Yellowstone is the proposed Ruby Exploration oil/gas well on the Line Creek Plateau, south of Red Lodge, Montana, and 53 kilometers (32.9 miles) east of the park.

The Royal Teton Ranch, north of the park's boundary, presently has water rights to geothermal flows from natural springs in the area of Corwin Springs, Montana. Montana's supplemental environmental impact statement on the Royal Teton Ranch development proposals was completed in late 1993 but there has been no recent activity in the area. A 61 hectares (151-acre) tract of the ranch has been sold and transferred to the Gallatin National Forest to begin what will be the first phrase of a two-phase sale, transfer and protection of nearly 3,237 hectares (8,000 acres) abutting the northern border of Yellowstone National Park.

The Firehole Land Corporation has completed a 35-hectare (86.4 acres) land development in West Yellowstone, Montana, immediately adjacent to the park. The development, known as "Grizzly Park", contains an IMAX theater, a live bear and wolf exhibit, shops, and other commercial properties.

Beneficial Development Effects

A number of resource restoration and rehabilitation projects have been noted in the above discussions. These include restoration of abandoned quarries, roads, gravel pits in several locations throughout the park. The park has obtained funds from the Abandoned Mine Lands Program to begin this work. Pertinent to this project, the Little Thumb and Dry Creek pits and access roads were restored in 1997. Reclamation of the abandoned Turbid Lake road is underway. The reclamation of the Ice Lake Pit may also take place as part of this project.

Power and telephone lines have been buried at Grant Village and from Mammoth to Roosevelt, and new telephone lines have been buried at many developed areas around the park. Some buried lines have been replaced with microwave systems. Burying lines provides visual benefits because of the removal of overhead lines from scenic areas. Restoration of the utility corridors also becomes possible once the poles and wires are removed.

Conversion of 5 kilometers (3.1 miles) of the Fountain Freight and side roads to trails, combined with wetland mitigation projects, has reduced the effects of the Madison to Biscuit Basin road project, particularly on wildlife. The Fishing Bridge campground removal and other rehabilitation projects in the Fishing Bridge/Pelican Creek area are examples of projects that reduce the impacts of existing and proposed developments on grizzly bears. Similar projects would continue to restore areas that are no longer necessary for park management or intensive visitor use. All would certainly disturb nearby wildlife and other resources while they were being implemented, but their long-term goal would be to restore park resources such as wildlife habitat.

The National Park Service is also in the process of formulating a memorandum of understanding (MOU) with the US Fish and Wildlife Service, Corps of Engineers, and the State of Wyoming to initiate wetland banking. This MOU would cover wetland actions in Yellowstone and Grand Teton National Parks, and would assist the Park Service in crediting wetland restoration projects against losses of wetlands in future construction projects. The MOU might not be in effect for this project. However, it would be beneficial in maintaining a positive net effect on wetlands during future projects.

Analysis Results

The cumulative effects on most wildlife species of the various actions occurring or proposed in the park would generally be localized. Although these localized effects appear to be short-term in nature, the long-term effects are unknown. Certain wide-ranging wildlife species, such as the grizzly bear, could be affected by construction projects in widely dispersed locations. However, most construction projects would occur within current development zones and along roadways, areas which bears are aware of and tend to avoid. Stringent proposed mitigating measures should help minimize the effects on these species.

Most of the projects are of a maintenance type (road rehabilitation, housing construction, and sewage treatment facilities), providing appropriate facilities for visitors and employees. The other projects involve rehabilitation and are a result of Yellowstone's commitment to restoring disturbed areas in the park to natural conditions as directed by NPS management policies.

In the reasonably foreseeable future, the potential exists for the projects described in this analysis, when added to the past and present projects occurring in the Greater Yellowstone area, to cause some cumulative impacts through long-term loss of habitat

from construction and wildlife avoidance of developed areas and from incidental mortality.

Wildlife avoidance affects animals in two ways. There is a displacement effect when animals avoid otherwise suitable habitat because of human activity in the area. This results in a long-term loss of habitat. The other effect is an increase in animal density on the remaining habitat. Increased density can affect the ability of individual animals to survive.

Fixed resources (cultural sites, vegetation, and some wildlife) have the highest chance of disturbance from previously undisturbed land. However, park managers are aware of these possibilities and are taking steps to mitigate any negative cumulative impacts. These steps include data recovery plans for cultural resources as well as wetland and other natural habitat restoration on lands that are expected to be rehabilitated. These steps should lessen or completely cancel any negative impacts from these actions, when considered with other projects in this analysis that would otherwise add to the cumulative effects on the Yellowstone ecosystem.

Visitors who stay a short time in one area would be the primary recipients to feel the cumulative effects of the various actions within the park. Their entire visit might be disrupted by construction activities. Employees and area residents could be inconvenienced for a number of days or weeks by local construction projects. However, some long-term construction activities could inconvenience employees for several seasons.

Regulatory Compliance

If the NPS regional director decides that this project would significantly effect 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 is determined that there would be no significant impact from this project. The FONSI would be approved by the regional director.

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 NPS would seek USFWS concurrence with the determination of effect on threatened and endangered species.

Compliance with Executive Order 11988, Floodplain Management would be performed under NPS final implementation procedures as outlined in Special Directive 93-4, Floodplain Management Guideline, July 1993.

Compliance with the National Historic Preservation Act as amended would occur.

Native American tribes traditionally associated with Yellowstone National Park would be contacted for input and comment on this report.

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.

SELECTED REFERENCES, PREPARERS

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CONSULTATION AND COORDINATION

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

Wyoming State Historic Preservation Office

Persons, Organizations, and Agencies Contacted in Scoping:
A scoping letter was sent to approximately 160 individuals, agencies or groups in the fall of 1996, soliciting comments on the problems, issues, and alternatives to be addressed in the environmental assessment. Seven comment letters were 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
Sacajawea Audubon Society
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