



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

# Tower-Roosevelt Comprehensive Plan Environmental Assessment



June 8, 2009



# TOWER-ROOSEVELT COMPREHENSIVE PLAN ENVIRONMENTAL ASSESSMENT

## EXECUTIVE SUMMARY

The National Park Service (NPS) proposes to implement the Tower-Roosevelt Comprehensive Plan/Environmental Assessment (TRCP/EA) in Yellowstone National Park.

As facilities age and visitation patterns change, there is a need to alter or improve visitor services, facilities (buildings, roads, and paved parking areas), and utilities. Changes may include the addition, removal, replacement, or improvement of buildings, roads, parking areas, and utility systems. These development projects have the potential to impact the park's natural, cultural, and visual resources and visitor experience. Yellowstone National Park has developed a comprehensive plan that protects park resources, values, and visitor experience in the Tower-Roosevelt area by defining boundaries, limits, and standards of where and how development and redevelopment can occur. It defines a benchmark of desired conditions for resources and visitor experience that is based on the Tower-Roosevelt area's significance and fundamental resources and values. The plan sets *acceptable limits of change* to development that supports these desired conditions. Finally, the plan proposes possible projects that help achieve the desired conditions for resources and visitor experience while remaining within the scope of the acceptable limits of change for the Tower-Roosevelt area.

The comprehensive plan provides a framework for decision-making that NPS staff, managers, and partners would use when developing and evaluating project proposals for this area. Rather than evaluating projects individually, on a case-by-case basis with separate environmental compliance analysis, Yellowstone National Park proposes to use this framework to identify suitable locations, building sizes, functions, and design standards already assessed for environmental impacts and determined to be within acceptable limits of change for the area.

The TRCP/EA evaluates three alternatives for the proposed comprehensive plan. Alternative A: *No Action*, Alternative B: *Medium Level of Change*, and Alternative C: *Low Level of Change*. The park has not selected a preferred alternative. Alternatives B and C, the action alternatives, utilize different levels of acceptable limits of change, which consist of three distinct components used in combination: buildable planning zones (location and extent of change), planning prescriptions (primary function and maximum size of change), and design standards (characteristics of change). The action alternatives differ in the locations and sizes of the buildable planning

Fundamental Resources and Values are important systems, processes, features, visitor experiences, stories, scenes, sounds, or other resources and values that warrant primary consideration during planning because they contribute to the significance of the Tower-Roosevelt area, the park significance, and/or are critical to achieving the park's purpose.

Acceptable limits of change are guiding principles that define restrictions on what kind, where and how much development and redevelopment can occur in the Tower-Roosevelt area, without resulting in unacceptable impacts to natural, cultural, visual resources or visitor experience. They help achieve desired resource conditions and visitor experiences.

Desired conditions for resources and visitor experience are benchmarks for natural, cultural, and visual resources and visitor experiences that are to be achieved while considering changes to the built environment in order to preserve the area's significance and fundamental resources and values.

zones and the sizes of the development footprints—and therefore some of the future possible projects that are being considered.

Most of the differences in impacts in the alternatives of the Tower-Roosevelt Comprehensive Plan occur in Health and Human Safety, Visual Quality, Visitor Use and Experience, and Park Operations. The Tower-Roosevelt Comprehensive Plan identifies natural and cultural resources, especially those protected by law or policy and are intended to be avoided or mitigated. Action Alternatives B and C both use the planning components to keep impacts to natural and cultural resources at a minimum.

In the No Action Alternative A, no comprehensive plan would guide future change to visitor services, facilities and utilities. Alternative A assumes existing conditions would likely remain the same; however projects could be proposed and be evaluated on a case by case basis using separate environmental compliance analysis. The impact analysis of Alternative A assumes that without a comprehensive plan to guide future development, future actions could lead to unanticipated cumulative impacts and fundamental resources and values could be incrementally altered.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet objectives of the proposal, 2) evaluates potential issues and impacts to Yellowstone's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. The park conducted public scoping from May 26 to June 30, 2006 to assist with the development of this plan; comments were received in support of developing the plan. No major impacts are anticipated as a result of this project. Implementation of the proposed action would not result in unacceptable levels of impacts to park resources. Comments received during the public review of this document would be considered in the subsequent selection of a preferred alternative and final plan. During public comment, the park is seeking additional possible projects that might be added to the plan.

## **How this Tower-Roosevelt Comprehensive Plan/Environmental Assessment is Organized**

The following summarizes the organization and highlights important sections of this document for the reader:

**Chapter 1: Purpose and Need** explains the basis for the Tower-Roosevelt Comprehensive Plan, the planning process, and background information on National Park Service policies and planning efforts that guide this analysis. The Project Area is indicated in Figure 1 and the Area Features and Planning Locations are shown in Figure 2. The Comprehensive Planning Process is illustrated in Figure 3, while the Planning Components are illustrated in Figure 4. There is also a section describing desired conditions for resources and visitor experience in the Tower-Roosevelt area and a list of resource impact topics important for evaluating alternatives.

**Chapter 2: Alternatives Considered** describes the proposed alternatives in detail. Figure 5 compares alternatives Figures 6 through 13 illustrate the planning components for each alternative by locations in the Tower-Roosevelt area. Table 1 summarizes environmental impacts by alternative. Table 2 compares alternatives based on their success in achieving the objectives; and Table 3 evaluates possible projects by alternative.

**Chapter 3: Affected Environment** describes the existing environmental conditions in the Tower-Roosevelt area for those resource impact topics identified in Chapter 1. The information in this chapter provides the baseline for analysis.

**Chapter 4: Environmental Consequences** discloses the environmental effects of the proposed alternatives on the resource impact topics identified in Chapter 1 and described in Chapter 3. This chapter is organized by resource impact topic. For each resource topic, methodologies, assumptions, intensity levels and thresholds of change are identified followed by details on impacts for each alternative.

**Chapter 5: Consultation and Coordination** describes the scoping conducted for this plan/EA and lists those who prepared the document.

**Appendices:** Provide a blank project evaluation form (Appendix A), resource maps for all surveyed areas (Appendix B) and area photos (Appendix C).

## **Public Comment**

You may submit written comments through the NPS Planning, Environment and Public Comment (PEPC) internet website (<http://parkplanning.nps.gov/yell>) or mail them to the superintendent at the address below. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comments (including your personal identifying information) may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments are due by midnight, July 9, 2009 MDT.

Superintendent  
Yellowstone National Park  
Tower-Roosevelt Comprehensive Plan EA Comments  
P.O. Box 168  
Yellowstone National Park, Wyoming 82190

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Figure 1: Tower-Roosevelt Project Area within Yellowstone National Park



# Chapter 1: PURPOSE AND NEED

## INTRODUCTION

In 2004, Yellowstone National Park staff and managers were repeatedly presented with individual projects by park staff, concessioners, and partners proposing to alter or upgrade visitor services, facilities, and utilities in the Tower-Roosevelt area (Figure 1). It became apparent that evaluating these projects individually, on a case-by-case basis, with separate environmental compliance actions was a time-consuming, repetitive process that could lead to unanticipated cumulative impacts to natural and cultural resources. Therefore, proposed projects were temporarily postponed until a more complete evaluation of the resources of the area could be conducted, desired conditions for resources and visitor experiences could be established, and a plan that guides change in development could be adopted.

Many of the facilities that support the existing range of visitor services within the Tower-Roosevelt area were built between fifty and ninety years ago. Since then, visitation has increased. Aged facilities sometimes require rehabilitation. Over the years, stop-gap measures such as single vault toilets and employee housing trailers may have out-lived their usefulness and become substandard. Finally, in 2001, the Canyon Junction to Tower Junction Road Improvement Environmental Assessment proposed the removal of the general store and safety-related improvements to the congested parking area at the Tower Fall Trailhead.

As facilities age and visitation patterns change, there is sometimes a need to alter or improve visitor services, facilities (i.e. buildings, roads, parking areas, trails, and overlooks), and utilities. Changes may include the addition, removal, replacement, or improvement of buildings, roads, parking areas, and utility systems. Although some types of NPS planning documents identify specific proposals showing exact designs and locations for these kinds of changes, these plans often become obsolete with the passage of time due to changing technology, unpredictable funding, and changing trends in visitor use and resource conditions.

For this reason, Yellowstone National Park has developed a comprehensive plan that preserves and protects natural, cultural, and visual resources, and visitor experience in the Tower-Roosevelt area by setting a benchmark for desired conditions for resources and visitor experience and defining boundaries, limits, and standards of where and how development and redevelopment can occur in order to achieve those desired conditions. Desired conditions for resources and visitor experiences are based

Fundamental resources and values are important systems, processes, features, visitor experiences, stories, scenes, sounds, or other resources and values that warrant primary consideration during planning because they contribute to the significance of the Tower-Roosevelt area, the park significance, and/or are critical to achieving the park's purpose. These are described on page 10.

Acceptable limits of change are guiding principles that define restrictions on what kind, where and how much development and redevelopment can occur in the Tower-Roosevelt area, without resulting in unacceptable impacts to natural, cultural, visual resources or visitor experience. They help achieve desired resource conditions and visitor experiences.

Desired Conditions for Resources and Visitor Experiences are benchmarks for natural, cultural, and visual resources and visitor experiences that are to be achieved while considering changes to the built environment in order to preserve the area's significance and fundamental resources and values.

on the Tower-Roosevelt area's significance and fundamental resources and values. The plan sets *acceptable limits of change* to development that supports and helps achieve these desired conditions. The comprehensive plan provides a framework for decision-making that NPS staff, managers, and partners would use when developing and evaluating project proposals for this area. The framework includes suitable locations, building sizes, appropriate functions, a list of possible projects, and design standards already assessed for resource compliance and determined to be within acceptable limits of change for the area. It is designed to provide a flexible, structured approach that allows park staff and managers to anticipate the impacts of different actions and then adjust decision-making depending on the impacts. Similar to the adaptive management approach conceptualized by Peterson et al (2003), comprehensive planning is meant to evaluate possibilities in an uncertain future, while providing guiding principles for managers to use for informed decision-making.

The Tower-Roosevelt Comprehensive Plan and Environmental Assessment (TRCP/EA) presents alternatives for this type of comprehensive plan. Two "action" alternatives are presented in the TRCP/EA, as well as a "no action" alternative. The two action alternatives utilize different levels of acceptable limits of change, which consist of three distinct components: buildable planning zones (where change can take place), planning prescriptions (primary functions and size restrictions for change), and design standards (characteristics of change) to guide project development and decision-making. The alternatives are described in Chapter 2, Alternatives Considered. The action alternatives differ in the locations and overall sizes of the buildable planning zones and also in the maximum development footprint size within these zones. As a result, they also differ in the possible future projects that are accommodated within those zones. Alternative A is the no action alternative, which would return the Tower-Roosevelt area to the process of considering proposed projects individually on a case-by-case basis rather than providing a comprehensive plan. Alternative B adopts a comprehensive plan with medium levels of change for the Tower-Roosevelt area while Alternative C adopts a comprehensive plan with low levels of change. Alternatives featuring a high level of change and no change were considered but rejected.

*Because conditions on the ground may change, the resource assessments that provide information on a variety of natural and cultural resources in the Tower-Roosevelt area should be updated every ten years, or as needed.*

The TRCP/EA evaluates the environmental impacts that could result from case-by-case project consideration, and impacts from implementing a final Tower-Roosevelt Comprehensive Plan. Future possible projects considered in this plan that fall within the scope of the buildable planning zones, planning prescriptions, and design standards would be regarded as within the acceptable limits of change and may be considered for the park approval process for construction within the Tower-Roosevelt area. Possible projects that

fall outside the scope of the buildable planning zones, planning prescriptions, or design standards are likely to exceed the environmental effects of the proposed alternatives, would be considered beyond the acceptable limits of change, and would be rejected. If future possible projects, not considered within this plan bring forth new information and demonstrate a compelling need for consideration, additional analysis that follows the National Environmental Policy Act would be required.

All projects that have the potential to affect wetlands, waters of the U.S., rare plants, and/or cultural resources must go through additional steps to comply with applicable laws and policies, even if they are within the scope of this plan. This is identified in the Project Evaluation Process.

## BACKGROUND

Yellowstone National Park encompasses approximately 2.2 million acres (3,472 square miles) in the northwest corner of Wyoming and extends west into Idaho and north and west into Montana. Yellowstone was established by an Act of Congress on March 1, 1872. It is the core of the Greater Yellowstone Ecosystem (GYE), an approximately 18 million-acre area that includes Grand Teton National Park and John D. Rockefeller, Jr. Memorial National Parkway to the south, six national forests, three national wildlife refuges, Bureau of Land Management holdings, and additional tribal land, state land, towns, and private property. The GYE is one of the largest remaining intact temperate ecosystems in the lower 48 states.

The Tower-Roosevelt area is located in the northeast part of Yellowstone, 18 miles east of Mammoth Hot Springs (park headquarters) and includes the junction of the Grand Loop Road and the Northeast Entrance Road (Figure 1). It lies within an area known as the Northern Range, which covers over 500 square miles of critical wildlife habitat in the Lamar and Yellowstone river basins, overlapping the boundary between Wyoming and Montana. The Tower-Roosevelt area contains geologic features, varied wildlife habitat, and historic districts that contribute to the character of the area and provide opportunities for recreation, education, and conservation.

Thirty-five years ago, the Yellowstone National Park Master Plan (NPS 1974) stated that for the Tower-Roosevelt area:

*Although the present flavor and character of this development is appropriate, the individual structures have outlived their usefulness and should be replaced. A “western camp” featuring rustic accommodations and family-style meals within acceptable ceilings should be considered. Although the facility will function as the focal point for traditional horse use within the park, only minimum stock*

### **Fundamental Resources and Values of the Tower-Roosevelt Area**

*Developed as a stage stop in 1906, Tower-Roosevelt area’s significance is based on: (1) the historic and rustic Roosevelt Lodge and associated cabins that preserve the small scale western camp setting and experience, and the historic and rustic Tower Junction Ranger Station that presides over Pleasant Valley; (2) traditional horseback trail rides, wagon rides, and a western cookout; (3) geologic features and processes that are revealed at the northern end of the Grand Canyon of the Yellowstone, including the 132-foot Tower Fall waterfall and spectacular basalt rock formations; and (4) the Northern Range; its diverse habitat, wildlife, scenic viewing opportunities, hiking, and fishing. The fundamental resources and values that support this significance are:*

**Roosevelt Lodge Historic District:** *Roosevelt Lodge, a modest, rustic log structure, is tucked away at the forested edge of Pleasant Valley. The smallest of all Yellowstone’s historic lodges, its front porch has been used for relaxing, informal education programs, and viewing of distant mountain ranges since 1919. Located on the site that was rumored to have been occupied once by President Theodore Roosevelt, it began as a western tent camp and stage stop in 1906. Small rustic cabins surround the lodge and are oriented around a meadow encircled by Douglas fir trees, quaking aspen, and the now dry channel of a once tumbling mountain stream. Unlike the lodges at Old Faithful, Lake, and Canyon, Roosevelt Lodge was not developed at a popular park feature. Instead, Camp Roosevelt was historically intended to be “something on the order of a dude ranch of the west,” providing a remote place from which to enjoy the streams, trails, traditional horse use, and views of the Northern Range. It was listed on the National Register of Historic Places in 1983 as a historic district. It is nationally significant for its role in park guest accommodations, education, and rustic architecture.*

**Tower Junction Ranger Station:** *Formerly a soldier station, the U.S. Army moved this building to this site in 1907, where it presides prominently over the Tower-Roosevelt area. Modest and rustic, it overlooks Pleasant Valley. It currently serves as a NPS residence.*

**The vast and diverse habitat of the Northern Range and its outstanding natural scenery:** *Sweeping views of streams braiding through grassy meadows against a backdrop of forested slopes, rugged mountains, and rivers of the Northern Range are ecologically intact and virtually unmarred by human development.*

**Wildlife:** *Wildlife thrives within the diverse habitat of the Northern Range. Visitors have the opportunity to see wolves, grizzly and black bears, elk, pronghorn, bison, deer, bighorn sheep, and moose.*

**Geologic wonders:** *The 132-foot Tower Fall, Overhanging Cliff basalt rock formation, and Calcite Springs at the northern end of the dramatic Grand Canyon of the Yellowstone are easily accessed by visitors.*

**Recreational activities:** *Visitors have opportunities to experience the wilderness character of the Northern Range through sight-seeing, trail rides, wagon rides to a western-style cookout, fishing, cross-country skiing, and hiking.*

*required for day-use riding will be accommodated on site. Special stock required for extended pack trips will be trucked in as needed.*

*Roosevelt will become the focal point for all horse concession base station operations. Expansion of this activity, to consist of backcountry pack trips of varying duration, will be encouraged. Unloading ramps and holding corrals at major trailheads, with additional horse trails to accommodate this use, should be studied and developed at an early date.*

Today, most historic visitor uses and experiences continue to be relevant to park visitors. The most recent visitor-use survey conducted for Yellowstone National Park (University of Idaho 2006) provides information about visitor use patterns and preferences. The survey results indicated that several of the activities pursued by visitors in the Tower-Roosevelt area are important to them. In keeping with the quiet and secluded character of Tower-Roosevelt, of the seven developed areas of Yellowstone, it was the area in the park that was least visited. A majority of park visitors participated in sight-seeing, taking a scenic drive, and viewing wildlife and birds. Almost a third of respondents pursued trail rides, with a majority stating they enjoyed this activity. Almost a quarter of the respondents ranked scenic motorized tours as a popular activity and one-fifth participated in the western cookout at Yancey's Hole. Finally, when asked to list any services they would like to have available in park developed areas for a future visit, the top response was, "keep it natural with no further development."

## **Project Area**

Most visitor service facilities in the northeast part of the park are centrally located within the Tower-Roosevelt area. For the purposes of the plan, the Tower-Roosevelt area has been divided into eight separate planning locations where the area's features and facilities are clustered: (1) Roosevelt Lodge, (2) Roosevelt Corrals, (3) Tower Ranger Station, (4) Tower Administrative Services, (5) Tower Junction, (6) Tower Fall Trailhead, (7) Tower Fall Campground, and (8) Yancey's Hole. Figure 2 shows the area features and planning locations. The alternatives in Chapter 2 are described by planning locations, with charts that outline the acceptable limits of change for each of the eight locations. The locations are:

**Roosevelt Lodge:** Early in the park's history, this area was identified as an overnight stop, attractive for its scenery and fishing streams. Established in 1906 as "Camp Roosevelt," visitors stay at the secluded and rustic Roosevelt Lodge with its small dining room, primitive cabins, and modest store in a setting that is very much as it was historically.

**Roosevelt Corrals:** An historic function adjacent to Roosevelt Lodge, the corral operation provides traditional horseback trail rides and horse-drawn wagon rides to the western style cookout at Yancey's Hole.

**Tower Ranger Station:** The historic Tower Ranger Station currently serves as an NPS residence, continuing to provide a ranger presence near the Roosevelt Lodge. Visitors may obtain backcountry permits and fishing licenses at a small backcountry office nearby.

**Tower Administrative Services:** Supporting the visitor facilities and resource protection in this portion of the park, the Tower Administrative location provides year-round maintenance, resource and visitor protection, emergency services, and additional NPS employee housing.

**Tower Junction:** At the junction of the Northeast Entrance Road and the Grand Loop Road is a paved area where visitors have access to a self-service fuel station, vault toilet, telephones, trash/recycling bins, as well as parking for the Garnet Hill Trail and for winter recreation such as cross-country skiing or snow-shoeing.

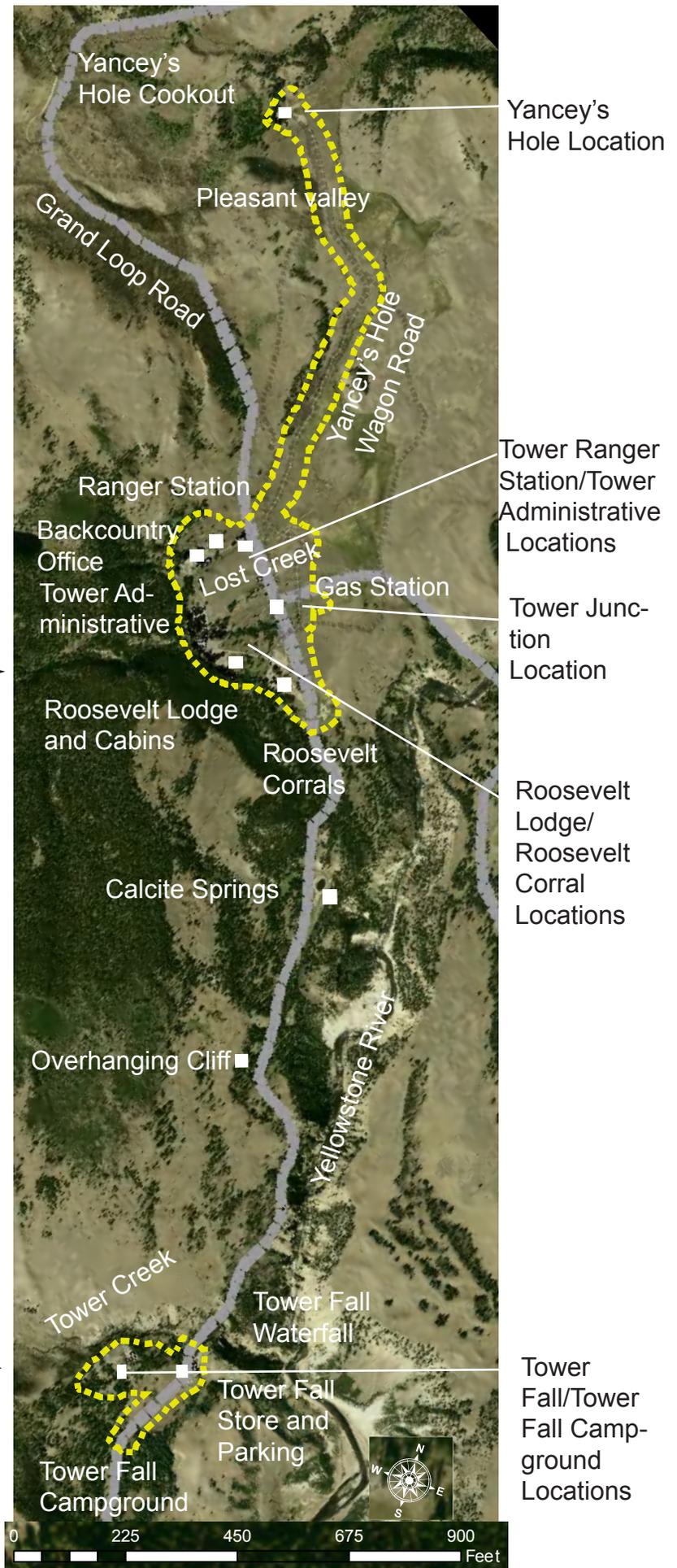
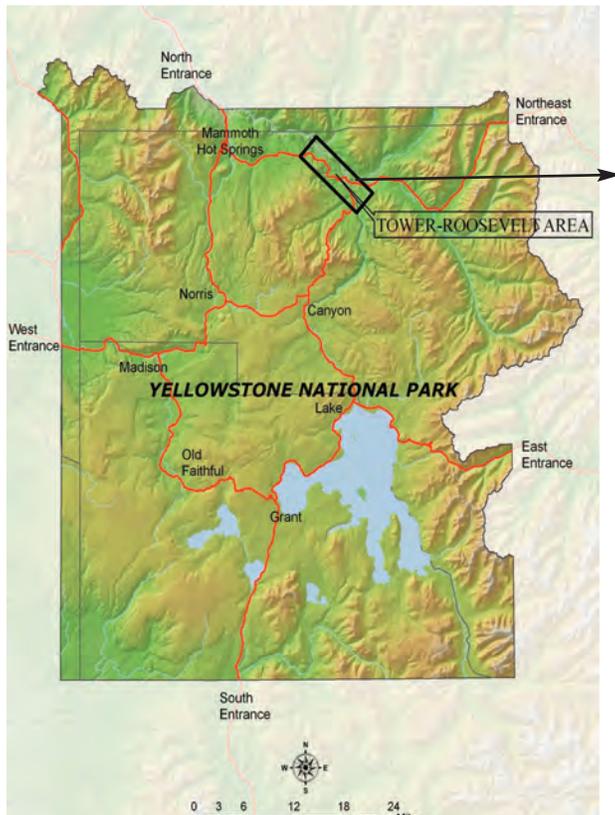
**Tower Fall Trailhead:** The short trail to Tower Fall overlook is a popular visitor attraction. At 132 feet, Tower Fall waterfall plunges toward the Yellowstone River. Both features can be seen from the Tower Fall Trail. At the trailhead there is parking for 68 cars and 5 oversized vehicles and the location includes a public restroom. Also at this trailhead parking area is a general store where visitors can enjoy lunch, ice cream and purchase retail items.

**Tower Fall Campground:** A 32-site campground across the Grand Loop Road from the trailhead provides camping during the summer season. An employee housing area is adjacent to the campground.

**Yancey's Hole:** The Yancey's Hole location is in the natural setting of Pleasant Valley where visitors arrive on horseback or in wagons for a western-style cookout every evening during the summer. It includes a dining shelter, picnic tables, vault toilets, and campfire circle. Wagons and horses are hitched near the cookout site, and food is served from a covered serving shelter.

## Figure 2: Tower-Roosevelt Area Features and Locations

Located in the northeast portion of Yellowstone National Park, the Tower-Roosevelt area is known for the features indicated in white text on the aerial to the right. Planning locations are identified in the Tower-Roosevelt Comprehensive Plan/EA. They are shown in the text boxes adjacent to the aerial.



The yellow dashed line indicates the extent of the Planning Boundary.

## PURPOSE AND NEED

The purpose of the TRCP/EA is to preserve natural, cultural, and visual resources and visitor experience in the Tower-Roosevelt area by using a comprehensive plan that would set desired future conditions for resources and visitor experience and guide changes in development and redevelopment. Tower-Roosevelt's secluded, rustic character, intimate scale, rich natural and cultural resources within the scenic and diverse habitat of the Northern Range, and existing range of visitor experiences and opportunities are to be preserved through comprehensive planning. The TRCP/EA is intended to guide decision-making through restrictions on how much, where, and what kind of development and redevelopment can occur in order to achieve desired conditions for resources and visitor experience without resulting in unacceptable impacts. Cumulative impacts are to be assessed on these for future development.

The Tower-Roosevelt area has, since its first development in 1884 at Yancey's Hole, undergone intermittent expansion and change. Today, the TRCP/EA is needed to address the following issues and concerns:

- **As facilities age and visitor use patterns change, there may be a need to alter, improve, or remove facilities and utilities.** Many facilities within the Tower-Roosevelt area were built between fifty and ninety years ago. Since then, visitation has increased and time has taken a toll on some facilities. Existing facilities such as restrooms, parking areas, and commercial services may require modification in order to meet visitor needs, mitigate health and safety concerns, and protect and preserve natural, cultural, and visual resources.
- **There is a lack of information regarding natural, cultural, and visual resources in the area.** Natural, cultural, and visual resources have not been surveyed and areas that are more sensitive or resilient to change have not been identified.
- **Desired resource conditions and desired visitor experiences need to be established in order to guide the future of the Tower-Roosevelt area.** Desired visitor use and desired natural, cultural, and visual resource conditions for the Tower-Roosevelt area have not been identified and established. They are needed to provide benchmarks for what the park wants to achieve in the area and provide sideboards for future changes and development. Desired conditions are derived from what is significant about the area and the fundamental resources and values supporting that significance. Future projects should strive to meet desired conditions.
- **There is a need to define what types of functions, uses, and facilities are necessary and appropriate to the Tower-Roosevelt area.** Identifying those functions that are appropriate and necessary to provide the desired experience and the range of visitor services and recreational and educational opportunities would inform project proponents of the park's goals for the Tower-Roosevelt area.
- **A methodology for determining parameters for cumulative actions and their cumulative impacts is necessary.** Although many individual proposed projects could be evaluated or carried out with site-by-site resource inventories and environmental compliance, cumulative impacts of many individual projects combined through time are difficult to anticipate. Collectively, these changes may incrementally and inadvertently alter the fundamental resources and values that make this area significant.
- **A consistent and timely process for evaluating and responding to project requests is necessary.** Individual evaluation of projects in 2004, using a case-by-case approach to project development and resource compliance, was found to be a time-consuming, repetitive, and

inefficient process. This is due in part to the lack of a comprehensive view of the area, dispersed information for natural and cultural resources, and lack of clear guidance for facility design. Additionally, the existing process for project review and approval is uncertain, can take extended lengths of time to complete, and is currently under revision.

## **Objectives**

The objectives of the Tower-Roosevelt Comprehensive Plan are to:

1. Ensure that the desired conditions for natural, cultural, and visual resources and visitor experience are defined and achieved.
2. Preserve, protect, and improve park natural, cultural, and visual resources and visitor experiences and achieve desired conditions by guiding the location, function/type, size, and appearance of visitor services, facilities, and utilities.
3. Provide resource information in a single document to better assess possible cumulative impacts for proposed and future projects.
4. Use sustainable designs, methods, building practices, and technologies to the extent possible.
5. Identify opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions; reinvesting resources to improve the condition of the park's most important assets.
6. Guide decisions to provide high quality visitor services; concentrating efforts on core services at core locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.
7. Develop a consistent and timely process to formally evaluate project proposals based on acceptable limits of change defined in the TRCP/EA.

## **RELATED LAWS, REGULATIONS, AND POLICIES**

The Yellowstone National Park Protection Act (1872) established the park and set forth its mission: "To set apart a certain tract of land lying near the headwaters of the Yellowstone River as a public park." The National Park Service Organic Act (1916) built upon that landmark law to form the National Park Service. Similarly, this TRCP/EA builds upon and is compatible with existing NPS management policies, which are guided by the public laws, treaties, proclamations, Executive orders, regulations, and Department of Interior directives. The major laws and policies with which this TRCP/EA must comply are described below.

### **NPS Guiding Laws, Regulations, and Policies**

#### **NPS Organic Act of 1916**

Units of the national park system shall be managed "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner

and by such means as will leave them unimpaired for the enjoyment of future generations” (16 USC 1).

#### **Redwood National Park Act of 1978, as Amended**

This act states that the NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.”

#### **National Parks Omnibus Management Act of 1998**

This act directs the NPS to use a broad program of the highest-quality science and information in managing and protecting units of the national park system.

#### **Code of Federal Regulations, Revised July 2000**

Title 36, Chapter 1, provides regulations “for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the National Park Service.”

#### **NPS Management Policies 2006**

The alternatives proposed by this TRCP/EA and the assessment of their impacts are in part guided by NPS Management Policies 2006, which state that “The National Park Service will preserve the natural resources, processes, systems, and values of units in the national park system in an unimpaired condition, to perpetuate their inherent integrity and to provide present and future generations with the opportunity to enjoy them,” and “The National Park Service will protect, preserve, and foster appreciation of the cultural resources in its custody and demonstrate its respect for the peoples traditionally associated with these resources through appropriate programs of research, planning, and stewardship.”

### **Other Applicable Federal Laws, Executive Orders, and Regulations**

#### **Historic Sites Act of 1935**

This act declares as national policy the preservation for public use of historic sites, buildings, objects, and properties of national significance. It authorizes the Secretary of the Interior and the NPS to restore, reconstruct, rehabilitate, preserve, and maintain historic or prehistoric sites, buildings, objects, and properties of national historical or archeological significance.

#### **National Historic Preservation Act of 1966, as Amended**

Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting the park’s cultural resources must comply with this legislation.

#### **National Environmental Policy Act of 1969, as Amended**

This act is implemented through regulations of the Council on Environmental Quality (40 CFR 1500–1508). The NPS has adopted procedures to comply with this act and the CEQ regulations, as found in Director’s Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-Making, and its accompanying handbook.

### **Endangered Species Act of 1973, as Amended**

This act requires all federal agencies to consult with the Secretary of the Interior on any project or proposal that could impact federally endangered or threatened plants and animals.

### **Section 404 of the Clean Water Act of 1977 (33 U.S.C. 403)**

The objective of this act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” NPS activities that involve the discharge of dredged or fill material into wetlands or other “waters of the United States” must comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act (regulations and permit process are described in 33 CFR 320-331).

### **NPS Director’s Order 77, 1991**

This director’s order (DO) provides guidance to park managers on the design, implementation, and evaluation of a comprehensive natural resource management program.

### **Director’s Order 77-1, Wetland Protection, and the accompanying Procedural Manual 77-1, Wetland Protection (Reissued February 2008)**

These documents establish NPS policies, requirements, and standards for implementing Executive Order 11990: Protection of Wetlands (421 CFR 26961I see below). Included in DO 77-1 is adoption of a “no net loss of wetlands” goal, which was first proclaimed in 1989 by President George W. Bush and has been sustained by subsequent administrations.

### **Director’s Order 77-2, Floodplain Management and the accompanying Procedural Manual 77-2, Floodplain Management**

These documents establish NPS procedures for implementing floodplain protection and management actions in units of the national park system as required by Executive Order 22988, Floodplain Management (see below).

### **Executive Order 11990, Protection of Wetlands**

This executive order (EO) directs the NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid the direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

### **Executive Order 11988, Floodplain Management**

This EO directs the NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid the direct or indirect support of floodplain development wherever there is a practicable alternative.

### **Executive Order 11593, Protection and Enhancement of the Cultural Environment**

This EO directs the NPS to support the preservation of cultural properties and to identify and nominate to the National Register cultural properties within the park and to “exercise caution . . . to assure that any NPS-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered.”

# THE PURPOSE OF YELLOWSTONE NATIONAL PARK

National park system units are established by Congress to fulfill specified purposes. A park's purpose is the fundamental building block for its decisions to conserve resources while providing for the "enjoyment of future generations." Statements of a park's significance describe why the park is important within a global, national, regional, and ecosystem-wide context and are directly linked to the purpose of the park.

Yellowstone's purpose and significance are rooted in the intent of its enabling legislation, subsequent legislation, and current knowledge of its natural, cultural, and visual resources. It is important to understand the significance of the Tower-Roosevelt area within the context of Yellowstone National Park's significance:

- It is the world's first national park.
- It preserves geologic wonders, including the world's most extraordinary collection of geysers and hot springs and the underlying volcanic activity that sustains them. Yellowstone is positioned on a "hot spot" where the earth's crust is unusually thin and molten magma rises relatively close to the surface.
- It preserves abundant and diverse wildlife in one of the largest remaining intact and wild ecosystems on earth, supporting spectacular biodiversity. Preserved as mostly wild and undeveloped, Yellowstone and the surrounding ecosystem serve as a benchmark for understanding nature.
- It preserves an 11,000 year old continuum of human history, including sites, structures and events that reflect our shared heritage. This history includes the birthplace of the national park idea—a milestone in conservation history.
- It provides for the benefit, enjoyment, education and inspiration of this and future generations. Visitors have a range of opportunities to experience the essence of Yellowstone's wonders and wildness in a way that honors the park's value to the human spirit and deepens the public's understanding and connection to it.

Congress established Yellowstone National Park to "dedicate and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people; ... 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" (Yellowstone National Park Protection Act, 1872).

## **RELATIONSHIP TO OTHER PLANS AND DOCUMENTS**

This TRCP/EA is consistent with other plans that have been completed to provide guidance for Yellowstone managers.

### **Yellowstone National Park Master Plan (1974)**

The Record of Decision strives to balance human impacts and preservation of park natural, cultural, and visual resources by developing objectives for General Management, Resource Management, Visitor Use, and Interpretation. It provides recommendations for resource protection and development of facilities, accommodations, and support services that occur in individual developed areas.

### **Statement for Management (1991)**

This statement for management described the existing conditions and management objectives for natural resources, adjacent lands coordination, visitor use, cultural resources, and park operations and planning.

### **YNP Community Housing Plan (1992)**

The 1992 Community Plan for Tower Junction (Environmental Assessment for Employee Housing) addressed NPS and concessioner housing, NPS maintenance facilities, recreational facilities, ranger facilities, corrals, fire cache, visitor lodging, circulation, and utilities.

### **Roosevelt Lodge Historic Structures Report (1993)**

In December 1993, James R. McDonald Architects prepared a historic structures report for Roosevelt Lodge and cabins. This report provides a history of development, an analysis and evaluation of contributing features, and a treatment plan.

### **YNP Long-Range Interpretive Plan (2000)**

This YNP Long-Range Interpretive Plan provides visitor experience goals, primary interpretive themes and follows with recommendations. For the Tower-Roosevelt area this document recommends a winter warming hut/contact station and more outdoor exhibits.

### **Canyon Junction to Tower Junction Road Improvement Environmental Assessment (2001)**

This project is one of many phases of road refurbishment identified in the Parkwide Road Improvement Plan (approved June 1993). It focuses on improvement of the entire Canyon Junction to Tower Junction road segment.

### **YNP Housing Management Plan (2005)**

The 2005 Housing Management Plan is a report assessing the housing needs in each development in the park. It is based on an independent review of the park's housing program. It updated the 1992 Community Housing Plan with numbers and types of housing needed.

### **YNP Strategic Plan (2005)**

This strategic plan reexamined the park's fundamental mission and took a fresh longer-range view, in concrete terms, of what results or outcomes are needed to more effectively and efficiently accomplish that mission.

## Cultural Landscape Inventories for Roosevelt Lodge Historic District and Tower Junction Ranger Station Historic District (2007)

Prepared for the Roosevelt Lodge and Tower Junction Ranger Station historic districts by Shapins Associates, these documents are the basis for a recent determination of eligibility of cultural landscape features and patterns to be included in these districts. Determination of eligibility includes the realigning of district boundaries to include these features. The nomination to the National Register of Historic Places is a separate process that has not yet occurred.

### Other Planning Documents

This TRCP/EA also references other planning documents and operating procedures for Yellowstone National Park including: Yellowstone Sign Standards (1992), Yellowstone Revegetation Guidelines (2002), and Yellowstone Lighting Guidelines (2004).

# TOWER-ROOSEVELT COMPREHENSIVE PLANNING

## The Comprehensive Planning Approach

Projects that address facility and utility needs in the Tower-Roosevelt area have the potential to impact natural, cultural, and visual resources. They can also affect visitor experience. For this reason, resources within the Tower-Roosevelt area were surveyed and mapped and desired conditions for resources and visitor experience were established. These desired conditions communicate what the park would like to achieve within the Tower-Roosevelt area. With the resource surveys, it also became possible to anticipate impacts and begin to define sideboards for change. These sideboards, or *acceptable limits of change*, define restrictions for where, how much, and what kind of development and redevelopment can occur within the existing developed area without resulting in unacceptable impacts to park natural, cultural, and visual resources and visitor experience.

The comprehensive planning approach process is described in the following sections. It is summarized in the process flow chart shown in Figure 3 below:



*Figure 3: Tower Roosevelt Comprehensive Planning Process Flow Chart*

Together with desired conditions for resources and visitor experience in the Tower-Roosevelt area, the acceptable limits of change can be used to (a) inform project proponents of what the park would like to

achieve in the Tower-Roosevelt area, (b) guide how future projects can be developed so that desired conditions are achieved, and (c) evaluate projects that fall within the acceptable limits of change. Any future projects selected from the list of possible projects that support desired conditions and are determined to be within the acceptable limits of change may be considered for the park approval process. Projects that do not meet desired conditions, are not on the list of possible projects, or are outside the acceptable limits of change would be rejected. In those exceptional cases where a rejected proposal may bring forth new information and demonstrate a compelling need for consideration, additional analysis that follows the National Environmental Policy Act would be required. All projects that have the potential to affect wetlands, waters of the U.S., rare plants, and/or cultural resources must go through additional steps to comply with applicable laws and policies, even if they within the scope of this plan.

## **Defining Area Significance and Fundamental Resources and Values**

As Yellowstone National Park begins planning for the future of the Tower-Roosevelt area, a shared understanding of what resources and values warrant primary consideration is helpful in achieving the park's purpose. On page 17, the purpose and significance of Yellowstone National Park are described. They explain the specific reason the park was established and express why the park's natural, cultural, and visual resources and values are important enough to warrant national park designation. The significance statement for the

Tower-Roosevelt area (see box above) tiers off of the park significance statements and describes both visitor experience and natural, cultural, and visual resources and values that are important to preserve in this part of the park.

Fundamental resources and values are important natural, cultural, and visual features, systems, processes, visitor experiences, stories, scenes, sounds, or other resources and values that warrant primary consideration during planning because they contribute to the significance of the Tower-Roosevelt area, the park significance, and are critical to achieving the park's purpose. These are described on page 10.

Visitors traveling through the Tower-Roosevelt area *experience the diverse habitat of the Northern Range with sweeping views of wildlife in open meadows against the backdrop of rugged mountains. Visitors can access streams and trails, see unique geologic features, and view a dramatic waterfall. This is a quiet part of the park where one can visit the secluded historic Roosevelt Lodge, a modest, rustic western-camp with its horse and wagon rides.*

### **Significance Statement for the Tower-Roosevelt Area**

## **Surveying and Mapping Area Natural, Cultural, and Visual Resources**

In 2005, natural, cultural, and visual resources in the Tower-Roosevelt area were surveyed and mapped. The maps can be found in Appendix B. They include wetlands, rare plants, wildlife patterns, historic districts and cultural resource sites. These various resources are described in detail in Chapter 3, Affected Environment.

This resource information is used in three ways for the Tower-Roosevelt Comprehensive Plan: (1) it contributes to the knowledge of fundamental resources and values in the area, which then contributes to establishing desired resource conditions, (2) it gives geographic boundaries for resources that may require special compliance pathways, and (3) it gives specific information to defining the acceptable limits of change in development and redevelopment in certain locations.

These maps provide valuable information for all park staff, empowering them to actively protect resources. All project proponents would be required to use these maps and describe how they affect these resources in their project proposals (see Project Evaluation Form in Appendix A/B). All projects that have the potential to affect wetlands, waters of the U.S., and/or cultural resources must go through additional steps to comply with applicable laws and policies, even if they fall within the scope of this plan. There are some cultural resource sites that are not shown in this plan due to the sensitive nature of this information. This information would be revealed through the project evaluation process.

It is important that these maps maintain accuracy. Because resources are dynamic and conditions change over time, resource inventories within the Tower-Roosevelt area should be updated every ten years, or as needed.

Resources that may require additional compliance are avoided where possible. However, when avoidance is not possible, impacts must be mitigated according to law and policy. All projects that have the potential to affect wetlands, waters of the U.S., and/or cultural resources must go through additional steps to comply with applicable laws and policy, even if they fall within the scope of this plan.

## **Establishing Desired Resource Conditions and Desired Visitor Experiences**

The desired conditions for Tower-Roosevelt are benchmarks for park natural, cultural, and visual resources and visitor experience that should be achieved while considering changes to the area, in order to preserve fundamental resources and values. The following four desired conditions are critical for planning within the Tower-Roosevelt area, and are common to the action alternatives presented in this plan:

Desired resource conditions and desired visitor experiences are benchmarks for natural, cultural, and visual resources and visitor experiences that should be achieved while considering changes to the built environment in order to preserve the area's significance and fundamental resources and values that are described in Chapter 1.

- 1. Natural resources that support the diverse habitat of the Northern Range and the geologic wonders at the northern end of the Grand Canyon of the Yellowstone are preserved and improved.**
  - The diverse wildlife habitat
  - The biodiversity sustained by native plant communities
  - Abundant wildlife
  - Geologic, hydrologic, and hydrothermal resources
- 2. Cultural resources and the features and patterns that contribute to their significance are preserved and improved.**

- The secluded, small scale, rustic Roosevelt Lodge and cabins, their clustering in distinct groups around a grassy meadow, and other contributing features within the Roosevelt Lodge Historic District
- The rustic Tower Ranger Station and its prominent setting over the Grand Loop Road and Pleasant Valley within the Tower Junction Ranger Station Historic District
- The contributing characteristics of the Tower-Roosevelt section of the Grand Loop Road Historic District
- Archeological resources

**3. The existing range of visitor services and recreational and educational opportunities to experience the wilderness character of the Northern Range and the geologic features of the northern end of the Grand Canyon of the Yellowstone are preserved.**

- The range of visitor opportunities including sightseeing, traditional horseback trail rides, wagon rides, western-style cookout, fishing, hiking, and cross-country skiing
- Wildlife viewing, including large mammals, in their natural setting
- Unique geologic and other natural features viewed from roads, overlooks and trails
- The wilderness-type setting of Yancey's Hole cookout site for visitors arriving by horse and wagon
- Services that support visitors in this area such as lodging, dining, retail services, and fuel service in modest, rustic, and historic accommodations
- The character, sights, and sounds of the natural and historic setting
- Education and interpretation of natural and cultural resources

**4. The predominately natural scenery of the area is preserved and improved.**

- Historic view sheds are preserved
- Views of structures and buildings are minimal
- The visual separation of developments by natural screening
- The blending of structures and buildings into the historic and natural setting so they are unobtrusive
- The screening of administrative areas from visitor views
- The historic view from the Roosevelt Lodge porch across the meadow to the distant mountains

## **Establishing Acceptable Limits of Change**

While identifying desired conditions for resources and visitor experience provide benchmarks for what the park would like to achieve in the Tower-Roosevelt area, acceptable limits of change define how project proponents can achieve desired conditions. *Acceptable limits of change* are guiding principles that define restrictions on what kind, where and how much development and redevelopment can occur in the Tower-Roosevelt area without resulting in unacceptable impacts to natural, cultural, and visual resources, and visitor experience. The three planning components of acceptable limits of change, when used together with the desired conditions for resources and visitor experience, provide a framework for decision-making that NPS staff, managers, and partners would use when developing and evaluating project proposals for this area. Acceptable limits of change are established through the use of three distinct components taken in combination—buildable planning zones, planning prescriptions, and design standards—that have been assessed already for environmental impacts (though the project approval process may required additional compliance for wetlands, waters of the U.S., and/or cultural resources). Figure 4 illustrates acceptable limits of change and the three planning components.

## Component 1: Buildable Planning Zones

Delineated on the maps, buildable planning zones show *where* change can take place without unacceptable impacts to natural, cultural, and visual resources. Five types of land-use classifications are defined within the developed areas as buildable planning zones. They provide guidance for balancing the level of resource preservation and protection with visitor experience that will be emphasized while considering changes to visitor services, facilities, and utilities. They are based on and are to be used in conjunction with mapped resource inventories (see Appendix B).

Buildable planning zones show only those portions of an area that are suitable for change. They show where change can occur by dividing the project area into five types of land-use classifications.

Buildable planning zones are the first cut at identifying acceptable limits of change through the delineation of areas that are more suitable for development. The locations, types, and sizes of buildable planning zones are different for each action alternative. Color-coded in Figures 6a through 13a, the five different buildable zones are: (1) Natural, (2) Historic, (3) Circulation, (4) Development, and (5) Administrative. Figure 4 describes these zones, showing how they are depicted on the maps for Alternatives B and C.

- **Buildable Natural** zones are adjacent to or surrounding developed areas or roads where emphasis is placed on preserving predominantly natural scenery and/or historic views. Underground utilities, trails, and boardwalks that do not obstruct views or scenery may be accommodated in this zone. This zone covers most of the area within the planning boundary. Since it is so pervasive, there would be restrictions on impacts allowed within this zone. The plan proposes that all projects within the Buildable Natural Zone remain at a resource impact threshold equal to or less than a “minor adverse impact,” as defined under each impact topic in Chapter 4. Resources that may require additional compliance would be avoided where possible. If avoidance is not possible, impacts must be mitigated according to law and policy. All projects that have the potential to affect wetlands, waters of the U.S., and/or cultural resources must go through additional steps to comply with applicable laws and policies.
- **Buildable Historic** zones are areas within existing historic districts where development changes can occur, provided they follow the Secretary of the Interior Standards for the Treatment of Historic Properties under Section 106 of the National Historic Preservation Act. It is important to note that not all of a historic district is zoned as “buildable.” In order to preserve those historic building and circulation patterns that contribute to the integrity of the district, some portions of a historic district are not zoned as Buildable Historic. These include important viewsheds, existing building cluster arrangements, and certain natural features such as meadows. Development and redevelopment of buildings, roads, parking areas, and trails can occur where zoned, in certain sections of the historic district in a way that maintains historic integrity. Emphasis is placed on guiding limited changes and improvements while preserving the historic integrity of buildings, structures, roads, parking areas, trails, and other landscape features and patterns.
- **Buildable Circulation** zones are roads within the Tower-Roosevelt area where changes to that road may occur. In some cases, these roads may be part of a historic district. Emphasis is placed on preserving historic character, or providing a park-like driving experience for the visitor.

Certain zones are more suited for future development and redevelopment than other zones because they mostly avoid sensitive natural or cultural resources and are not within historic districts. Most possible projects within the TRCP/EA would occur within the following zones:

- **Buildable Development** zones are areas where development mostly associated with visitor services can occur, such as buildings, roads, parking, and trails. Emphasis is placed on providing or improving facilities and utilities in a way that complements the natural setting.
- **Buildable Administrative** zones are areas that are typically not viewed or visited by the public, are functional, and are not intended as part of the visitor experience. Emphasis is placed on providing appropriate support facilities such as buildings, parking, storage, etc., while screening these areas from visitor views and access.

*Using Resource Maps in the TRCP/EA:* Maps showing the location of natural, cultural, and visual resources are shown in Appendix B. Descriptions of the resources contained in these maps are found in Chapter 3. These resource maps can be compared to the zoning maps found Alternatives B and C in Chapter 2. Impacts resulting from situations where certain zones overlap natural and cultural resources are discussed in Chapter 4. In some cases, buildable zones overlie resources that may require additional compliance. In these cases, impacts must be mitigated according to applicable law and policy. All projects that have the potential to affect wetlands, waters of the U.S., and/or cultural resources must go through additional steps to comply with applicable laws and policies.

## Component 2: Planning Prescriptions

Planning prescriptions further define the acceptable limits of change that may occur within a particular zone by identifying primary function (what kind) and development footprint (how much) changes that can take place to the built environment without unacceptable impacts to natural, cultural, and visual resources. They are shown in Figure 6b through 13b for each alternative at each of the eight locations within the Tower-Roosevelt area.

The built environment refers to human made physical structures, facilities, and utilities that make up a community.

Each location has its own set of planning prescriptions (by alternative) that are based on (a) existing functions, (b) available space for new development, and (c) desired conditions for visitor experience and resources. Planning prescriptions vary between the two action alternatives based on acceptable levels of change; the prescriptions allow for more change in Alternative B than in Alternative C.

**Primary Functions:** Different types of facilities have different potentials to impact natural, cultural, and visual resources and visitor experience. For example, maintenance functions may conflict with and compromise visitor experience if placed near visitor-use areas. Parking for employee housing may compete with visitor parking. Establishing functions also helps to achieve desired conditions for visitor experience. For example, confirmation of functions related to traditional visitor horse-use in the Roosevelt Corrals location supports the desired condition of preserving horseback trail rides, wagon rides, and the western-style cookout.

**Maximum Change in Development Footprint:** Sometimes known as the “built environment,” development footprint is the square footage of buildings (at ground level), roads and paved parking in the developed portions of the Tower-Roosevelt area. There would be no net gain in development footprint for unpaved parking, although redesign may occur. The *maximum change in development footprint* reflects how much net change to the square footage of buildings, roads, and paved parking may be made while still achieving desired conditions for resources and visitor experience. These changes can contribute towards net-gains or net-reductions to the built environment, depending on the alternative. Both action alternatives yield net-gains in development footprint.

It is important to note that if existing buildings, roads, and paved parking are removed, they can be replaced by similar-sized facilities at no net-gain in development footprint, as long as they fall within the other components for acceptable limits of change. For example, the parking in front of the Roosevelt Lodge can be redesigned to improve the views from the front porch without a net-gain in development footprint. Employee housing at the Tower Administrative location can replace similar-sized trailer housing at no net-gain in development footprint. This helps the park to reduce a development footprint that does not support objective #5 of this plan—reinvesting in the park’s most important assets (page 14). Changes that have the potential to affect historic properties would require compliance with Section 106 of the National Historic Preservation Act.

<b>Examples of Existing Single-Building Footprints</b>	
Roosevelt Lodge (front):	2,000 s.f.
Roosevelt Lodge Cabins:	250-350 S.f.
Roosevelt Lodge Bathhouses:	550-950 s.f.
Corral Hay Barn:	2,000 s.f.
Yancey’s Hole Dining Shelter:	1800 s.f.
Tower 4-plex residence:	3500 s.f.
Tower Ranger Station:	2400 s.f.
Gas Station:	1300 s,f, interior; 1786 s.f. pumps
Tower Fall General Store:	8,253 s.f.

For each action alternative, a development footprint is suggested within the five buildable zones as a net-gain or net-reduction in the current built environment. In general, Alternative B allows for greater changes in development footprint than Alternative C.

<b>Existing Total Development Footprint</b>			
	<b>Buildings</b>	<b>Paved Parking</b>	<b>Unpaved Parking</b>
<b>Roosevelt Lodge Location</b>	62,967 s.f.	31,392 s.f.	10,484 s.f.
<b>Roosevelt Corral Location</b>	6,671 s.f.		42,679 s.f.
<b>Tower Ranger Station Location</b>	3,878 s.f.	12,362 s.f.	
<b>Tower Administrative Location</b>	17,322 s.f.	88,339 s.f. (both)	
<b>Tower Junction Location</b>	3,391 s.f.	32,301 s.f.	
<b>Tower Fall Trailhead Location</b>	10,000 s.f. (approx)	43,401 s.f.	
<b>Tower Fall Campground Location</b>	8,044 s.f.	22,876 s.f.	
<b>Yancey’s Hole Location</b>	2,732 s.f.		

### ***Methodology for Determining Possible Projects and Development Footprint***

Possible projects and associated development footprints used in the planning components of acceptable limits of change for each action alternative propose options to achieve desired conditions for visitor experience in the Tower-Roosevelt Area. They provide a means to develop acceptable limits of change and measure their potential environmental impacts. They were determined by utilizing staff input and resource surveys in order to achieve the following guiding principles:

- a) Meet the purpose and objectives of the TRCP/EA (Chapter 1).
- b) Achieve desired conditions for natural, cultural and visual resources and visitor experience (Chapter 1).
- c) Prevent unacceptable impacts to resources through the utilization of recent resource surveys that are described in Chapter 3.
- d) When impacts are unavoidable, disclose these impacts and mitigation measures in Chapter 4.

**Staff Input:** During the comprehensive planning process, park staff and partners were asked to identify visitor use and operational needs that could help achieve solutions for meeting the desired conditions that address visitor experience at Tower-Roosevelt (Chapter 1). These needs were examined as “possible projects” to propose a range of development footprints. See Table 3 for a list of all possible projects. They are used in the TRCP/EA for purposes of analyzing how such projects may affect the built and natural environments and are proposed under this plan.

**Resource Surveys:** Under Design Guidelines, maximum single building footprints were established as a way to meet the desired conditions for preserving natural resources, cultural resources, and the natural scenery. Some resource surveys revealed resources that may require additional compliance that restricted the extent to which the development footprint could expand. Resource surveys, such as a viewshed analysis and historic district evaluations provided size restrictions that preserved contributing features and patterns.

The action alternatives present a range of possible projects and a range of development footprints within a buildable planning zone and are assessed in Chapter 4, Environmental Consequences.

### **Component 3: Design Standards**

*Design standards* have been developed as the third planning component to ensure the character of facilities is compatible and harmonious with specific locations within the Tower-Roosevelt area. These standards specify acceptable facility design, character, size, and appearance.

Some design standards in some locations are less flexible than others. For example, there is greater flexibility in facility design in *Buildable Administrative Zones* than in the *Buildable Historic Zones* because these areas would not be seen or accessed by the public. Design standards would not be the same for every *Buildable Historic Zone* because different historic districts reflect different historic significance, periods of history, and features. For example, the Roosevelt Lodge Historic District is significant for its role in the evolution of guest accommodations, as a western camp, between 1906–1948, while the Tower Junction Ranger Station Historic District is significant for its role in the development of park administrative facilities, as a soldier/ranger station, between 1907–1945. New facilities or changes within these districts would require different characteristics in order to be compatible and not have an adverse effect. Design standards are meant to capture these differences.

# Figure 4: Acceptable Limits of Change: Planning Components

Acceptable limits of change consist of three components: planning zones, planning prescriptions, and design standards. Taken together with desired conditions, acceptable limits of change guide future development at Tower-Roosevelt.

## 1 Buildable Planning Zones:

Zones show where changes in development can take place without unacceptable impacts. The Plan/EA uses five types of buildable land-use classifications to determine the type of resource protection and visitor experience to be applied to visitor services, facilities and utilities. The zones and their application are illustrated in this section. Refer to Chapter 1 for more detail.



**Buildable Natural Zones** are adjacent to, or surrounding developed areas or roads where underground utilities, boardwalks or trails may occur. Emphasis is placed on preserving predominantly natural scenery, cultural resources, and/or historic views.



**Buildable Circulation Zones** are paved roads that are part of the developed area where changes may occur. Emphasis is placed on historic character and providing a parklike driving experience for visitors.



**Buildable Historic Zones** are areas within or adjacent to existing historic districts where changes in development may occur. Emphasis is placed on guiding limited changes and improvements while preserving historic integrity.



**Buildable Development Zones** are areas where recent development has already occurred and future building can occur. Emphasis is placed on providing or improving facilities in a way that complements the existing setting.

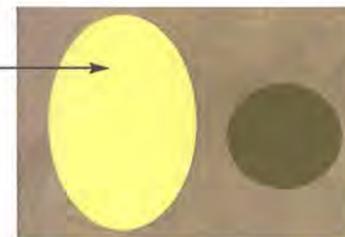


**Buildable Administrative Zones** are areas that are typically not viewed or accessed by visitors, are functional, and are not intended as part of the visitor experience. Emphasis is placed on support facilities for visitor use.

Buildable planning zones may be applied to locations differently in alternatives in the EA. In one alternative, the same buildable planning zone may be larger or of a different type than in another alternative.

Example:

The Buildable Administrative Planning Zone is larger than the Buildable Historic Planning Zone. The Buildable Natural Planning Zone surrounds both.



## 2 Planning Prescriptions:

Planning prescriptions identify the primary function (visitor services, housing, etc.) of development footprint (square footage of buildings, roads and pavement) that can take place within a particular planning zone.

Example:

Zone	Primary Function	Maximum Development Footprint
Buildable Administrative Zone	<ul style="list-style-type: none"> <li>NPS administrative and operational facilities related to visitor support.</li> </ul>	Not to exceed 7,000 s.f. net gain for buildings*
Buildable Historic Zone	<ul style="list-style-type: none"> <li>Concession visitor facilities related to lodging and dining.</li> </ul>	Not to exceed 1,200 s.f. net gain for buildings*

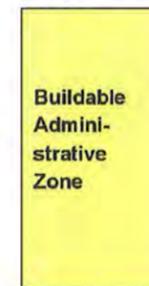
**\*NOTE:** This Plan/EA provides for reduction, replacement and new Development Footprint. Additionally, Design Guidelines provide guidance for the size of an individual building within a location in both Alternatives A and B.

Changes to historic properties require compliance with Section 106 of the National Historic Preservation Act (NHPA.) Impacts to floodplains, wetlands and other waters of the U.S. require compliance with the Clean Water Act and DO-77-1 and DO-77-2.

## 3 Design Standards:

Design standards are the specific design restrictions that would be applied to facilities and infrastructure constructed within the planning zones. The design standards are defined by both the type of planning zone and the location within the Tower-Roosevelt area. They are the same for both alternative B and C.

Example:



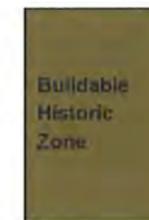
**Materials** Materials reflect sustainable design, blend with surrounding structures in overall appearance and avoid reflective finishes. Use sustainable design methods, materials and technology where possible.

**Color** Blends with natural environment and adjacent buildings. Use durable finishes such as dark brown stain.

**Scale, size** Buildings do not exceed 3,500 s.f., 2 stories (height and mass of existing 4-plex.)

**Roof design** Design, pitch and composition similar to adjacent buildings; appropriate for snow loads.

**Layout** Area visually and functionally separated from the visitor services areas. Signs, night lighting, and vegetation follow existing approved park guidelines.



**Setting** Buildings orient to each other within a cluster and away from creek.

**Materials** Wood-framed, board and batten building exteriors, log and native stone details.

**Color** Utilize historically appropriate colors.

**Scale, size** Buildings do not exceed 1,200 s.f., 1 1/2 stories (similar to size of historic structures in the complex.)

**Roof design** Design, pitch and composition similar to historic buildings.

**Layout** Reflects historic design and organizational pattern.

**Setting** Historic vegetation patterns retained.



Design standards address mitigation measures for impacts to natural and cultural resources. They specify materials, color, scale, size, roof designs, layouts and settings that preserve the modest, secluded, small-scale, rustic character and historic integrity of the Tower-Roosevelt area. They follow the Secretary of the Interior Standards for the Treatment of Historic Properties, and also achieve the desired conditions for visual resources and natural scenery. Unlike buildable planning zones and planning prescriptions, design standards do not differ between the action alternatives; they consistently address desired conditions for historic and scenic resources regardless of the proposed level of change.

They are the last of the three components for defining Acceptable Limits of Change to development and redevelopment. Design standards for each location can be found on Figures 6b through 13b.

## Evaluating Future Projects

Once the Tower-Roosevelt Comprehensive Plan is adopted, park staff, managers, and partners would be made aware of desired conditions for resources and visitor experience the park would like to achieve in this area. They would follow the guiding principles of acceptable limits of change to guide, design, evaluate, and meet the requirements of regulation and policies for resource protection as they develop their project proposals. Project proposals would be more likely to support desired conditions for resources and visitor experience of the Tower-Roosevelt area.

**Project Approval Process:** A draft Project Application Form would be used by park staff to evaluate project proposals (Appendix A). A project proponent would first consult the established desired conditions for resources and visitor experience as well as the three planning components. Subsequently, resource survey maps would need to be checked for all resources that may be affected by their project (Appendix B). Projects may be implemented with the approval of the superintendent if they fall within the scope of the acceptable limits of change and are contained on the list of possible projects proposed by this plan. If there are impacts that fall within the scope of the plan, applicable mitigation measures would be followed.

Projects that fall outside the scope of the buildable planning zones, planning prescriptions, or design standards, and/or are not on the list of possible projects are likely to exceed the environmental effects of the proposed alternatives, would be considered beyond the acceptable limits of change, and would be rejected. In exceptional cases, a rejected proposal may bring forth new information and demonstrate a compelling need for consideration. In such cases, additional analysis that follows the National Environmental Policy Act would be required.

## Continued Responsibility for Resource Protection Beyond the TRCP/EA

Responsibility for resource protection does not end once a project is selected. After a project is determined to be within the acceptable limits of change, good project design and continued environmental compliance would ensure the desired resource conditions of the Tower-Roosevelt area are achieved.

For example, in the Buildable Natural Zones, exact locations and development footprints for underground utilities were not shown because their designs are dependent on projects selected in the future. Since this zone is so pervasive (it covers most of the area within the planning boundary), there would be higher restrictions on impacts allowed for individual projects within this zone. The plan suggests that all projects within the Buildable Natural Zone remain at a resource impact threshold equal to or less than a "minor

adverse impact,” as defined under each impact topic in Chapter 4. These projects would be documented through the Yellowstone Environmental Compliance Process.

**Additional Environmental Compliance:** Yellowstone National Park is responsible for meeting applicable environmental compliance processes that are required by law and policy after a project is proposed and designed, even if it falls within the limits of acceptable change for the TRCP/EA. For example, Section 106 of the National Historic Preservation Act requires consultation regarding changes to cultural resources. Designs, materials, and placement of changes within historic districts require adherence with the Secretary of the Interior Standards for the Treatment of Historic Properties to ensure the integrity of the historic district is not diminished. All projects that have the potential to affect wetlands, waters of the U.S., and/or cultural resources must go through additional steps to comply with applicable laws and policies, even if they fall within the scope of this plan. Project proponents must follow the established Yellowstone Environmental Compliance Process which is included at the end of the project approval form.

Changes to wetlands still require compliance with Sections 404 and 401 of the Clean Water Act and Director’s Order 77-1, Wetland Protection. Changes to floodplains require compliance with Director’s Order 77-2, Floodplain Management. Changes to rare plants require compliance with the NPS Management Policies 2006.

Although the acceptable limits of change adhere to historic preservation principles and follow the Secretary of the Interior Standards for the Treatment of Historic Properties, this plan only partially fulfills the requirements of Section 106 of the National Historic Preservation Act. All projects that have the potential to affect cultural resources or are within or adjacent to cultural resources still require cultural resources compliance and consultation, as necessary

**Sustainability and Good Design:** Environmentally-friendly, universally accessible designs would achieve conservation stewardship and high-quality visitor services. Environmentally sustainable building practices and designs would mitigate resource impacts to Tower-Roosevelt area resources, as well as resources within a larger geographic context. For example, hard surfaces that restrict infiltration of precipitation can be mitigated through good design options such as minimizing paved surfaces.

Rather than continually adding to the development footprint accommodated within the TRCP, replacement of buildings, paved parking, and utilities is more sustainable. This allows for future opportunities to reduce buildings, roads, and utility systems and other facilities that do not support the desired conditions for resources and visitor experience of the Tower-Roosevelt area. It allows the reinvesting of park staff time and money into improving the condition of the park’s most important assets. It also allows the park to concentrate efforts on core services at core locations during peak visitation periods while maintaining essential services.

## APPROPRIATE USE

Section 1.5 of NPS Management Policies 2006, *Appropriate Use of the Parks*, directs that the NPS must ensure that allowed park uses would not cause impairment of, or unacceptable impacts on, park resources and values. Section 8.1.2, *Process for Determining Appropriate Uses*, provides evaluation factors for determining whether a use is appropriate. Any proposed park use must be evaluated for:

- consistency with applicable laws, executive orders, regulations, and policies;
- consistency with existing plans for public use and resource management;
- actual and potential effects on park resources and values;

- total costs to the NPS; and
- a determination of whether the public interest would be served.

Park managers must continually monitor all park uses to prevent unacceptable impacts. If an unacceptable impact occurs, the park manager must engage in a thoughtful, deliberate process to manage, constrain, or discontinue the use in a way that will prevent or minimize the impact. Use of an appropriate location, sizing, as well as construction materials and methods can help ensure that unacceptable impacts on park resources and values do not occur as a result of development.

Possible projects listed in Table 3 suggest options for achieving desired conditions for visitor experience in the Tower-Roosevelt area. They are intended to provide a means to develop acceptable limits of change and measure their environmental impacts. The possible projects have been evaluated as appropriate uses within the plan as they meet requirements for necessary and appropriate visitor services or support facilities for visitor services. In most cases, the uses reflect the improvement or replacement of aging facilities that already exist in the area. They include: a commercial services building (existing use in new location), a new visitor contact station, additional public restrooms/vault toilets, remodel of the existing service station, improvement/replacement of the existing backcountry office, additional guest cabins at the Roosevelt Lodge, replacement saddle/hay barns, new shade shelter, additional employee restroom/shower house, replacement employee housing, new emergency services building, existing dining shelter and serving shelter rehabilitation, existing general store remodel, and additional paved parking associated with these projects. New uses proposed for the Tower-Roosevelt area include the visitor contact station, the emergency services building, and shade shelter. Whether they are either existing or proposed uses, they are all common and vital facilities within most park units, and either directly or indirectly support the visitors who visit this portion of the park. They are consistent with applicable laws, executive orders, regulations, and policies. They are consistent with the 1974 Yellowstone National Park Master Plan, and address the proposals of the 2001 Canyon-Junction to Tower-Junction Road Improvement Environmental Assessment, which called for the removal of the Tower Fall General Store from its current location. They are also consistent with the YNP Long-Range Interpretive Plan (2000), the park's Core Operations Plan (2008) and current concessioner contracts. The planning components guide the location, size, appearance, and overall development footprint of these possible projects so that no unacceptable impacts will result. The impact analysis in chapter 4 shows that actual and potential impacts on park resources and values are no higher than a moderate adverse impact. These projects are consistent with the desired conditions for resources and visitor experience within the Tower-Roosevelt area. With this in mind, the NPS finds that these possible projects represent uses that are appropriate and acceptable within Yellowstone National Park.

## **PUBLIC SCOPING**

Scoping is a process used to determine the breadth of issues and alternatives to be addressed in an environmental assessment. For this TRCP/EA, Yellowstone staff conducted scoping with the public and interested and affected organizations and agencies, including meetings with the associated tribes of Yellowstone National Park. NPS staff members were also consulted as the plan/EA was developed. Scoping helped to refine the TRCP/EA's purpose and need, and determine likely issues, concerns, and resource impact topics (i.e., resources that could be impacted by the implementation of a given course of action or alternative).

Public scoping for the Tower-Roosevelt Comprehensive Plan/EA began on May 26, 2006, with a news release and mailing to interested parties asking for participation in identifying issues and concerns. Scoping

was also done through the NPS Planning, Environment, and Public Comment (PEPC) website. Scoping ended on June 30, 2006. Six comments were received through PEPC. One comment was received through the U.S. Postal Service from the Comanche Tribe requesting project progress updates.

Comments were in support of developing a comprehensive approach to projects in the Tower-Roosevelt area. Further, those who commented recommended keeping the western, rustic, small scale historic elements.

## **IMPACT TOPICS**

### **Topics Retained for Further Analysis**

Impacts topics for this plan were identified on the basis of: (1) federal laws, regulations, and orders; (2) NPS Management Policies 2006; (3) NPS staff knowledge of natural, cultural, and visual resources at Yellowstone National Park; and (4) comments received during public scoping. The impact topics that received further analysis in this EA and the rationale for consideration are listed below. For each of these topics, the existing setting or baseline conditions within the affected project area are described in Chapter 3, Affected Environment. This information was used to analyze impacts on the current conditions of the project area in Chapter 4, Environmental Consequences, which provides analysis for direct, indirect, and cumulative impacts for each of the three alternatives.

#### **Natural Resources**

Note: terminology is defined in Chapter 3, Affected Environment.

##### **Geological, Paleontological, and Soils Resources**

The NPS strives to preserve and protect geologic, paleontological and soils resources as integral components of the park's natural systems by (1) assessing the impacts of natural processes and human activities to these resources; (2) maintaining and restoring their integrity; (3) integrating resource management into NPS operations and planning; and (4) interpreting these resources for park visitors. As used here, the term "geologic resources" includes both geologic and hydrothermal features and processes (NPS Management Policies 2006).

Geologic, paleontological and soils resources have been retained as an impact topic because there could be long term or short term impacts. The Tower Fall location is a significant feature in the Tower-Roosevelt area with development on old lake sediments. These old lake sediments are impermeable and can be unstable. High concentrations of toxic gases have been measured at the base of Tower Fall. The Yancey's Hole location contains important paleontological resources. (Geologic Concerns at Roosevelt, Tower Fall and the Lamar River Bridge, Cheryl Jaworowski and Hank Heasler, 2006)

The NPS strives to understand and preserve the soil resource of park units and to prevent, to the greatest extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources (NPS Management Policies 2006).

Soils have been retained as an impact topic because development at in the Tower-Roosevelt area could require excavation of soils into the hillside with exposed cut slopes and placement of fills soils. The extent of excavation would depend on the alternative adopted and the design of possible projects in the Tower-Roosevelt area.

##### **Floodplains and Wetlands**

Executive Order 11988, Floodplain Management, requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. NPS Management Policies 2006 and Director's Order 77-2, Floodplain Management, require national parks to preserve floodplain values and minimize hazardous floodplain conditions. DO 77-2 also specifies that certain construction within the 100-year floodplain requires preparation of a Statement of Findings for floodplains.

Executive Order 11990, Protection of Wetlands, requires federal agencies to avoid, where possible, impacting wetlands. For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." Further, Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge or dredged or fill material or excavation within waters of the United States. NPS Management Policies 2006 and Director's Order 77-1, Wetlands Protection, require parks to prevent the loss or degradation of wetlands and to preserve and enhance their natural and beneficial values. DO 77-1 also requires proposed actions that could adversely impact wetlands to be addressed in a Statement of Findings for wetlands.

Floodplains and wetlands have been retained as an impact topic because although the action alternatives purposely guide projects to avoid these resources, there are concerns that development may still affect these resources. One area may be susceptible to precipitation events even although it is not in the 100-year floodplain. (Floodplain Analysis Results for the Tower Junction Developed Area, Michael Martin, 2006)

### **Vegetation and Rare Plants**

The NPS strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of plants; to restore native plant communities where necessary, and to minimize human impacts on native plants and the processes that sustain them (NPS Management Policies 2006).

Vegetation and rare plants have been retained as an impact topic because possible projects in each alternative in the Tower Roosevelt area could impact vegetation. Although rare plants would be avoided, vegetation restoration is addressed in the mitigation measures.

### **Wildlife**

The NPS strives to maintain components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of animals (NPS Management Policies 2006).

Wildlife has been retained as an impact topic because possible projects in each alternative, especially at Tower Junction, potentially result in disturbance from human activity, and changes in habitat and ungulate migration patterns.

### **Threatened and Endangered Species**

The Endangered Species Act (1973) requires federal agencies to conserve listed species and habitats critical to their survival. NPS policy requires examination of the impacts on candidates for federal listing, as well as species that are state-listed or candidates for state listing as threatened, endangered, rare, declining, or sensitive species.

Threatened and Endangered Species have been retained as an impact topic because the Canada lynx and gray wolf are listed species and implementation of the alternatives potentially result in disturbance effects from human activity and change in habitat in the Tower-Roosevelt area.

### **Natural Soundscapes**

According to NPS Management Policies 2006, "Park natural soundscapes encompass all the natural sounds that occur in parks, including the physical capacity for transmitting those natural sounds and the interrelationships among park natural sounds of different frequencies and volumes. The NPS will preserve, to the greatest extent possible, the natural soundscapes of parks." The NPS strives to restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds and to protect natural soundscapes from unacceptable impacts.

Soundscapes have been retained as an impact topic because human caused sounds would likely increase temporarily during construction. Long term human sounds could increase at the Tower Junction Location and decrease at the Tower Fall Trailhead Location depending on the alternative adopted.

## **Cultural Resources**

According to NPS Management Policies 2006, "The National Park Service will protect, preserve, and foster appreciation of the cultural resources in its custody and demonstrate its respect for the people traditionally associated with those resources through appropriate programs of research, planning, and stewardship."

Section 106 of the National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.), Director's Order 28, Cultural Resource Management Guideline, and National Park Service Management Policies 2006 require the consideration of impacts on historic properties that are listed on or eligible to be listed in the National Register of Historic Places (NHRP). The Register is the nation's inventory of historic places and the national repository of documentation for property types and their significance. The above-mentioned policies and regulations require federal agencies to coordinate consultation with State Historic Preservation Officers regarding the potential effects to properties listed on or eligible for the NHRP.

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

## **Archeological Resources**

In addition to the National Historic Preservation Act and NPS 2006 Management Policies, Director's Order 28B, Archeology, affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of the nonrenewable and irreplaceable archeological resources in national parks.

Archeological resources have been retained as an impact topic because of existing known archeological sites in and around the Tower-Roosevelt area, especially at the Yancey's Hole location. Depending upon the alternative adopted, there may be an impact to these resources.

## **Historic Resources**

National Historic Preservation Act, as amended in 1992, and Director's Order 28, Cultural Resource Management Guideline, require park managers to consider impacts on historic properties that are listed on or eligible to be listed in the National Register of Historic Places (NRHP) and to consult with State Historic Preservation Officers on these possible effects. The qualities that contribute to the eligibility for the NRHP are protected in accordance with the Secretary's Standards unless it is determined through a formal process that disturbance or natural deterioration is unavoidable.

Historic resources have been retained as an impact topic because the Tower-Roosevelt area includes three historic districts where possible projects could occur: the Grand Loop Road Historic District, Roosevelt Lodge

Historic District, and Tower Junction Ranger Station Historic District. Depending upon the action alternative adopted, historic resources may be affected.

### **Cultural Landscapes**

According to Director's Order 28, Cultural Resource Management Guideline, a cultural landscape is "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions."

Cultural landscapes have been retained as an impact topic because cultural landscapes inventories for the Roosevelt Lodge Historic District and the Tower Junction Ranger Station Historic District determined that contributing landscape features and patterns exist in these districts. Depending upon the action alternative adopted, cultural landscapes may be affected.

### **Human Health and Safety**

The NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks in a safe and healthful environment. Further, the NPS strives to protect human life and provide for injury-free visits. The NPS is also committed to providing a safe work and living environment for employees.

Human health and safety has been retained as an impact topic because of concerns associated with activities and services in the Tower Roosevelt area that include: the potential for traffic accidents; conflicts with vehicles, pedestrians, wagons and horses; visitor's exposure to the weather and to gases from thermal vents below the waterfall; and the risk of debris flows near some cabins at Roosevelt Lodge (Floodplain Analysis Results for the Tower Junction Developed Area, Michael Martin, 2006).

### **Visual Resources (including Lightscapes)**

Most of Yellowstone's landscapes appear in their natural state and retain their primeval characteristics. Less than two percent of the park is developed and facilities are predominantly grouped along the figure-eight road system, leaving substantial acreage in its natural condition. According to NPS Management Policies 2006, the NPS strives to protect scenic views and to "preserve, to the greatest extent possible, the natural lightscapes of parks, which are natural resources and values that exist in the absence of human-caused light."

Visual resources have been retained as an impact topic because facilities often stand out in stark contrast to the scenery and can affect visual resources in developed areas. A delicate balance must be maintained between protection of naturally dark nighttime skies and providing the level of light needed for human safety. The alternatives may affect the visual resources in the area.

### **Visitor Use and Experience**

The NPS Organic Act directs the NPS to provide for public enjoyment of the scenery, wildlife, and natural and historic resources of national parks "in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations." Under the NPS Management Policies 2006, the NPS is committed to maintaining an atmosphere in the parks that is inviting and accessible to every segment of society and to provide opportunities for visitor enjoyment that are uniquely suited and appropriate to the parks' superlative natural and cultural resources.

Visitor use and experiences have been retained as an impact topic because this TRCP/EA addresses possible projects in the Tower-Roosevelt area that could affect visitor use and experience. The action alternatives propose differing levels of visitor use and experience.

### **Park Operations**

According to NPS Management Policies 2006, "The National Park Service will provide visitor and administrative facilities that are necessary, appropriate, and consistent with the conservation of park resources and values. Facilities will be harmonious with park resources, compatible with natural processes, aesthetically pleasing, function, and energy and water efficient, cost-effective, universally designed, and as welcoming as possible to all segments of the population. NPS facilities and operation will demonstrate environmental leadership by incorporating sustainable practices to the maximum extent practicable in planning design, siting, construction, and maintenance."

Park operations have been retained as an impact topic because this TRCP/EA addresses possible projects in the Tower-Roosevelt area that could affect park operations. The action alternatives propose differing planning components for this use.

## **Topics Dismissed from Further Analysis**

### **Water Quality**

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

Water Quality has been dismissed as an impact topic because water quality in the Tower-Roosevelt area is excellent, like all streams and lakes in Yellowstone National Park, and is designated Class 1, outstanding resource water by Wyoming Department of Environmental Quality. The action alternatives do not propose any possible impacts above a "negligible adverse impact" to these resources. Surface water runoff changes would be mitigated. The issue of water quantities for potable water supplies is addressed in park operations.

### **Hydrothermal Resources**

Hydrothermal resources have been dismissed because there are no hydrothermal resources within the planning boundary. Geologic, paleontological and soils resources have been retained for further analysis.

### **Air Quality**

Under the 1963 Clean Air Act (42 USC 7401 et seq.), federal land managers are responsible for protecting air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts. Section 118 specifies that units of the national park system must meet all federal, state, and local air pollution standards. The Clean Air Act, as amended, directs parks to seek the best air quality possible in order to "preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas" and designated Yellowstone National Park a Class I air quality area.

Air quality was dismissed as an impact topic because there would be no long-term impacts on air quality or visibility under any of the alternatives proposed by this TRCP/EA. Any effects, such as dispersed dust and exhaust emissions caused by truck traffic and equipment activity, would be limited to the duration of construction. Contractor activities would comply with state and federal air quality regulations, and contractors would operate under applicable permits.

### **Ethnographic Resources**

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

Ethnographic resources were dismissed as an impact topic. Although ethnographic resources may be associated with the general Tower-Roosevelt area, insufficient information is available to locate physical features within areas affected by the alternatives.

#### **Prime and Unique Farmlands**

In August 1980, the Council on Environmental Quality directed federal agencies to assess the effect of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture's Natural Resources Conservation Service. Prime or unique farmland is defined as soil that produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. Prime and unique farmlands were dismissed as an impact topic because none of the soils in the Tower-Roosevelt area are classified as prime and unique farmlands.

#### **Environmental Justice**

Executive Order 12898, General Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low income populations and communities. Environmental justice was dismissed as an impact topic because none of the alternatives proposed by this plan would have adverse effects as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998).

# Chapter 2: ALTERNATIVES CONSIDERED

## OVERVIEW

This chapter of the Tower-Roosevelt Comprehensive Plan/EA (TRCP/EA) describes three alternatives for preserving and protecting Tower-Roosevelt's natural, cultural, and visual resources and visitor experience when guiding, designing, and evaluating future change. The kinds of changes that are addressed in the TRCP/EA include potential future actions such as alterations, additions, removal or replacements to visitor services, facilities (buildings, roads, and trails), and utilities.

*Future changes in development and redevelopment in the Tower-Roosevelt area arise when facilities and utilities age or become inadequate. They may include the addition, removal, replacement, or improvement of buildings, roads, parking areas, and utility systems.*

The following alternatives will be described in full detail in this chapter.

**Alternative A:** The *No Action* alternative would continue the current practice of evaluating projects individually, on a case-by-case basis with separate environmental compliance actions, rather than adopting a comprehensive plan. The alternative assumes an undetermined level of change to existing conditions.

**Alternatives B and C:** The action alternatives propose options for a Tower-Roosevelt Comprehensive Plan that would preserve and protect park natural, cultural, and visual resources, values, and visitor experience in the Tower-Roosevelt area by (a) adopting desired conditions for resources and visitor experiences, and (b) defining boundaries, limits, and guidelines of where and how development can occur in order to achieve those desired conditions and experiences. Alternative B proposes a *Medium Level of Change*, while Alternative C proposes a *Low Level of Change* for the Tower-Roosevelt area.



**Figure 3: Within the comprehensive planning process, action Alternatives B and C propose options for acceptable limits of change. Alternative B proposes a medium level of change and Alternative C proposes a low level of change to the Tower-Roosevelt area.**

## Descriptions and Comparisons of the Alternatives

Each alternative is explained in detail in this chapter. Alternatives B and C vary by the level of acceptable limits of change that is designated for each of the eight planning locations. For this reason, the components of acceptable limits of change, explained in Chapter 1, are described for each location for the action alternatives B and C. Figure 4 illustrates how these planning components are used and establishes a format that will be further developed in Figures 6a-b through 13a-b. Figure 5 shows maps comparing the three alternatives for the Tower-Roosevelt area.

The Tower-Roosevelt area has been divided into eight planning locations to provide comparisons between the three alternatives. The eight locations are: Roosevelt Lodge, Roosevelt Corrals, Tower Ranger Station, Tower Administrative, Tower Junction, Tower Fall Trailhead, Tower Fall Campground, and Yancey's Hole.

Maps 1 through 9 have been developed to give context for all eight locations; showing proposed buildable planning zones for each alternative at all eight locations on one map for reference. Maps 1 through 3 depict Alternative A (No Action), Maps 4 through 6 depict Alternative B, and Maps 7 through 9 depict Alternative C.

Figures 6a-b through 13a-b illustrate all three alternatives on one page for each of the planning locations. These figures compare each of the three components of acceptable limits of change by alternative; (1) buildable planning zones, (2) planning prescriptions, and (3) design standards.

To further compare the alternatives, the following tables have been developed:

Table 1 summarizes the anticipated environmental impacts for Alternatives A, B, and C. Only those impact topics that have been carried forward for further analysis are included in this table (Chapter 4, Environmental Consequences, provides a more detailed analysis of these impacts.).

Table 2 compares each alternative's success in meeting plan objectives that were presented in Chapter 1. Alternative A does not meet many of these objectives, while B and C meet all.

Table 3 compares the square footage of development footprint for each alternative. It also compares the possible projects that are accommodated within that footprint for each of the eight locations in the Tower-Roosevelt area. Development footprint is described in Chapter 1. Possible projects are described in Chapter 2.

## ALTERNATIVE A: NO ACTION

Under Alternative A, *No Action*, the NPS would not develop a comprehensive plan to guide changes to visitor services, facilities, and utilities in the Tower-Roosevelt area. There would be an undetermined level of change to existing conditions. Much of the Tower-Roosevelt area would remain the same, yet projects could be proposed in the future. Yellowstone National Park staff would evaluate project proposals for visitor use, facilities, and utilities in the Tower-Roosevelt area on a case-by case basis, with separate environmental compliance analyses.

*Planning zones, planning prescriptions (primary functions and development footprint), design guidelines, and possible projects are all defined and described in Chapter 1, Purpose and Need*

Since cultural and natural resources have been recently surveyed and mapped for this area, resource information would be available to guide environmental compliance analysis for these project proposals; potentially resulting in an improvement in efficiency and effectiveness. However, desired conditions for natural, cultural, and visual resources and visitor experience (a part of the comprehensive planning process) would not be adopted. The components of *acceptable limits of change* would not be utilized; boundaries, limits, and guidelines of where and how development can occur would not be available to comprehensively guide change.

Under this alternative, possible projects could be proposed in the future. They may include a variety of sizes and configurations. Each project proposal would be evaluated individually on its capacity to meet needs. Each project would use separate environmental compliance analysis. An evaluation of cumulative impacts of these individual actions, constructed incrementally over time (required by NEPA), would occur on a project-by-project basis. The TRCP/EA assumes that without adoption of a comprehensive plan on how, where, and what kind of development and redevelopment can occur within the Tower-Roosevelt area, impacts from projects are likely. Evaluating these projects with separate environmental compliance actions could lead to unanticipated cumulative impacts and fundamental resources and values may be incrementally altered.

For the purposes of the plan, the Tower-Roosevelt area has been divided into eight planning locations where facilities are clustered: Roosevelt Lodge, Roosevelt Corrals, Tower Ranger Station, Tower Administrative, Tower Junction, Tower Fall Trailhead, Tower Fall Campground, and Yancey's Hole locations. These locations are described in Chapter 1, Purpose and Need. Figures 6 through 13 compare all three alternatives by location using buildable planning zone maps, planning prescriptions tables and design standards. Maps 1 through 3 show this alternative in context of the Tower-Roosevelt area.

The following discussion describes the no action (no comprehensive plan) alternative for each of these locations.

### Roosevelt Lodge Location

The Roosevelt Lodge location would continue to provide rustic ranch-style lodging and dining. It is likely that additional visitor services, facilities, and/or utilities may be proposed within the existing historic district in the future. Possible projects such as additional employee restrooms, shower houses, and guest cabins and improvements to the existing parking lot may occur. Changes would be proposed as needed, on a

case-by-case basis with separate environmental compliance analyses. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 6a and 6b, which compares all alternatives for the Roosevelt Lodge location and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 6b.

## **Roosevelt Corrals Location**

The Roosevelt Corral location would continue to offer visitors opportunities associated with traditional horse use. Support facilities and utilities may be updated as necessary. Possible projects such as a saddle barn, hay barn, and visitor shade shelter may occur. Changes would be proposed as needed, on a case-by-case basis with separate environmental compliance analyses. Roosevelt Corral is not historic; however it is immediately adjacent to the Grand Loop Road Historic District and Roosevelt Lodge Historic District. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 7a and 7b for the Roosevelt Corrals location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 7b.

## **Tower Ranger Station Location**

This location is likely to remain as the NPS visitor contact location. Possible projects such as replacement of the backcountry office and additional parking may occur. This historic district is immediately adjacent to the Grand Loop Road Historic District. Changes would be proposed as needed, on a case-by-case basis with separate environmental compliance analyses. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 8a and 8b for the Roosevelt Corrals location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 8b.

## **Tower Administrative Location**

The Tower Administrative location would continue to be used as the base for administrative and maintenance activities. Half of this location is included in the Tower Junction Ranger Station Historic District. Possible projects such as a new emergency services building and replacement employee housing may occur. Decisions on proposals for housing improvements would be guided by the 1992 Employee Housing Plan and the 2005 Housing Management Plan. They showed a deficit of 3 year-round quarters and 9 seasonal quarters. Changes would be proposed as needed, on a case-by-case basis with separate environmental compliance analyses. Changes would be guided by recent natural and cultural

resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 9a and 9b for the Tower Administrative location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 9b.

## **Tower Junction Location**

This crossroads would continue to provide visitor facilities. Although this location is not in a historic district, it is immediately adjacent to the Grand Loop Road Historic District and very visible from many points within Pleasant Valley. Possible projects such as construction of a new commercial services building, restrooms, visitor contact station, and/or additional parking may occur. Changes would be proposed as needed, on a case-by-case basis with separate environmental compliance analyses. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 10a and 10b for the Tower Junction location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 10b.

## **Tower Fall Trailhead Location**

The Tower Fall Trailhead location would likely continue to provide trailhead parking, restrooms, and commercial services for visitors using the Tower Fall trail. This location is immediately adjacent to the Grand Loop Road Historic District. Under the Canyon Junction to Tower Junction Road Improvement EA (2001), the park proposed removal of the general store and parking area improvements. Currently, the Federal Highways project related to the road and associated parking has been postponed. Possible projects such as alternations to the Tower Fall General Store and the parking area and trailhead may occur. Changes would be proposed as needed, on a case-by-case basis with separate environmental compliance analyses. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 11a and 11b for the Tower Fall Trailhead location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 11b.

## **Tower Fall Campground Location**

This location would likely continue to provide a campground and a small employee housing area. Possible projects such as an additional vault toilet and replacement housing may occur. If changes are needed, they would be proposed and evaluated on a case-by-case basis with separate environmental

compliance analysis. Changes would be guided by recent natural and cultural resource assessments. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 12a and 12b for the Tower Fall Campground location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 12b.

## Yancey's Hole Location

The western style cookout would likely continue and facilities at the Yancey's Hole location that support this operation would remain. Possible projects such as replacement of the dining shelter, alterations to the serving shelter, and installation of a vault toilet may occur. If changes are needed, they would be proposed and evaluated on a case-by-case basis with separate environmental compliance analyses. Changes would be guided by the recent natural and cultural resource surveys. However, without the three components of acceptable limits of change, it is possible that facilities would be placed anywhere within this location, with any variety of functions, sizes and designs.

The no action alternative is illustrated on Figures 13a and 13b for the Yancey's Hole location, which compares all alternative, and also on the Maps 1 through 3, which shows the alternative in context of the Tower-Roosevelt Area. Under this alternative, there would be no comprehensive plan; no adoption of acceptable limits of change or planning components shown on page 13b.

## ALTERNATIVE B: MEDIUM LEVEL OF CHANGE

Using the planning process that is described in Chapter 1, Alternative B establishes an option for the Tower-Roosevelt Comprehensive Plan that would preserve and protect park natural, cultural, and visual resources and values and visitor experience by (a) consulting the recent natural and cultural resource surveys, (b) adopting the list of desired conditions for resources and visitor experience, (c) choosing a project from the list of possible projects for that location, and (d) setting a medium level for acceptable limits of change to existing development that supports these desired conditions.

Under Alternative B, a medium level of change to the Tower-Roosevelt area would be accommodated through the three components of acceptable limits of change; (1) buildable planning zones, (2) planning prescriptions, and (3) design standards. Compared to Alternative C, Alternative B accommodates more change to the existing development footprint; whether that change is a net gain

*Acceptable limits of change are guiding principles that define restrictions on what kind, where, and how much development and redevelopment can occur in the Tower-Roosevelt area without resulting in unacceptable impacts to natural, cultural, visual resources, or visitor experience. . They help achieve desired resource conditions and visitor experiences.*

*Definitions: Components of acceptable limits of change, such as planning zones, planning prescriptions (primary functions and development footprints), design guidelines, and the concept of possible projects are all defined and described in Chapter 1, Purpose and Need.*

or net-reduction. Overall, more and larger buildable planning zones would accommodate a larger development footprint and therefore more change in the Tower-Roosevelt area in Alternative B than Alternative C. This alternative provides the space for more possible projects to be accommodated in buildable planning zones. For the Tower Fall Trailhead location, the possible removal of a facility (which would constitute a greater change in development footprint than in Alternative C), is included in this alternative.

A larger acceptable net change in development footprint is accommodated in these larger buildable planning zones. Under this alternative, the existing overall net change in development footprint for buildings in the Tower-Roosevelt area (which is currently 115,000 square feet) could be increased by approximately 21,225 square feet; a 19% net gain. The overall development footprint for paved parking (which is currently approximately 142,332 square feet) could be increased by up to approximately 43,000 square feet; a 29% net gain. These overall ranges in development footprint are dispersed throughout the Tower-Roosevelt area in specified locations described below.

Alternative B provides more flexibility in design options for the placement, size, and character of possible future projects than does Alternative C. Under this alternative, a list of possible projects that produce a medium level of change is proposed for each location. The projects are accommodated within larger buildable planning zones and greater development footprints. Figures 6a-b through 13a-b compare all three alternatives, by location, using buildable planning zone maps, planning prescriptions tables, and design standards. Maps 4 through 6 show Alternative B within the greater context of the Tower-Roosevelt area. Possible projects in the Tower-Roosevelt area, represented in Alternative B, are shown in Table 3 (Comparison of Development Footprint and Possible Projects for Each Alternative). Planning components are defined and described in Chapter 1. The methodology used to calculate development footprints associated with possible projects is described in Chapter 1.

The three planning components ensure that desired conditions for resources and visitor experience are still achieved, even if there is as medium level of change in services, facilities, and utilities to meet future needs. The buildable planning zones, planning prescriptions, design standards and possible projects proposed in Alternative B allow a more comprehensive assessment of cumulative impacts over the long term at the Tower Roosevelt area than Alternative A, No Action. Impacts to these specific locations that are associated with the application of the three planning components and associated possible projects have all been assessed in Chapter 4, Environmental Consequences.

For the purposes of the plan, the Tower-Roosevelt area has been divided into eight separate locations where facilities are clustered: Roosevelt Lodge, Roosevelt Corrals, Tower Ranger Station, Tower Administrative, Tower Junction, Tower Fall Trailhead, Tower Fall Campground, and Yancey's Hole locations. These locations are described in Chapter 1, Purpose and Need under the subheading "Background." The following discussion describes Alternative B: Medium Level of Change, for each of these locations.

## **Roosevelt Lodge Location**

The Roosevelt Lodge would continue to provide rustic ranch-style lodging and dining.

**Buildable Planning Zones:** This location is zoned in three ways; Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 6a and Maps 4 through 6 illustrate the size and location of these

zones. Since this is a historic district, the Buildable Historic Zone would be designated for those portions of the Roosevelt Lodge Historic District where facility changes may occur while still preserving the historic character of the district. It is shown as larger than in Alternative C; allowing an expansion of development north of the northeastern cluster of cabins, and north of the western cabin cluster; beyond existing conditions. This zone shows appropriate locations for this expansion; following historic patterns of the organization and clustering of buildings. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails or underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery or historic viewsheds. The access roads into the Roosevelt Lodge are shown as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this contributing feature within the Roosevelt Lodge Historic District. The Buildable Natural and Buildable Circulation Zones are essentially the same for alternatives B and C, although possible projects may differ.

**Planning prescriptions:** Planning prescriptions for the Roosevelt Lodge location are illustrated in Figure 6b. The existing development footprint for buildings at the Roosevelt Lodge Location is 62,967 square feet. Within the Buildable Historic Zone at this location, the maximum net gain in development footprint for buildings is 7,200 square feet; an 11% net gain that can accommodate possible projects such as additional cabins, employee restrooms, and a shower house. The net gain in development footprint for parking is 10,000 square feet (a 32% net gain that accommodates approximately 20 additional autos and 5 additional RVs). There will be no net gain in unpaved parking at this location (currently at a development footprint of 10,484 square feet). This alternative allows a larger maximum change in development footprint than in Alternative C, since the buildable planning zone is larger. If buildings or paved parking-areas are removed (in accordance to Section 106 of the National Historic Preservation Act), they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, “concession visitor facilities and operations related to dining and lodging” would be assigned to achieve the desired condition of preserving this visitor service and historical function; same as in Alternative C. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either alternative. The primary function for this zone is “access road” in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, “trails and underground utilities” for both action alternatives, however, it is assumed that it would be greater in Alternative B than in C; accommodating more possible projects.

**Design standards,** illustrated in Figure 6b, are the same for Alternatives B and C. Within the Buildable Historic Zone, design standards are tailored to preserve buildings, features and patterns that contribute to the significance and character of this historic district. The lodge and surrounding cabin clusters are all oriented around a meadow. The lodge would remain the dominant focal point in both size and location. It has an existing development footprint of 2,000 square feet (front section). Additional buildings would follow existing historic building cluster arrangements. Any changes would be compatible with the appearance, size, and layout of contributing buildings within the district. The maximum size for any single building that may be introduced within this zone is 650 square feet; which is the average size of existing shower-houses within the cluster of smaller cabins in the district. Design standards for changes to parking areas are also included in this zone. These standards are based on the Historic Structures Report (1993) and the Cultural Landscape Inventory (2007). Chapter 3, Affected Environment contains additional descriptions of these contributing features and patterns. Under the Buildable Circulation Zone, materials, scale and design of the historic access road should be preserved. Under the Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural resource impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is within the Roosevelt Lodge Historic District. The Roosevelt Lodge Historic Structures Report (1993) and the Roosevelt Lodge Historic District Cultural Landscape Inventory (2007) outline contributing features and patterns. The secluded nature of this complex is dependent upon trees and a ridge that screen it from the road. The view from the lodge porch is eligible as a contributing feature within the district. Two cultural resource sites are shown within the historic district boundary. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the northwestern and southeastern corner of the district, are considered resources that may require additional compliance. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1 and DO 77-2 law and policy.

## **Roosevelt Corrals Location**

The Roosevelt Corral location would continue to offer visitor opportunities associated with traditional horse use.

**Buildable Planning Zones:** This location is zoned in three ways; Buildable Development, Buildable Natural, and Buildable Circulation Zones. Figures 7a and Maps 4 through 6 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes could take place without unacceptable impacts. Figure 7a illustrates that this zone is larger than in Alternative C; allowing an expansion of development beyond existing conditions to the northwest and southeast. A large portion of this location is also zoned as Buildable Natural, which accommodates trails or underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above ground obstructions to the natural scenery. Roads are zoned as Buildable Circulation, which designates certain planning prescriptions and design standards. The Buildable Natural and Buildable Circulation Zones are essentially the same for alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Roosevelt Corrals are shown in Figure 7b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is 6,671 square feet. The maximum net gain in development footprint for buildings under this alternative is 2,000 square feet (a 30% net gain) with no net-gain in development footprint for unpaved parking. This can accommodate possible projects such as replacement of the existing saddle barn and hay barn, construction of a new shade shelter, and improvement of the parking area. If buildings or parking-areas are removed, they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, “concession visitor facilities and operational facilities related to traditional horse use,” would be assigned to this zone to preserve the desired condition for this recreational opportunity. Within the Buildable Circulation Zone, no net gain in development footprint is proposed. “Access road” is assigned as the primary function. Within the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, “trails and underground utilities.” Planning prescriptions for the Buildable Natural and Buildable Circulation Zones are the same for both action alternatives.

**Design standards:** Design standards, illustrated in Figure 7b, are the same for alternatives B and C. Within the Buildable Development Zone, they are tailored toward maintaining the “western ranch” style and character of this location. Although buildings are rustic, they are plain and modest in size and character; similar to a western dude ranch. With the goal of keeping the Roosevelt Lodge as the dominant

building in the general area (building footprint is 2,000 square feet for front portion); corral buildings should remain similar to their existing size. Rather than using one large new building in this location, building size should be broken up into smaller, attached units. In order to preserve the historic vista, buildings within the Roosevelt Corral location should not be visible from the Roosevelt Lodge porch or be located immediately adjacent to the lodge access road. Since the Roosevelt Corral location is adjacent to the Grand Loop Road Historic District, buildings and structures should be screened from the road using vegetation. Within the Buildable Circulation and Buildable Natural Zones, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic District and Roosevelt Lodge Historic District. Therefore the Roosevelt Lodge Historic Structures Report (1993) and the Roosevelt Lodge Historic District Cultural Landscape Inventory (2007) outline contributing features and patterns that may be affected by development within the Roosevelt Corral location. This location is visible from many points within Pleasant Valley. A cultural resource site is shown the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the northeastern and southwestern corner of the location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2.

## **Tower Ranger Station Location**

The Tower Ranger Station location would continue to provide NPS visitor and administrative services in the historic Tower Junction Ranger Station.

**Buildable Planning zones:** This location is zoned in three ways; Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 8a and the Maps 4 through 6 illustrate the size and location of these zones. Since this is a historic district, the Buildable Historic Zone would be designated for those portions of the Tower Junction Ranger Station Historic District where facility changes may occur while still preserving the historic character of the district. It is shown as larger than in Alternative C; allowing for expansion of development to the west; beyond existing conditions. This zone shows appropriate locations for parking expansion that would accommodate RVs; preserving the front of the ranger station as open space. A large portion of this location is also zoned as Buildable Natural, which accommodates trails and underground utilities that do not exceed a minor adverse impact for natural and cultural resources, and limit any above-ground obstructions to the natural scenery or historic viewsheds. The access road into the Tower Ranger Station location is shown as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this contributing feature within the historic district. The Buildable Natural and Buildable Circulation Zones are essentially the same for alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Tower Ranger Station location are illustrated in Figure 8b. Within the Buildable Historic Zone at this location, the existing development footprint for buildings is 3,878 square feet. The maximum net gain in development footprint under this alternative is 1,200 square feet (a 31% net gain); which can accommodate possible projects such as expanding the backcountry office or converting the ranger station into a visitor contact station or other adaptive reuses. The net gain in development footprint for parking is 2,750 square feet (a net gain of 22% from the existing 12,362 square feet footprint), which can better accommodate RVs. There will be no net gain in unpaved

parking at this location. This alternative has a larger maximum change in development footprint than in Alternative C. If buildings, roads, or paved parking areas are removed (in accordance to Section 106 of the National Historic Preservation Act), they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, "NPS administration and visitor facilities" would be assigned to this location, which is the same in Alternative C. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either action alternative. The primary function is "access road" in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trials and underground utilities," for both Alternatives B and C.

**Design standards:** Design standards for the Tower Ranger Station location are illustrated in Figure 8b. They are the same for Alternatives B and C. Within the Buildable Historic Zone, design standards are tailored to preserve buildings, features and patterns that contribute to the significance and character of this historic district. The ranger residence (former ranger station) would remain the dominant focal point in both size and location; presiding over the road and Pleasant Valley. The maximum size for any one (new or additional) building is up to 1-1/2 stories high and 1,200 square feet; which maintains the ranger station (2400 square feet) as the dominant building amongst smaller buildings. Any changes and additional buildings would be compatible with the appearance, size, and layout of the district. Design standards for changes to parking are also included in this zone. They preserve the character of open space around the ranger station, and the character of the narrow access road (part of the Buildable Circulation Zone) into the complex. These standards are based on the Tower Junction Ranger Station Historic District Cultural Landscape Inventory (2007). Chapter 3, Affected Environment, contains additional descriptions of these contributing features and patterns. Within the Buildable Circulation Zone, design standards address materials, scale, and design that would preserve the historic access road. Under the Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural resources impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural survey maps (Appendix B) show that this location is within the Tower Junction Ranger Station historic district, and is adjacent to the Grand Loop Road Historic District. The Tower Junction Ranger Station Historic District Cultural Landscape Inventory (2007) outlines contributing features and patterns. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands and waters of the U.S. are found within this location. They are considered resources that may require additional compliance and are to be avoided. If avoidance is not possible, impacts would be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. This location is visible from many points within Pleasant Valley.

## **Tower Administrative Location**

The Tower Administrative location would continue to be used as the base for administrative and maintenance activities.

**Buildable Planning Zones:** This location is zoned in four ways; Buildable Administrative, Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 9a and the Maps 4 through 6 illustrate the size and location of these zones. Part of this location is within the Tower Junction Ranger Station Historic District. Therefore, the northern portion of this location is zoned Buildable Historic for those portions of the where facility changes may occur while still preserving the historic character of the district. This zone is the same in Alternative C. The Buildable Administrative Zone would be designated

for those portions of this location where resources that may require additional compliance and historic districts are not present. Figure 9a illustrates that this zone is larger than in Alternative C; allowing expansion of development beyond existing conditions to the south. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery. The access road is zoned as Buildable Circulation, which designates certain planning prescriptions and design standards. The Buildable Natural and Buildable Circulation Zones are essentially the same for Alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Tower Administrative location are shown in Figures 9b. Within the Buildable Administrative Zone at this location, the existing development footprint for buildings is 17,322 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 5,400 square feet; a 31% net gain that can accommodate possible projects such as a ranger resident (if the ranger station at the Tower Ranger Station location was converted from a residence to another use), replacement of trailer housing, and an emergency services building. There is no net change to development footprint for paved or unpaved parking within this zone. If buildings or paved parking areas are removed, they can be replaced by similar-sized facilities without a net gain in development footprint; allowing some additional flexibility. The primary function, "NPS administrative and operational facilities" is assigned to both the Administrative and Buildable Historic Zones at this location for both action alternatives. Within the Buildable Historic Zone, there is no net gain proposed for development footprint. Within the Buildable Circulation Zone, no net gain in development footprint and the primary function, "access road" is proposed. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities." Planning prescriptions for the Buildable Natural Zone and Buildable Circulation Zones are the same for both Alternatives B and C.

**Design standards:** Design standards are illustrated in Figure 9b, and are the same for alternatives B and C. Since part of this location is within the Tower Junction Ranger Station Historic District, design standards for both the Buildable Historic and the adjacent Buildable Administrative Zones are meant to preserve contributing features and patterns of the historic district. Those portions of this location that are within the Buildable Historic Planning Zone should remain historically compatible in materials, design, and scale. However, in the more flexible Buildable Administrative Zone, design standards allow for more flexibility in the materials, size, and scale of additional facilities. Here, buildings could be a maximum of two stories high; lower than the average surrounding tree canopy. The maximum building footprint would be up to 3,500 square feet, which is the size of the existing housing four-plex. Use of non-reflective materials would lessen visual impacts. Currently, part of this location can be seen from the Grand Loop Road historic district, and therefore screening this location from view of visitor use areas is important to achieving desired conditions for visual resources in the Tower-Roosevelt area.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is partially within the Tower Junction Ranger Station Historic District. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Rare plants, wetlands and waters of the U.S., shown in the south and eastern portions of this location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. Portions of this location are visible from the Roosevelt Lodge guest cabins and adjacent trails.

## Tower Junction Location

The Tower Junction location would continue to provide visitor facilities and administrative support for retail functions. Additional visitor services, facilities, and utilities can be accommodated within this location under this alternative.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development, Buildable Natural, and Buildable Circulation Zones. Figures 10a and the Maps 4 through 6 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes can take place without unacceptable impacts to resources. Figure 10a shows that this zone is larger than in Alternative C; allowing an expansion of development beyond existing conditions to the north and to the southeast. Since a hillside restricts expanding the Buildable Natural Zone to the south, additional space is gained by realigning the Grand Loop Road to the north. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utilities that do not exceed minor adverse impacts to natural and cultural resources, and do not create any above-ground obstructions to the natural scenery. This zone is essentially the same in Alternatives B and C. The Grand Loop Road Historic District is zoned as Buildable Circulation Zone, which designates certain planning prescriptions and design standards to preserve this historic district while making changes to it.

**Planning prescriptions:** Planning prescriptions for the Tower Junction location are shown in Figure 10b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is 3,391 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 9,000 square feet (a 2.5 times greater footprint). This would accommodate possible projects such as a commercial services building, a remodeled service station building, additional public restrooms, and a visitor contact station. The existing development footprint for parking is 32,301 square feet. The net change in development footprint for paved parking is a net gain of up to 35,400 additional square feet; a 100% net gain. This would accommodate up to 85 autos and 8 oversized vehicles (needed for a commercial building of this size). There will be no net gain in unpaved parking at this location. If buildings or paved parking areas are removed, they can be replaced by similar-sized facilities at no net gain in development footprint. This allows some additional flexibility in design solutions for this area. The primary function, "concession visitor facilities and NPS visitor facilities" would be assigned to this zone, which is the same for Alternative C. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either action alternative. The primary function is "access road" in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities," for both Alternatives B and C.

**Design standards:** Design standards, illustrated in Figure 10b, are the same for alternatives B and C. This location is visible from many directions within the Tower-Roosevelt area, due to the open terrain, and also visible from the Grand Loop Road Historic District. Therefore, the design standards are tailored toward preserving the scenery of the Tower-Roosevelt area and the historic district. Within the Buildable Development Zone, buildings and structures should be screened from the road using vegetation, a berm, and a 30-foot set-back. Rather than using one large new building in this location, building size should be reduced visually by using smaller, attached units at no larger than 2,000 square feet. The existing gas station (excluding the pump area) is 1300 square feet. Plantings would integrate the buildings into the landscape. Building height should remain no larger than 1-1/2 stories high (similar to the Ranger Station), which allows the buildings to be screened behind the most massive portions of trees that grow in this area; higher building would be visible behind the more thin tree-tops. Parking areas (and the reflective

surfaces of vehicles) should be hidden behind buildings to the extent possible, using the more visually-appealing architecture as a way to lessen impacts to the scenery. Within the Buildable Natural and Buildable Circulation Zones, design standards are meant to preserve the natural scenery and to lessen the visual, natural and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic. A cultural resource site is within the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Rare plants, shown in the northeastern and southwestern corner of the location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. Within the visual resources maps, this area is visible from many directions within the Tower-Roosevelt area.

## **Tower Fall Trailhead Location**

The Tower Fall Trailhead location would continue to provide visitor services and facilities.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development, Buildable Natural, and Buildable Circulation Zones. Figures 11a and the Maps 4 through 6 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes may occur without unacceptable impacts to resources. Figure 11a shows that this zone is smaller in Alternative B (toward the north) than in Alternative C; due to the reduction or possible removal of the general store. This constitutes a higher level of change than in Alternative C (which proposes a reduction but not a removal of the store). A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utilities that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above ground obstructions to the natural scenery. It is essentially the same for Alternative C. The Grand Loop Road and parking area is zoned as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this resource. It is shown as smaller in Alternative B; converting the space that is currently used for the store into parking and reducing existing parking at the southern portion of this location.

**Planning prescriptions:** Planning prescriptions for the Tower Fall Trailhead are shown in Figure 11b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is approximately 10,000 square feet. Under this alternative, there is a net reduction in buildings development footprint of between 5,000 and 10,000 square feet (net reduction of between 50-100%). This would be accomplished through the reduction or removal of the general store; a greater level of change than in Alternative C. The primary function "concession visitor facilities and NPS visitor facilities," would be assigned to this zone. The existing development footprint for paved parking is 43,401 square feet. The net change in development footprint for paved parking is a net reduction of up to 6,000 square feet; a 14% net reduction. This is due to the possible reduction/removal of the general store. There will be no net gain in unpaved parking at this location. The primary function, "visitor roads and parking" would be assigned to this zone. This would be the same for Alternative C. A large portion of this location is zoned as Buildable Natural Zone, where there is an undetermined development footprint for the primary functions, "trails and underground utilities," for both Alternatives B and C.

**Design standards:** Illustrated in Figure 11b, design standards are the same for both Alternative B and C at this location. Within the Buildable Development Zone, they are tailored toward preserving the natural setting and scenery and the adjacent Grand Loop Road Historic District. Facilities would be screened from the road using landforms and trees. Buildings would be blended into the landscape by using plantings and by breaking up one large building-mass into smaller, attached units. The existing general store has a footprint of 8,253 square feet. Within the Buildable Circulation Zone, design standards are meant to preserve the Grand Loop Road Historic District. Under the Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic District and to some cultural resource sites. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. This location is also visible from the road. There are some limiting factors related to soils in this location. The septic system cannot take any additional load in this location.

## **Tower Fall Campground Location**

The Tower Fall Campground location would continue to offer a 32-site campground for visitors.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development Zone, Buildable Natural Zone, and Buildable Circulation Zone. Figures 12a and the Maps 4 through 6 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes could take place without unacceptable impacts to resources. Figure 12a shows that this zone is larger in Alternative B than in C; allowing expansion of development beyond existing conditions within the employee dormitory area, and within the campground. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery. This zone is smaller in Alternative B than in C, since the Buildable Development Zone is so much larger in this alternative. The campground road is zoned as Buildable Circulation Zone, which is the same for Alternative C.

**Planning Prescriptions:** Planning prescriptions for the Tower Campground Location are shown in Figure 12b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is 8,044 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 1,300 square feet; a 16% net gain that can accommodate possible projects such as a vault toilet and replacement housing. There will be no net gain in paved or unpaved parking at this location. If buildings or paved parking areas are replaced with similar sized facilities, there would be no net gain in development footprint; allowing additional flexibility. The sewer-system capacity is a limiting factor within this location; no additional loads on sewer can be accommodated. The primary function, "visitor and operational facilities" is assigned to this zone. Within the Buildable Circulation Zone, no net gain in development footprint is proposed. The primary function of this zone is for visitor access. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities." Planning prescriptions for the Buildable Natural Zone and the Buildable Circulation Zones are the same for Alternatives B and C.

**Design Standards:** Design standards, illustrated in Figure 12b, are the same for alternatives B and C. Within the Buildable Development Zone, they are tailored toward preserving the natural scenery for visitors using this campground; blending facilities into the landscape. A single building should be no larger than 1,200 square feet and 1 story in height (existing dorm size). Under the Buildable Natural Zone and the Buildable Circulation Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that there are some cultural resource sites within this location. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. The employee housing area is visible from the public campground. The septic system cannot take any additional load in this location.

## **Yancey's Hole Location**

The western style cookout would continue and the facilities at the Yancey's Hole location that support this operation would remain.

**Buildable Planning Zones:** This location is zoned in two ways: Development and Buildable Natural Zones. Figures 13a and the Maps 4 through 6 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes may occur without unacceptable impacts to resources. This cookout site was previously constructed within a cultural resource site in the 1950s. Therefore the Buildable Development Zone is designated tightly around the existing development with a slight expansion to the north and east; greater than in Alternative C, which allows no expansion. The Buildable Natural Zone is shown where trails that do not exceed a minor adverse impact are accommodated (same for alternative C).

**Planning Prescriptions:** Figure 13b illustrates planning prescriptions for this location. Within the Buildable Development Zone, the existing development footprint for buildings is 2,732 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 125 square feet; a 4% net gain that can accommodate possible projects such as a small vault toilet and improving the picnic and serving shelters. There will be no net gain in unpaved parking at this location. The primary function is "concession western cookout facilities." Within the Buildable Natural Zone, no net gain in development footprint is accommodated. However, if facilities such as trails are removed, they can be replaced within this zone with no net gain in development footprint. Planning prescriptions for the Buildable Natural Zone is the same for Alternatives B and C.

**Design Standards:** Design standards, illustrated in Figures 13b and 14, are the same for alternatives B and C. They are intended to preserve the wilderness character for those who visit this location by horseback or wagon. Within the Buildable Development Zone, facilities should blend into the surrounding landscape. The scale, materials, and design of these facilities should remain small, modest, and rustic; with a single building footprint at no larger than 1,800 square feet, which is the size of the existing picnic shelter. Excavation should be avoided to minimize impacts to resources. Design standards within the Buildable Natural Zone are meant to preserve the narrow, winding character of the trails; preserving natural and cultural resources.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location contains a cultural resource site within the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require

additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the southern portion of the location, and the creeks flowing through the location are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. This site is very visible from adjacent trails and roads.

## ALTERNATIVE C: LOW LEVEL OF CHANGE

Using the planning process that is described in Chapter 1, Alternative C establishes an option for the Tower-Roosevelt Comprehensive Plan that would preserve and protect park natural, cultural, and visual resources and values and visitor experience by (a) consulting the recent natural and cultural resource surveys, (b) adopting the list of desired conditions for resources and visitor experience, (c) choosing a project from the list of possible projects for that location, and (d) setting a low level for acceptable limits of change to existing development that still supports these desired conditions.

Under Alternative C, a low level of acceptable limits of change to the Tower-Roosevelt area would be accommodated through the three components of acceptable limits of change; (1) buildable planning zones, (2) planning prescriptions, and (3) design standards. Compared to Alternative B, Alternative C accommodates less net change to the existing development footprint; whether that change is a net-gain or net-reduction. Overall, less and smaller buildable planning zones would accommodate a smaller development footprint and therefore less change in the Tower-Roosevelt area in Alternative C than in Alternative B. This alternative provides less space for future possible projects to be accommodated in buildable planning zones. However, in the Tower Fall Trailhead location, the possible reduction of a facility is considered less change than the possible removal of that facility (proposed under Alternative B); therefore the reduction (and not the removal) is included in this alternative.

In general, smaller buildable planning zones would accommodate less change in development footprint in the Tower-Roosevelt area than in Alternative B. Under this alternative, the existing overall net-gain in development footprint for buildings in the Tower-Roosevelt area (which is currently 115,000 square feet) is approximately 8,050 square feet for buildings; a 7% net gain, and approximately 31,000 square feet for parking (which is currently approximately 142,332 square feet); a 22% net gain. These overall ranges are dispersed throughout the Tower-Roosevelt area in the eight locations discussed below.

Since the buildable planning zones are only slightly larger than existing conditions and smaller than what is proposed in Alternative B, Alternative C provides less flexibility in design options for the placement, size, and character of possible future possible projects than does Alternative B. Under this alternative, a list of possible projects that illustrate a low level of change is proposed for each location. The projects are accommodated within buildable zones that are smaller than in Alternative B; with smaller development

*Acceptable limits of change are guiding principles that define restrictions on what kind, where, and how much development and redevelopment can occur in the Tower-Roosevelt area without resulting in unacceptable impacts to natural, cultural, visual resources, or visitor experience. . They help achieve desired resource conditions and visitor experiences.*

**Definitions:** *Components of acceptable limits of change, such as planning zones, planning prescriptions (development footprint and primary functions), design guidelines, and the concept of possible projects are all defined and described in Chapter 1, Purpose and Need.*

footprints. Figures 6 (a-b) through 13 (a-b) compare all three alternatives, by location, using buildable planning zone maps, planning prescriptions tables and design standards. The Maps 7 through 9 show Alternative C within the greater context of the Tower-Roosevelt area. Possible projects in the Tower-Roosevelt area, represented in Alternative C, are shown in Figures 6(a-b) through 13(a-b) and in Table 3 (Comparison of Development Footprint and Possible Projects for Each Alternative). The methodology used to calculate development footprints associated with possible projects is described in Chapter 1. The three planning components ensure that desired conditions for resources and visitor experience are achieved, with a low level of change in visitor services, facilities, and utilities to meet future needs. The buildable planning zones, planning prescriptions, design standards, and possible projects proposed in Alternative C allow a more comprehensive assessment of cumulative impacts over the long term at the Tower Roosevelt area than in Alternative A, No Action. Impacts associated with the application of planning components and possible projects to locations within the Tower-Roosevelt area have been assessed in Chapter 4, Environmental Consequences.

For the purposes of the plan, the Tower-Roosevelt area has been divided into eight separate locations where facilities are clustered: Roosevelt Lodge, Roosevelt Corrals, Tower Ranger Station, Tower Administrative, Tower Junction, Tower Fall Trailhead, Tower Fall Campground, and Yancey's Hole locations. These locations are described in Chapter 1, Purpose and Need.

The following discussion describes Alternative C: Low Level of Change, for each of these locations. Figures 6 (a-b) through 13 (a-b) and the Maps 7 through 9 depict Alternative C on a map for each location; comparing it with alternatives A and B. These comparisons are organized by the three components of acceptable limits of change.

## **Roosevelt Lodge Location**

The Roosevelt Lodge would continue to provide rustic ranch-style lodging and dining.

**Buildable Planning Zones:** This location is zoned in three ways; Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 6a and the Maps 7 through 9 illustrate the size and location of these zones. Since this is a historic district, the Buildable Historic Zone would be designated for those portions of the Roosevelt Lodge Historic District where facility changes may occur while still preserving the historic character of the district. It is shown as smaller than in Alternative B; similar to existing conditions. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails or underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery or historic viewsheds. The access roads into the Roosevelt Lodge are shown as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this contributing feature within the Roosevelt Lodge Historic District. The Buildable Natural and Buildable Circulation Zones are essentially the same for alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Roosevelt Lodge location are illustrated in Figure 6b. The existing development footprint for buildings at the Roosevelt Lodge Location is 62,967 square feet. Within the Buildable Historic Zone at this location, the maximum net gain in development footprint is 650 square feet; 1 1% net gain that can accommodate fewer possible projects than Alternative B such as employee restrooms, and a shower house. There is no net gain in development footprint for paved or unpaved parking. This alternative allows a smaller maximum change in development footprint

than in Alternative C, since the buildable planning zone is similar to existing conditions. If buildings or paved parking-areas are removed (in accordance to Section 106 of the National Historic Preservation Act), they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, “concession visitor facilities and operations related to dining and lodging” would be assigned to achieve the desired condition of preserving this visitor service and historical function; same as in Alternative B. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either alternative. The primary function for this zone is “access road” in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, “trails and underground utilities” for both action alternatives.

Design standards, illustrated in Figure 6b, are the same for Alternatives B and C. Within the Buildable Historic Zone, design standards are tailored to preserve buildings, features and patterns that contribute to the significance and character of this historic district. The lodge and surrounding cabin clusters are all oriented around a meadow. The lodge would remain the dominant focal point in both size and location. It has an existing development footprint of 2,000 square feet (front section). Additional buildings would follow existing historic building cluster arrangements. Any changes would be compatible with the appearance, size, and layout of contributing buildings within the district. The maximum size for any single building that may be introduced within this zone is 650 square feet; which is the average size of existing shower-houses within the cluster of smaller cabins in the district. Design standards for changes to parking areas are also included in this zone. These standards are based on the Historic Structures Report (1993) and the Cultural Landscape Inventory (2007). Chapter 3, Affected Environment contains additional descriptions of these contributing features and patterns. Under the Buildable Circulation Zone, materials, scale and design of the historic access road should be preserved. Under the Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural resource impacts due to the installation of underground utilities.

Surveyed Resources and Additional Compliance: Natural and cultural resource survey maps (Appendix B) show that this location is within the Roosevelt Lodge Historic District. The Roosevelt Lodge Historic Structures Report (1993) and the Roosevelt Lodge Historic District Cultural Landscape Inventory (2007) outline contributing features and patterns. The secluded nature of this complex is dependent upon trees and a ridge that screen it from the road. The view from the lodge porch is eligible as a contributing feature within the district. Two cultural resource sites are shown within the historic district boundary. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the northwestern and southeastern corner of the district, are considered resources that may require additional compliance. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1 and DO 77-2 law and policy.

## **Roosevelt Corrals Location**

The Roosevelt Corral location would continue to offer visitor opportunities associated with traditional horse use.

Buildable Planning Zones: This location is zoned in three ways; Buildable Development, Buildable Natural, and Buildable Circulation Zones. Figures 7a and the Maps 7 through 9 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes could take place without unacceptable impacts to resources. Figure 7a illustrates that this zone is smaller than in Alternative B; allowing a smaller expansion of development

beyond existing conditions to the southeast. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails or underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above ground obstructions to the natural scenery. Roads are zoned as Circulation, which designated certain planning prescriptions and design standards. The Natural and Circulations Zones are essentially the same for Alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Roosevelt Corrals are shown in Figure 7b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is 6,671 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 1,200 square feet (an 18% net gain) and no-net gain in development footprint for paved or unpaved parking; which can accommodate possible projects such as replacement of the existing saddle barn, construction of a new shade shelter, and improvement of the parking area. If buildings or parking-areas are removed, they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, “concession visitor facilities and operational facilities related to traditional horse use,” would be assigned to this zone to preserve the desired condition for this recreational opportunity. Within the Buildable Circulation Zone, no net gain in development footprint is proposed. “Access road” is assigned as the primary function. Within the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, “trails and underground utilities.” Planning prescriptions for the Buildable Natural and Buildable Circulation Zones are the same for both action alternatives.

**Design standards:** Design standards, illustrated in Figure 7b, are the same for alternatives B and C. Within the Buildable Development Zone, they are tailored toward maintaining the “western ranch” style and character of this location. Although buildings are rustic, they are plain and modest in size and character; similar to a western dude ranch. With the goal of keeping the Roosevelt Lodge as the dominant building in the general area (building footprint is 2,000 square feet for front portion); corral buildings should remain similar to their existing size. Rather than using one large new building in this location, building mass should be broken up into smaller, attached units to subordinate it into the landscape. In order to preserve the historic vista, buildings within the Roosevelt Corral location should not be visible from the Roosevelt Lodge porch or be located immediately adjacent to the lodge access road. Since the Roosevelt Corral location is adjacent to the Grand Loop Road Historic District, buildings and structures should be screened from the road using a vegetated setback. Within the Circulation and Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic District and Roosevelt Lodge Historic District. Therefore the Roosevelt Lodge Historic Structures Report (1993) and the Roosevelt Lodge Historic District Cultural Landscape Inventory (2007) outline contributing features and patterns that may be affected by development within the Roosevelt Corral location. This location is visible from many points within Pleasant Valley. A cultural resource site is shown the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the northeastern and southwestern corner of the location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2.

## Tower Ranger Station Location

The Tower Ranger Station location would continue to provide NPS visitor and administrative services in the historic Tower Junction Ranger Station.

**Buildable Planning Zones:** This location is zoned in three ways; Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 8a and the Maps 7 through 9 illustrate the size and location of these zones. Since this is a historic district, the Buildable Historic Zone would be designated for those portions of the Tower Junction Ranger Station Historic District where facility changes may occur while still preserving the historic character of the district. It is shown as smaller than in Alternative B and similar to existing conditions. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utilities that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery or historic viewsheds. The access road into the Tower Ranger Station location is shown as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this contributing feature within the historic district. The Buildable Natural and Buildable Circulation zones are essentially the same for alternatives B and C.

**Planning prescriptions:** Planning prescriptions for the Tower Ranger Station location are illustrated in Figure 8b. Within the Buildable Historic Zone at this location, the existing development footprint for buildings is 3,878 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 500 square feet; a 13% net gain. There are no possible projects examined for this area under this alternative. There is no net gain in development footprint for paved or unpaved parking. This alternative has a smaller maximum change in development footprint than in Alternative B. If buildings, roads, or paved parking areas are removed (in accordance to Section 106 of the National Historic Preservation Act), they can be replaced by a similar sized facility without a net gain in development footprint; allowing some additional flexibility. The primary function, "NPS administration and visitor facilities" would be assigned to this location, which is the same in Alternative B. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either action alternative. The primary function is "access road" in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities," for both Alternatives B and C.

**Design standards:** Design standards for the Tower Ranger Station location are illustrated in Figure 8b. They are the same for Alternatives B and C. Within the Buildable Historic Zone, design standards are tailored to preserve buildings, features and patterns that contribute to the significance and character of this historic district. The ranger residence (former ranger station) would remain the dominant focal point in both size and location; presiding over the road and Pleasant Valley. The maximum size for any one (new or additional) building is up to 1-1/2 stories high and 1,200 square feet; which maintains the ranger station (2400 square feet) as the dominant building amongst smaller buildings. Any changes and additional buildings would be compatible with the appearance, size, and layout of the district. Design standards for changes to parking are also included in this zone. They preserve the character of open space around the ranger station, and the character of the narrow access road (part of the Buildable Circulation Zone) into the complex. These standards are based on the Tower Junction Ranger Station Historic District Cultural Landscape Inventory (2007). Chapter 3, Affected Environment contains additional descriptions of these contributing features and patterns. Within the Buildable Circulation Zone, design standards address materials, scale, and design that would preserve the historic access road. Under the Buildable Natural

Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural resources impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural survey maps (Appendix B) show that this location is within the Tower Junction Ranger Station historic district, and is adjacent to the Grand Loop Road Historic District. The Tower Junction Ranger Station Historic District Cultural Landscape Inventory (2007) outlines contributing features and patterns. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands and waters of the U.S. are found within this location. They are considered resources that may require additional compliance and are to be avoided. If avoidance is not possible, impacts would be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. This location is visible from many points within Pleasant Valley.

## **Tower Administrative Location**

The Tower Administrative location would continue to be used as the base for administrative and maintenance activities.

**Buildable Planning Zones:** This location is zoned in four ways; Buildable Administrative, Buildable Historic, Buildable Natural, and Buildable Circulation Zones. Figures 9a and the Maps 7 through 9 illustrate the size and location of these zones. Part of this location is within the Tower Junction Ranger Station Historic District. Therefore, the northern portion of this location is zoned Historic for those portions of the where facility changes may occur while still preserving the historic character of the district. This zone is the same in Alternative B. The Buildable Administrative Zone would be designated for those portions of this location where resources that may require additional compliance and historic districts are not present. Figure 9a illustrates that this zone is smaller than in Alternative B and similar to existing conditions. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery. The access road is zoned as Circulation, which designates certain planning prescriptions and design standards. The Buildable Natural and Buildable Circulation zones are essentially the same for Alternatives B and C.

**Planning Prescriptions:** Planning prescriptions for the Tower Administrative location are shown in Figure 9b. Within the Buildable Administrative Zone at this location, the existing development footprint for buildings is 17,322 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 3,500 square feet; a 20% net gain that can accommodate possible projects such as replacement of trailer housing and an emergency services building. There is no net gain to development footprint for paved or unpaved parking within this zone. If buildings or paved parking areas are removed, they can be replaced by similar-sized facilities without a net gain in development footprint; allowing some additional flexibility. The primary function, "NPS administrative and operational facilities" is assigned to both the Administrative and Buildable Historic Zones at this location for both action alternatives. Within the Buildable Historic Zone, there is no net gain proposed for development footprint. Within the Buildable Circulation Zone, no net gain in development footprint and the primary function, "access road" is proposed. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities." Planning prescriptions for the Buildable Natural Zone and Buildable Circulation Zones are the same for both Alternatives B and C.

**Design standards:** Design standards are illustrated in Figure 9b, and are the same for alternatives B and C. Since part of this location is within the Tower Junction Ranger Station Historic District, design standards for both the Historic and the adjacent Buildable Administrative Zones are meant to preserve contributing features and patterns of the historic district. Those portions of this location that are within the Buildable Historic Zone should remain historically compatible in materials, design, and scale. However, in the more flexible Buildable Administrative Zone, design standards allow for more flexibility in the materials, size, and scale of additional facilities. Here, buildings could be a maximum of two stories high; lower than the average surrounding tree canopy. The maximum building footprint would be up to 3,500 square feet, which is the size of the existing housing four-plex. Currently, part of this location can be seen from the Grand Loop Road historic district, and therefore screening this location from view of visitor use areas is important to achieving desired conditions for visual resources in the Tower-Roosevelt area.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is partially within the Tower Junction Ranger Station Historic District. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Rare plants, wetlands and waters of the U.S., shown in the south and eastern portions of this location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. Portions of this location are visible from the Roosevelt Lodge guest cabins and adjacent trails.

## **Tower Junction Location**

The Tower Junction location would continue to provide visitor facilities and administrative support for retail functions. Additional visitor services, facilities, and utilities can be accommodated within this location under this alternative.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development, Buildable Natural, and Buildable Circulation zones. Figures 10a and the Maps 7 through 9 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes can take place without unacceptable impacts to resources. Figure 10a shows that this zone is smaller than in Alternative B; allowing an expansion of development to the southwest; just slightly beyond existing conditions. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utilities that do not exceed minor adverse impacts to natural and cultural, resources, and do not create any above-ground obstructions to the natural scenery. This zone is essentially the same in Alternatives B and C. The Grand Loop Road Historic District is zoned as Buildable Circulation Zone, which designates certain planning prescriptions and design standards to preserve this historic district.

**Planning prescriptions:** Planning prescriptions for the Tower Junction location are shown in Figure 10b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is 3,391 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 2,000 square feet; a 59% net gain. This would accommodate possible projects such as a commercial services building, a remodeled service station building, additional public restrooms, and a visitor contact station. The existing development footprint for paved parking is 32,301 square feet. The net change in development footprint for paved parking is a net gain of up to 15,000 square feet, or 46%. There will be no net gain in unpaved parking at this location. If buildings or paved parking areas are removed, they can be replaced by similar-sized facilities at no net gain in development footprint. This

allows some additional flexibility in design solutions for this area. The primary function, “concession visitor facilities and NPS visitor facilities” would be assigned to this zone, which is the same for Alternative B. Within the Buildable Circulation Zone, no net gain in development footprint is shown for either action alternative. The primary function is “access road” in both alternatives. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, “trails and underground utilities,” for both Alternatives B and C.

**Design standards:** Design standards, illustrated in Figure 10b, are the same for alternatives B and C. This location is visible from many directions within the Tower-Roosevelt area, due to the open terrain, and also visible from the Grand Loop Road Historic District. Therefore, the design standards are tailored toward preserving the scenery of the Tower-Roosevelt area and the historic district. Within the Buildable Development Zone, buildings and structures should be screened from the road using vegetation, a berm, and a 30-foot set-back. Rather than using one large new building in this location, building size should be reduced visually by using smaller, attached units at no larger than 2,000 square feet. The existing gas station (excluding the pump area) is 1300 square feet. Plantings would integrate the buildings into the landscape. Building height should remain no larger than 1-1/2 stories high (same as Ranger Station), which allows the buildings to be screened behind the most massive portions of trees that grow in this area; higher building would be visible behind the more thin tree-tops. Parking areas (and the reflective surfaces of vehicles) are hidden behind buildings to the extent possible, using the more visually-appealing architecture as a way to lessen impacts to the scenery. Within the Buildable Natural and Buildable Circulation Zones, design standards are meant to preserve the natural scenery and to lessen the visual, natural and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic. A cultural resource site is within the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Rare plants, shown in the northeastern and southwestern corner of the location, are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. The visual resources maps show this area as visible from many directions within the Tower-Roosevelt area.

## **Tower Fall Trailhead Location**

The Tower Fall Trailhead location would continue to provide visitor services and facilities.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development, Buildable Natural, and Buildable Circulation Zones. Figures 11a and the Maps 7 through 9 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes will not result in unacceptable impacts to resources. Figure 11a shows that this zone is larger in Alternative C (toward the north) than in Alternative B due to the reduction of, rather than the removal of, the general store. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utilities that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above ground obstructions to the natural scenery. It is essentially the same for Alternative B. The Grand Loop Road and the parking area is zoned as Buildable Circulation Zone, which designates certain planning prescriptions and design standards that preserve this resource. It is shown as larger in Alternative C; similar to existing conditions.

**Planning prescriptions:** Planning prescriptions for the Tower Fall Trailhead are shown in Figure 11b. Within the Buildable Development Zone at this location, the existing development footprint for buildings is approximately 10,000 square feet. Under this alternative, there is a net reduction in buildings development footprint of up to 5,000 square feet (up to 50% reduction). This would be accomplished through the reduction of the general store; a smaller level of change than in Alternative B. The primary function “concession visitor facilities and NPS visitor facilities,” would be assigned to this zone. The existing development footprint for parking is 43,401 square feet. The proposed net gain in development footprint for paved parking is up to 16,000 square feet; a net gain of 37%. There will be no net gain in unpaved parking at this location. The primary function, “visitor roads and parking” would be assigned to this zone. This would be the same for Alternative B. A large portion of this location is zoned as Buildable Natural Zone, where there is an undetermined development footprint for the primary functions, “trails and underground utilities,” for both Alternatives B and C.

**Design standards:** Illustrated in Figure 11b, design standards are the same for both Alternative B and C at this location. Within the Buildable Development Zone, they are tailored toward preserving the natural setting and scenery and the adjacent Grand Loop Road Historic District. Facilities would be screened from the road using landforms and trees. Buildings would be blended into the landscape by using plantings and by breaking up one large building-mass into smaller, attached units. The existing general store has a footprint of 8,253 square feet. Within the Buildable Circulation Zone, design standards are meant to preserve the Grand Loop Road Historic District. Under the Buildable Natural Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to the installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that this location is adjacent to the Grand Loop Road Historic District and to some cultural resource sites. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. This location is also visible from the road. There are some limiting factors related to soils in this location. The septic system cannot take any additional load in this location.

## **Tower Fall Campground Location**

The Tower Fall Campground location would continue to offer a 32-site campground for visitors and provide housing in the adjacent employee housing area.

**Buildable Planning Zones:** This location is zoned in three ways: Buildable Development Zone, Buildable Natural Zone, and Buildable Circulation Zone. Figures 12a and the Maps 7 through 9 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes may take place without unacceptable impacts to resources. Figure 12a shows that this zone is smaller in Alternative C than in B and similar to existing conditions within the employee dormitory area. A large portion of this location is also zoned as Buildable Natural Zone, which accommodates trails and underground utility changes that do not exceed a minor adverse impact for natural and cultural resources, and do not create any above-ground obstructions to the natural scenery. This zone is larger in Alternative C than in B. The campground road is zoned as Buildable Circulation Zone, which is the same for Alternative B.

**Planning Prescriptions:** Planning prescriptions for the Tower Campground location are shown in Figure 12b. Within the Buildable Development Zone at this location, the existing development footprint for

buildings is 8,044 square feet. Under this alternative, the maximum net gain in development footprint for buildings is 200 square feet (2%) which can accommodate possible projects such a vault toilet. There will be no net gain in paved or unpaved parking at this location. If buildings or paved parking areas are replaced with similar sized facilities, there would be no net gain in development footprint; allowing additional flexibility. The sewer-system capacity is a limiting factor within this location; no additional loads on sewer can be accommodated. The primary function, "visitor and operational facilities" is assigned to this zone. Within the Buildable Circulation Zone, no net gain in development footprint is proposed. The primary function of this zone is for visitor access. Under the Buildable Natural Zone, there is an undetermined development footprint for the primary functions, "trails and underground utilities." Planning prescriptions for the Buildable Natural Zone and the Buildable Circulation Zones are the same for Alternatives B and C.

**Design Standards:** Design standards, illustrated in Figure 12b, are the same for alternatives B and C. Within the Buildable Development Zone, they are tailored toward preserving the natural scenery for visitors using this campground; blending facilities into the landscape. A single building should be no larger than 1,200 square feet and 1 story in height (existing dorm size). Under the Buildable Natural Zone and the Buildable Circulation Zone, design standards are meant to preserve the natural scenery and to lessen the visual, natural, and cultural impacts due to installation of underground utilities.

**Surveyed Resources and Additional Compliance:** Natural and cultural resource survey maps (Appendix B) show that there are some cultural resources sites within this location. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. The employee housing area is visible from the public campground. The septic system cannot take any additional load in this location.

## **Yancey's Hole Location**

The western style cookout would continue and the facilities at the Yancey's Hole location that support this operation would remain.

**Buildable Planning Zones:** This location is zoned in two ways: Development and Buildable Natural Zones. Figures 13a and the Maps 7 through 9 illustrate the size and location of these zones. The Buildable Development Zone would be designated for those portions of this location where facility changes may take place without unacceptable impacts to resources. This cookout site was previously constructed within a cultural resource site in the 1950s. Therefore the Buildable Development Zone is designated tightly around the existing development with no expansion (smaller than in Alternative B). The Buildable Natural Zone is shown where trails that do not exceed a minor adverse impact are accommodated (same for Alternative B).

**Planning Prescriptions:** Figure 13b illustrates planning prescriptions for this location. Within the Buildable Development Zone, the existing development footprint for buildings is 2,732 square feet. Under this alternative, there is no net gain in development footprint for buildings. The primary function is "concession western cookout facilities." No net gain in development footprint for buildings or unpaved parking is accommodated. However, if facilities such as trails, picnic or serving shelters are removed, they can be replaced within this zone with no net gain in development footprint. Planning prescriptions for the Buildable Natural Zone is the same for Alternatives B and C.

**Design Standards:** Design standards, illustrated in Figures 13b and 14, are the same for alternatives B and C. They are intended to preserve the wilderness character for those who visit this location by

horseback or wagon. Within the Buildable Development Zone, facilities should blend into the surrounding landscape. The scale, materials, and design of these facilities should remain small, modest, and rustic; with a single building footprint at no larger than 1,800 square feet, which is the size of the existing picnic shelter. Avoid excavation to preserve cultural resource sites. Design standards within the Buildable Natural Zone are meant to preserve the narrow, winding character of the trails; preserving natural and cultural resources.

Surveyed Resources and Additional Compliance: Natural and cultural resource survey maps (Appendix B) show that this location contains a cultural resource site within and around the main body of the Buildable Development Zone. Therefore, projects that meet the components of acceptable limits of change would require additional compliance with Section 106 of the National Historic Preservation Act. Wetlands, shown in the southern portion of the location, and the creeks flowing through the location are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2. This location is very visible from adjacent trails and roads.

The following Figures and maps are reference throughout the description of the alternatives, above. They illustrate the alternatives on maps of the Tower-Roosevelt area and provide an easy comparison of the three planning components for all three alternatives.

## EVALUATING FUTURE PROJECTS

The final step in the comprehensive planning process is to apply the acceptable limits of change to future projects. The comprehensive plan provides a framework for decision-making that NPS staff, managers, and partners would use when developing, evaluating, and then selecting project proposals. There is a project application form in Appendix A. In order to determine if a project proposal is acceptable for the Tower-Roosevelt area, NPS staff and partners would:

1. Determine if the project is contained within the list of possible projects for that location.
2. Determine if the project proposal achieves or supports desired conditions for natural, cultural, and visual resources and visitor experience.
3. Refer to the planning components for each location to:
  - a. Determine which buildable planning zone(s) the project would take place within.
  - b. Refer to the Planning Prescriptions. Determine if the function corresponds to the acceptable functions established by the comprehensive plan. Identify how much of the acceptable net change in development footprint would be utilized by this project and how much remains.
  - c. Refer to the Design Standards for that location for any additional guidance.
4. Compare the project proposal to appropriate maps and figures for the location showing all natural, cultural, and visual resource maps (Appendix B) and buildable planning zones. Even for projects that meet the components of acceptable limits of change, additional compliance with Section 106 of the National Historic Preservation Act would be necessary if there are any cultural resources and historic properties within or adjacent to the project site. Rare plants, wetlands and

waters of the U.S. are considered resources that may require additional compliance that are to be avoided. In cases where avoidance is not possible, impacts must be mitigated according to the Clean Water Act, DO 77-1, and DO 77-2.

5. Submit the project proposal with appropriate documentation (see form in Appendix A) to the comprehensive planning staff for the superintendent's approval.

Any future projects (selected from the list of possible projects) that fall within the scope of the buildable planning zones, planning prescriptions, and design standards would be regarded as within the acceptable limits of change and may be considered for the park approval process for construction within the Tower-Roosevelt area. Projects that fall outside the list of possible projects and/or the scope of the buildable planning zones, planning prescriptions, or design standards are likely to exceed the environmental effects of the proposed alternatives, would be considered beyond the acceptable limits of change, and would be rejected. In exceptional cases, a rejected proposal may bring forth new information and demonstrate a compelling need for consideration. In these extraordinary cases, additional analysis that follows the National Environmental Policy Act would be required.

All projects that have the potential to affect wetlands, waters of the U.S., rare plants, and/or cultural resources must go through additional steps to comply with applicable laws and policies, even if they are within the scope of this plan. This is identified in the Project Evaluation Process.

## ALTERNATIVES CONSIDERED AND DISMISSED

Two alternatives were considered for inclusion in the Tower-Roosevelt Area Comprehensive Plan, but were dismissed from further analysis for the following reasons.

**No Further Development Alternative:** As another version of the "No Action" alternative, an alternative that examined no further change to visitor services, facilities, and utilities was considered for inclusion in the TRCP/EA. Seven objectives of the TRCP/EA are listed in Chapter 1. The following five objectives would not be met by this alternative:

- Preserve and protect park natural, cultural, and visual resources and visitor experience by guiding the location, function, size, and appearance of visitor services, facilities, and utilities.
- Ensure that the desired conditions for natural, cultural, and visual resources and visitor experiences are defined and achieved.
- Use sustainable designs, methods, building practices, and technologies to the extent possible.
- Identify opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions for resources and visitor experience; reinvesting resources to improve the condition of the park's most important assets.
- Guide decisions to provide high quality visitor services; concentrating efforts on core services at cores locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.

In order to continue to support those who visit this portion of the park with the existing range of visitor services in a way that preserves and even improves natural, cultural, and visual resources, future changes to development are likely. There are historic facilities, such as the Roosevelt Lodge and Tower Ranger Station, which require periodic rehabilitation to insure their continued use and preservation. A number of facilities that support desired visitor experience are aging and may pose human health and safety hazards, are poorly constructed, and/or are non-sustainable. These facilities require modification. The Tower Falls Trailhead general store was proposed to be removed in a previous park plan. Many operational facilities, such as an emergency services building, employee housing, and employee bathrooms are needed to directly or indirectly support visitors in this portion of the park.

**High Level of Change Alternative:** An alternative that proposed a *high level of change* was considered for inclusion in the TRCP/EA. This alternative included the following elements, some of which would likely lead to potential unacceptable impacts:

- Remove facilities at the Yancey's Hole location and reduce horse operations
- Year-round operation for visitor services
- Change Roosevelt Lodge function to educational use

Yancey's Hole: The first development within the Tower-Roosevelt area, John Yancey built a hotel and mail station here in Pleasant Valley to serve travelers on the stage road to Cooke City in 1884. The development remained in operation through 1906, when the hotel burned to the ground. The foundations of what were once the Yancey's hotel and saloon and a cultural resource site were uncovered during the 2004 archeological survey. Constructed on the edge between forest and meadow where a small creek flows into Pleasant Valley, those who placed the western cookout site in this location in the 1950s had no knowledge of their impacts to a cultural resource site, or to the forested wetland. Under the High Level of Change alternative, the cookout at the Yancey's Hole location would no longer be offered to visitors, the facilities would be removed, and the Roosevelt corral operation would be reduced in size. The planning process revealed that traditional horse use is a fundamental value that supports the significance of the Tower-Roosevelt area; particularly the historic horse use associated with the Roosevelt Lodge. This cookout site offers one of very few opportunities where those visitors who are unable to hike into the backcountry can experience a wilderness-type setting that is away from developed areas. Almost a third of respondents who participated in a 2006 survey pursued trail rides, with a majority stating they enjoyed this activity. It is also supported in the 1974 Master Plan. Although the cookout site overlies natural and cultural resources, the site has already been disturbed and the impact has already occurred. Impacts resulting from continued use were not considered unacceptable. Moving the facility to another location would likely further impact the natural, cultural, and visual resources in the area, as most of the adjacent areas are likely to contain resources that may require additional compliance. Therefore, this element of this alternative was from further consideration.

Provide Year-Round Operations: Year-round services were considered for a visitor contact station, retail operations, and other existing concession-operated services such as the Roosevelt Lodge, cabins, and corral operations. Converting these facilities to year-round use would require extensive and expensive improvements to winterize utility systems and buildings that were not designed or constructed for winter use. Year-round operations would require a seasonal expansion in maintenance and emergency

operations and support infrastructure. Finally, there were no surveys or analyses available to fully determine the impacts of introducing winter services to this area. Therefore this alternative was eliminated from further consideration.

Covert Lodge to Educational Use: Utilizing the lodge as an educational facility was considered as a part of this alternative. However, eliminating the Roosevelt Lodge dining and lodging function would remove a fundamental value that supports the significance of the Tower-Roosevelt area. The lodging and dining facility is supported in the 1974 Master Plan. This alternative was therefore eliminated from further consideration.

## MITIGATION MEASURES

The three planning components, (1) buildable planning zones, (2) planning prescriptions, and (3) design standards, are tools that preserve and protect fundamental resources and values and visitor experience while guiding future changes in development. Therefore, these planning components act as mitigation measures to minimize impacts to resources.

To further mitigate impacts that can potentially result during project implementation the following mitigation measures are common to all three TRCP/EA alternatives (A, B, and C):

### **To preserve park natural, cultural, and visual resources:**

- Construction workers and supervisors would be informed about relevant park regulations and the importance of taking appropriate measures to minimize impacts to park resources.
- Construction workers and supervisors would be informed about special status species. If one of these species is discovered in a project area, contract provisions would require cessation of construction activities until park staff can assess the situation. The contract would be modified if necessary to protect the species.
- Construction activities would not be permitted in locations where archeological or paleontological resources are known to be present without the presence of an archeological monitor. If such resources are discovered during construction, the work would cease until park staff have consulted with the state historic preservation officer and the Advisory Council on Historic Preservation (§36 CFR 800.13, *Post-review Discoveries*). In the unlikely event that human remains are discovered, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- Contractors and subcontractors would be informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties.
- The park vegetation guidelines including topsoil salvaging would be implemented in construction projects.
- All wetland and floodplains would be avoided or permitted and mitigated relevant to park and other agency requirements.

**To minimize ground disturbance:**

- Staging and stockpiling areas would be located in previously disturbed sites, away from visitor use areas to the extent possible, and returned to pre-construction conditions following construction.
- The minimum area needed for an approved construction activity would be delineated by construction tape, snow fencing, or similar material. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the identified construction zone.
- Because disturbed soils are susceptible to erosion until revegetation takes place, standard erosion control measures such as the use of silt fences would be used to minimize the possibility of soil erosion or impacts from soil erosion.

**To minimize impacts during construction:**

- Construction zones would be identified and fenced prior to any construction activity. If previously undiscovered archeological resources are discovered during construction, work in the immediate vicinity of the discovery would cease until the resource could be identified and documented. An appropriate mitigation strategy developed in consultation with the Wyoming State Historic Preservation Office would be developed. Additional compliance beyond the scope of the EA would be necessary.
- If necessary, dust generated by construction activity would be controlled by spraying water from an approved source on the site.
- Contractors would regularly monitor and check construction equipment to identify and repair any petrochemical leaks.
- To reduce noise and emissions, construction equipment would not be permitted to idle for extended periods and construction workers would not be permitted to broadcast portable audio devices through speakers. The use of jake brakes would be minimized when transporting materials in large trucks.
- The timing of construction activities may be altered to minimize impacts on park visitors.

**To restore disturbed areas**

- All disturbed areas would be restored shortly after construction activities are completed.
- Revegetation and recontouring would be designed to minimize visual intrusions while replicating as nearly as possible pre-construction conditions.
- Revegetation efforts would strive to replicate the natural spacing, abundance, and diversity of the native plant community.

- Weed control methods would be implemented to prevent the introduction of non-native species.

## THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

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

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

Alternative A, the *No Action* alternative, would not meet the third criteria above as it reacts to individual proposals rather than planning for overall desired conditions for resources and visitor experience and evaluating impacts collectively. It would also not meet the final two criteria as it does not address renewable resources or recycling of resources. It is assumed that although the No Action addresses proposed projects on a case-by-case basis, the remaining criteria would be honored by the existing environmental analysis processes.

Although Alternative B, *Medium Level of Change*, provides the most opportunities for visitors through larger development footprints, larger buildable zones, and more possible projects, it does so without unacceptable impacts to resources and visitor experience. Therefore it meets the first four criteria above. It meets the last two criteria by addressing sustainability in the design standards, and also by encouraging the removal of buildings and pavement when possible. However, it does propose a 19% increase in building footprint and 29% increase in overall paved parking footprint, which is higher than in Alternative C.

Alternative C, *Low Level of Change*, is the environmentally preferred alternative because it best addresses these six evaluation factors. Alternative C provides for the construction of possible projects through buildable zones, development footprint without unacceptable impacts to resources and visitor experience. It does this through a 7% increase in building footprint and a 22% increase in paved parking footprint, which is less than what is proposed in Alternative B. Therefore it best meets the first 4 criteria above. Alternative C has less impact on health and human safety, visual quality, visitor use and experience and park operations than Alternative B. It meets the last two criteria by addressing

sustainability in the design standards, and also by encouraging the removal of buildings and pavement when possible.

No new information came from public scoping or consultation with other agencies to necessitate the development of any alternatives other than those evaluated in this document. The environmentally preferred alternative must preserve and protect the park's important cultural and natural resources; improve and make safer the work environment for visitors and staff; provide better visitor services without degradation of the environment or risk of health or safety; and through the use of sustainable design, enhance the quality of renewable resources.

# Figure 5: Tower-Roosevelt Alternatives Comparison

The Tower-Roosevelt Comprehensive Plan/EA compares three alternatives: a no action and two action alternatives. Alternative A -No Action, No Plan. Change is determined on a case-by-case basis. Alternative B presents a Medium Level of Change and Alternative C presents a Low Level of Change.



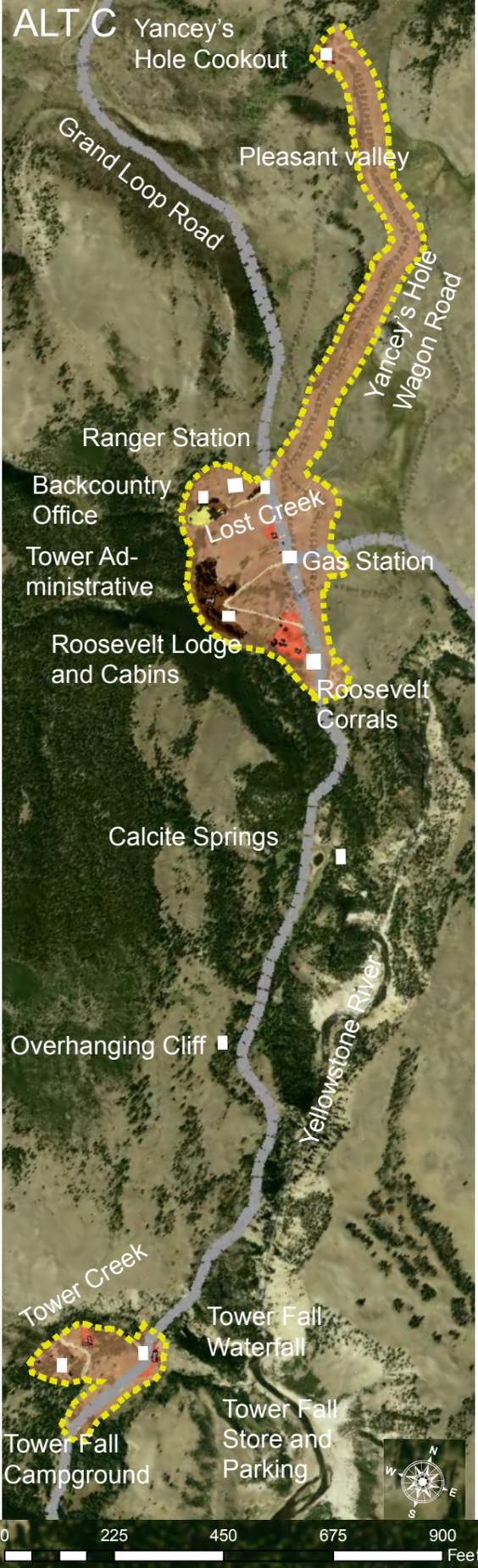
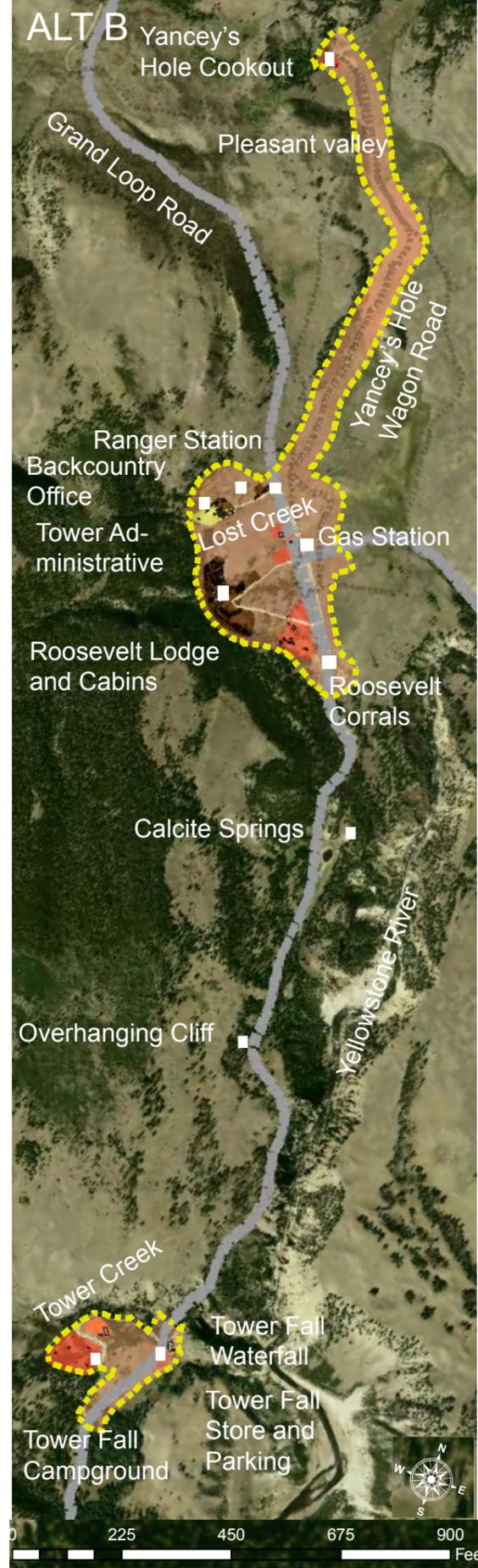
Yancey's Hole Location

Tower Ranger Station/Tower Administrative Locations

Tower Junction Location

Roosevelt Lodge/Roosevelt Corral Locations

Tower Fall Trail-head/ Tower Fall Campground Locations



- Legend**
- Planning Boundary
  - Planning Zones**
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

The yellow dashed line indicates the extent of the Planning Boundary.

Note: Larger, detailed maps of the Alternatives are found in Chapter 2, Maps 1-9.



### Map 1

Legend

- Existing Building
- New Building
- Removed Building
- Buildings
- Contours
- Wagon Road
- Horse Trail
- Hiking Trail
- Rivers & Streams
- Roads

**No Planning  
Zones Apply**  
**TOWER/ROOSEVELT  
LOCATIONS**  
**ALTERNATIVE A**



**Legend**

- Buildings
- Trails**
- Wagon Road
- Horse Trail
- Hiking Trail
- Principal Park Roads
- Secondary Roads
- Rivers & Streams

# Map 2

**No Planning  
Zones Apply  
TOWER FALL  
LOCATIONS  
ALTERNATIVE A**



**Legend**

- Buildings
- Trails**
  - Wagon Road
  - Horse Trail
  - Hiking Trail
- Primary Roads
- Rivers & Streams

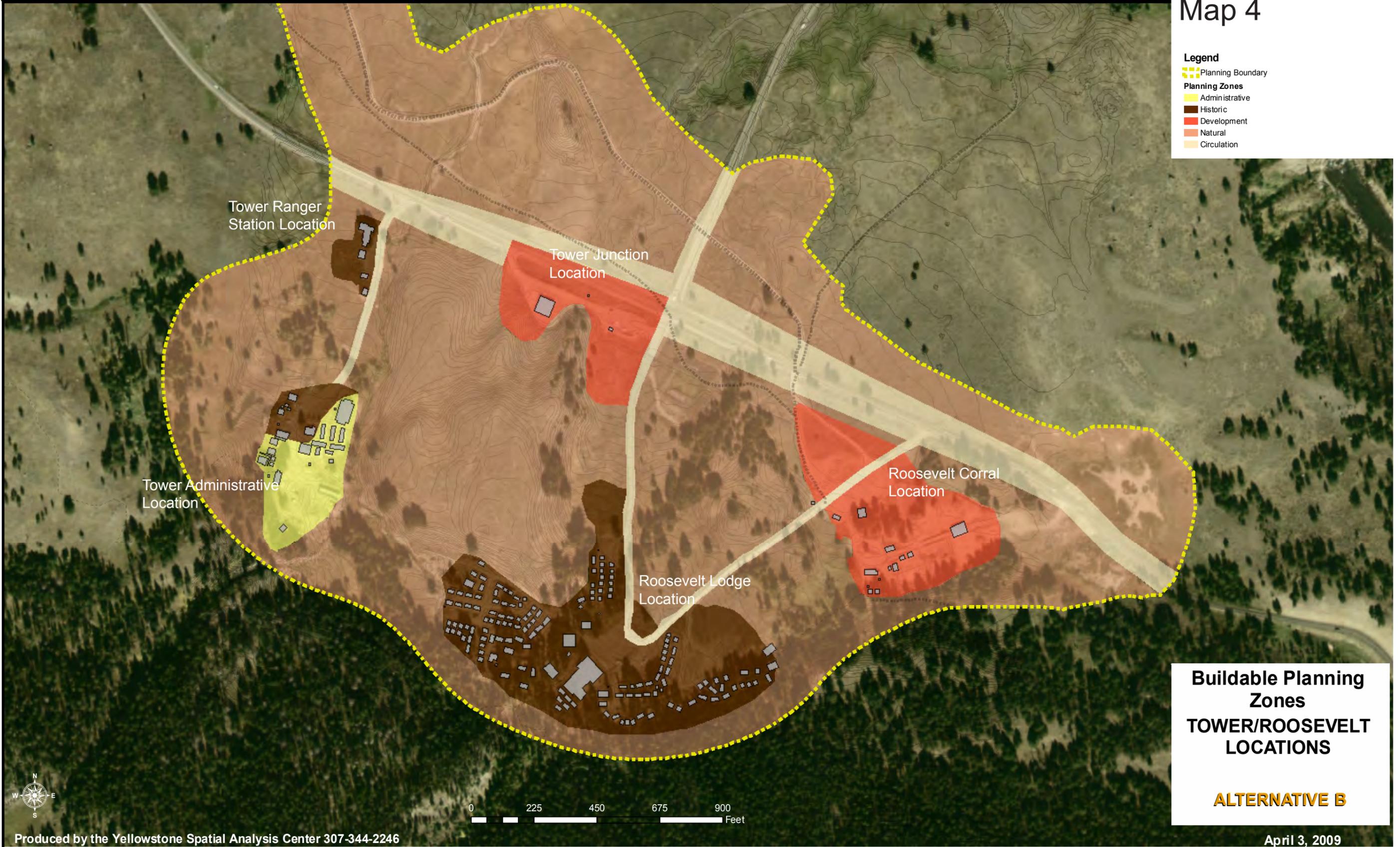
# Map 3

**No Planning  
Zones Apply  
YANCEY'S HOLE  
LOCATION  
ALTERNATIVE A**



# Map 4

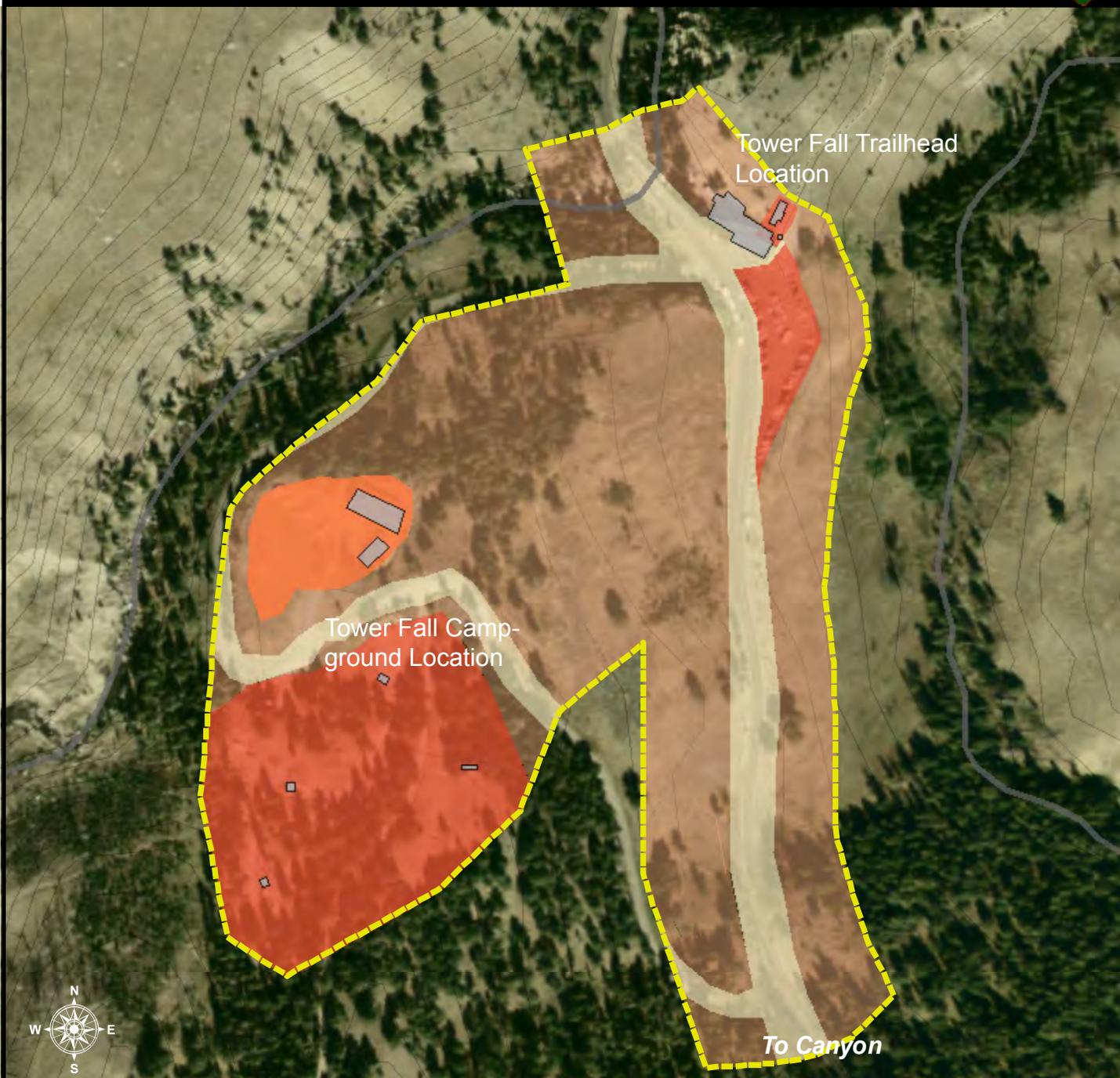
- Legend**
- Planning Boundary
  - Planning Zones**
    - Administrative
    - Historic
    - Development
    - Natural
    - Circulation



**Buildable Planning  
Zones  
TOWER/ROOSEVELT  
LOCATIONS**

**ALTERNATIVE B**



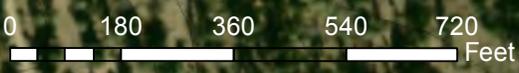


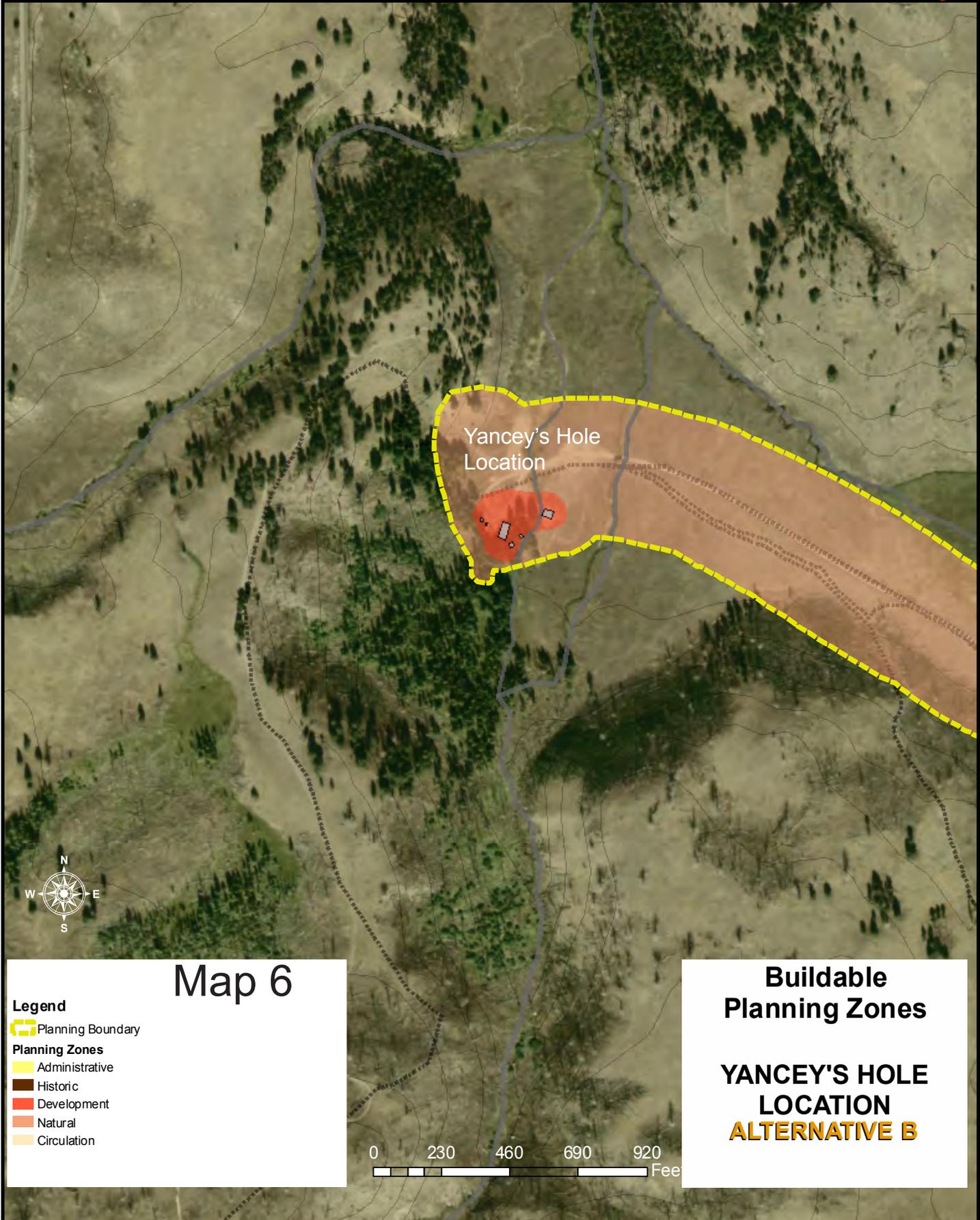
# Map 5

- Legend**
- Planning Boundary
  - Planning Zones**
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

**Buildable  
Planning Zones**

**TOWER FALL  
LOCATIONS  
ALTERNATIVE B**





# Map 6

- Legend**
- Planning Boundary
  - Planning Zones**
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

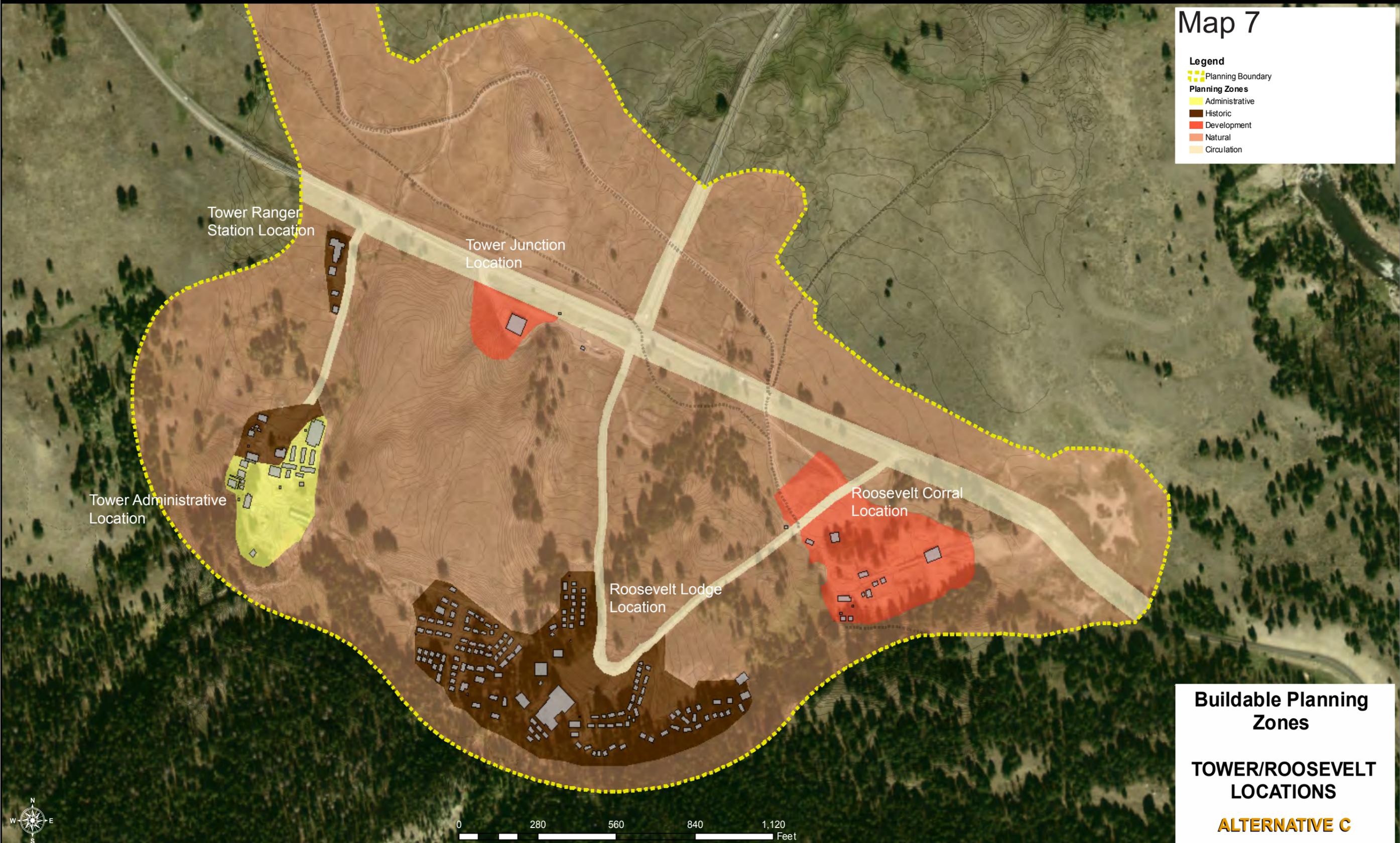
**Buildable  
Planning Zones**

**YANCEY'S HOLE  
LOCATION  
ALTERNATIVE B**



# Map 7

- Legend**
- Planning Boundary
  - Planning Zones**
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

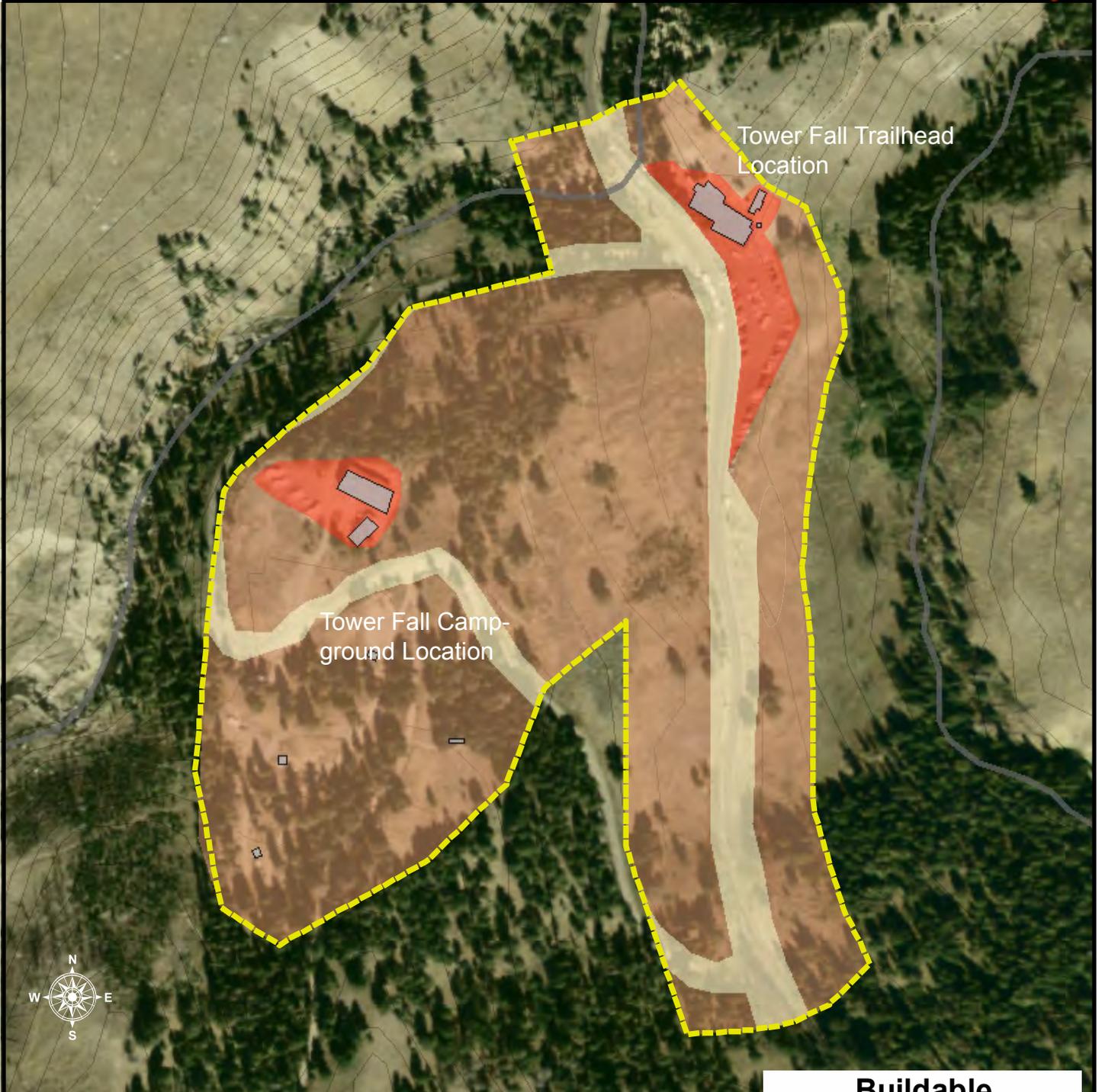


**Buildable Planning Zones**

**TOWER/ROOSEVELT LOCATIONS**

**ALTERNATIVE C**





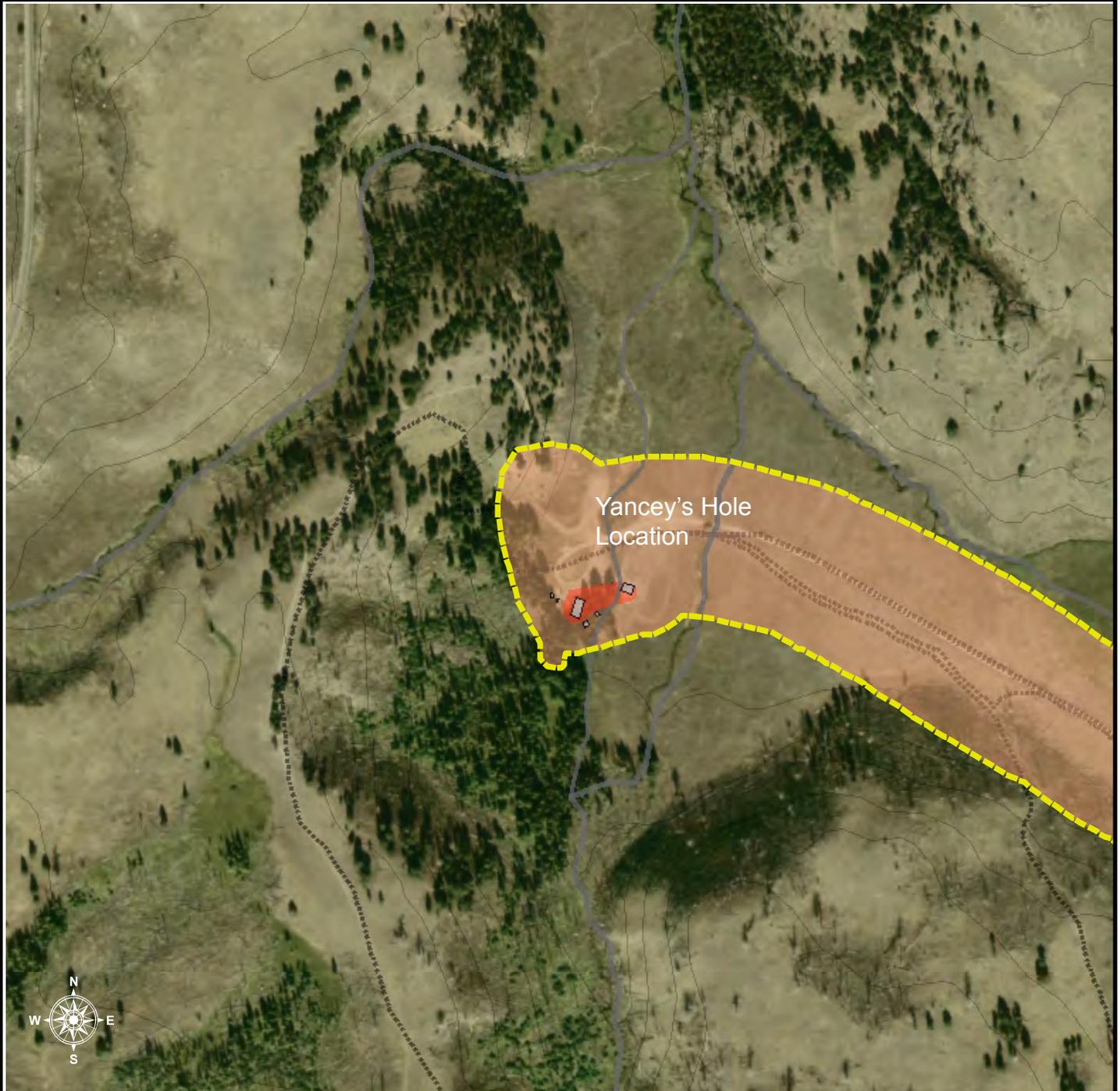
# Map 8

- Legend**
- Planning Boundary
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation



**Buildable  
Planning Zones**

**TOWER FALL  
LOCATIONS  
ALTERNATIVE C**



### Map 9

**Legend**

- Planning Boundary
- Planning Zones**
- Administrative
- Historic
- Development
- Natural
- Circulation

### Buildable Planning Zones

**YANCEY'S HOLE  
LOCATION  
ALTERNATIVE C**





# Roosevelt Lodge Location

# 1 Planning Zones

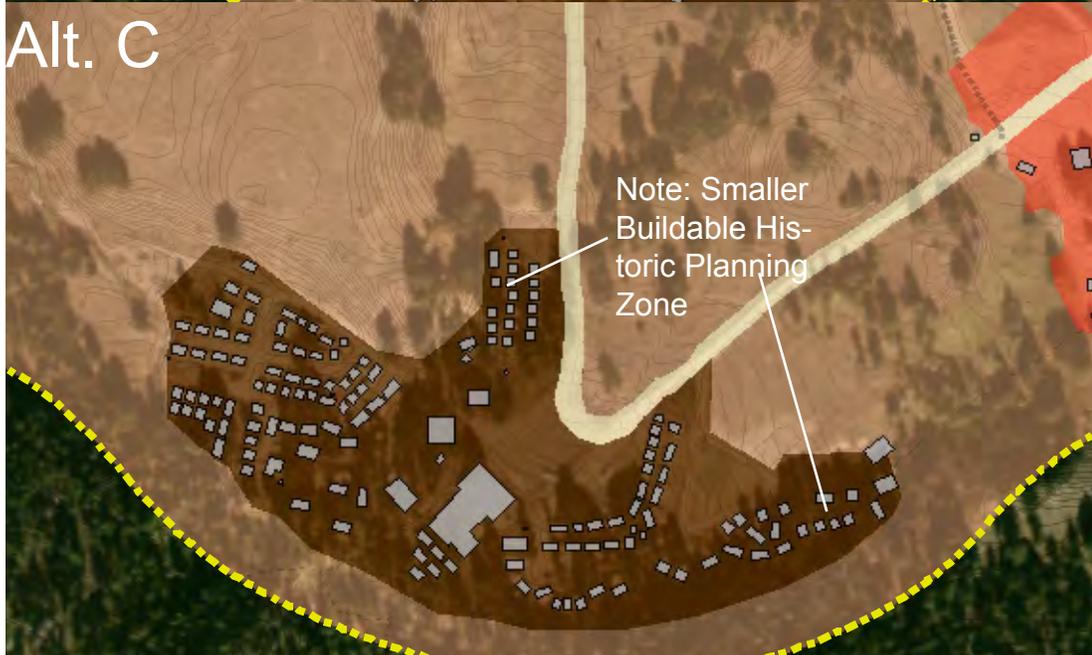
## Figure 6a



**Alternative A:**  
**(top) No Action,** no plan-change is determined on a case by case basis



**Alternative B:**  
**(middle) Medium Level of Change-** Buildable Historic planning zone shows areas where an increased development footprint can take place within the historic district.



**Alternative C:**  
**(bottom) Low Level of Change-** Buildable Historic planning zone shows a smaller development footprint that is similar to existing conditions.

**Legend**

- Planning Boundary (Yellow dashed line)
- Planning Zones
  - Administrative (Yellow line)
  - Historic (Brown area)
  - Development (Red area)
  - Natural (Light brown area)
  - Circulation (Yellow line)

Roosevelt Lodge Location  
 Alternatives Comparison:  
 Acceptable Limits of Change

Figure 6b

## 2 Planning Prescriptions

Zone	Alternative A No Action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
<b>Buildable Historic Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 7200 s.f. net gain for buildings*; Not to exceed 10,000 s.f. net gain for parking*	Concession visitor facilities related to lodging/dining.  Concession operational facilities related to lodging/dining.	Not to exceed 650 s.f. net gain for new buildings* Not to exceed current s.f. for parking improvement	Concession visitor facilities related to lodging/dining.  Concession operational facilities related to lodging/dining.
<b>Buildable Circulation Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	No net gain.	Access road circulation.	No net gain.	Access road circulation.
<b>Buildable Natural Zone</b>	Not defined in this alternative	Evaluated on a case-by-case basis	Expansion.	Underground utilities.  Trails, boardwalks	Replacement in kind.	Underground utilities.  Trails, boardwalks

\*NOTE: This Plan/EA provides for reduction, replacement, and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.

## 3 Design Standards

Design standards are applied to both Alternative B and C.

Development starts at the toe of the steep slope where thick forest begins to thin.

Natural clusters of Douglas-fir create screening.

Views of distant mountains give a glimpse of the huge scale of the wilderness setting.

Roosevelt Lodge is positioned at the edge of a small meadow separated from the Grand Loop Road giving the feeling of frontier

A natural terrace helps separate the Roosevelt Lodge development from the road

Short-grass prairie and sagebrush flats, where wildlife is often visible

<b>Buildable Historic Zone</b>	<b>Materials</b>	Compatible rustic architecture; fire resistant, natural materials. Reflect character of historic buildings and landscape. Landscape features include: surfaces that appear unpaved; curbing that uses small logs; simple, small-scale features in rustic architectural style. Use sustainable design methods, materials and technology where possible.
	<b>Color</b>	Utilize historically appropriate colors and finishes.
	<b>Scale, size</b>	Lodge remains dominant building; new construction not to exceed 650 s.f., 1 story for individual buildings; (smaller than the lodge and similar to existing cabins and bathhouse structures.)
	<b>Roof design</b>	Gable roofs; roof pitch and composition consistent with historic buildings; appropriate for snow loads. Use fire resistant materials.
	<b>Layout</b>	Preserve lodge as the center of the complex surrounded by cabins clustered on either side in distinct groupings and oriented around meadow. Consolidate parking; separate from cabins. Minimize parking visibility to lodge entrance and critical views. Views from Roosevelt Lodge porch are enhanced by improving parking lot design. Signs, night lighting, and vegetation to follow existing approved park guidelines.
	<b>Setting</b>	Tucked away, secluded, not visible from Grand Loop Road. Meadow in front of lodge and cabins retained as organizing feature. Enhance view from lodge porch of distant mountains. Trees interspersed throughout area provide shade, screening, and the feeling of being in a forest. Dry creek bed is retained as one of the original features around which the development was sited. Retain historic specimen trees and log footbridges.
<b>Buildable Circulation Zone</b>	<b>Materials</b>	Asphalt for main roads and parking. Unpaved, natural appearance for other surfaces
	<b>Scale, size</b>	Retain narrow, historic access drive that leads to lodge.
<b>Buildable Natural Zone</b>	<b>Layout</b>	Facilities and utilities that are low to the ground or underground such as trails, boardwalk, and underground utilities. Lessen appearance of long straight lines of disturbance for utility trenches. Trails and boardwalks should follow park standards.
	<b>Restoration</b>	Strip and stockpile topsoil before construction and replace along disturbed trench-line after finish grading. Restore grade to match surrounding landscape; match natural surface drainage patterns and undulations in topography.
	<b>Setting</b>	Appearance of natural landscape with no above-ground features other than small utility boxes, hydrants, signs, trails, and boardwalks. Preserve natural views in landscape



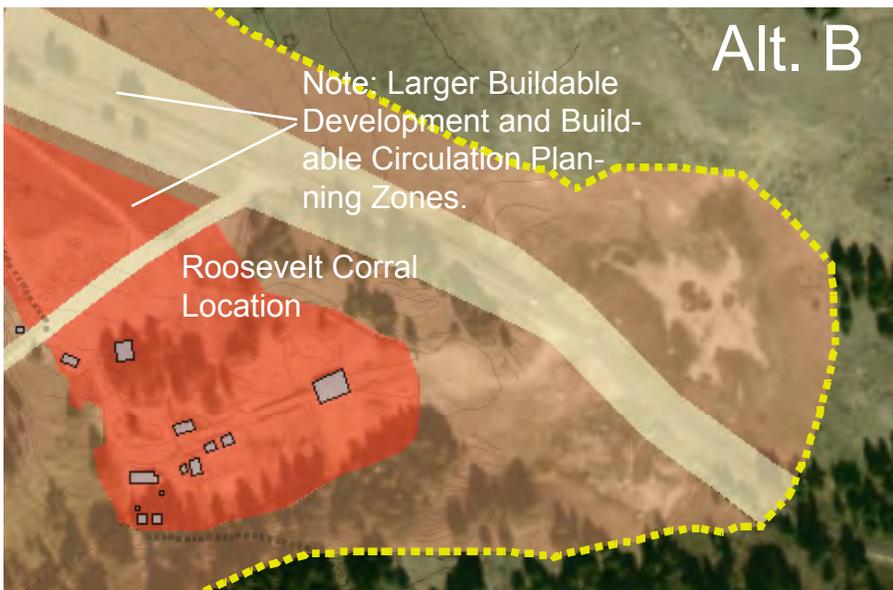


# Roosevelt Corral Location

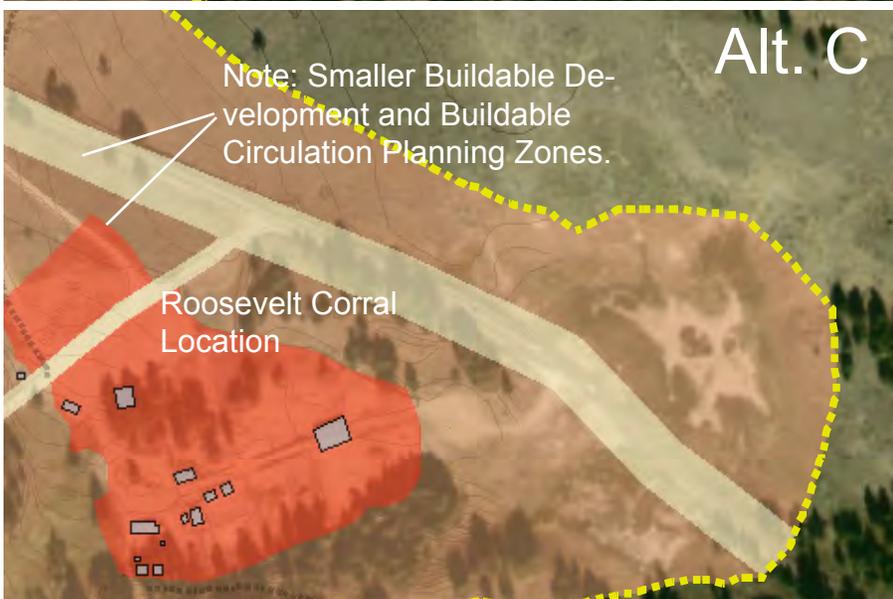
# 1 Planning Zones Figure 7a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis.



**Alternative B: (middle) Medium Level of Change**-Buildable Development and Buildable Circulation planning zones show where a larger development footprint can take place.



**Alternative C: (bottom) Low Level of Change**-Buildable Development and Buildable Circulation planning zones show a smaller development footprint.

- Legend**
- Planning Boundary
  - Planning Zones**
    - Administrative
    - Historic
    - Development
    - Natural
    - Circulation

# Roosevelt Corral Location

## Alternatives Comparison: Acceptable Limits of Change

### 2 Planning Prescriptions

Figure 7b

Zone	Alternative A No Action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
Buildable Development Zone	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 2,000 s.f. net gain for new buildings* Not to exceed current s.f. for unpaved parking	Concession visitor facilities related to traditional horse use.	Not to exceed 1,200 s.f. net gain for new buildings* Not to exceed current s.f. for unpaved parking	Concession Visitor Facilities related to traditional horse use.
				Concession operational facilities related to traditional horse use.		Concession Operational Facilities related to traditional horse use.
Buildable Circulation Zone	Not defined in this alternative	Evaluated on case-by-case basis	Grand Loop Road shifts 100'	Circulation	Grand Loop Road stays the same as existing	Circulation
Buildable Natural Zone	Not defined in this alternative	Evaluated on case-by-case basis	Replacement with expansion	Utilities	Replacement in kind	Utilities
				Trails		Trails

**\*NOTE: This Plan/EA provides for the reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.**

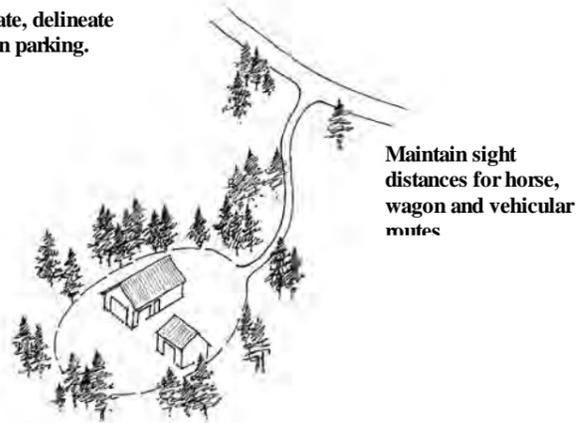
### 3 Design Standards

Design standards are applied to both Alternative B and C.

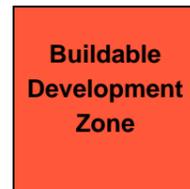


Clusters of trees help visually screen buildings and blend with their natural setting.

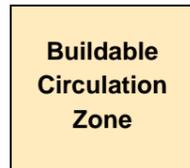
Consolidate, delineate and screen parking.



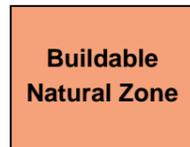
Maintain sight distances for horse, wagon and vehicular routes



- Materials** Simple, utilitarian, rustic style. Wood; board siding; log construction with small diameter logs. Use fire resistant materials. Character is compatible with corral style. Use sustainable design methods, materials and technology where possible.
- Color** Compatible with the natural setting, use sustainable, non-reflective finishes such as dark brown stain.
- Scale, size** Height and scale similar to existing structures; new construction not to exceed 2,000 s.f., 1 ½ stories for individual buildings; (smaller than Roosevelt Lodge and similar to the existing hay barn), cluster buildings.
- Roof design** Design, pitch and composition similar to existing buildings; appropriate for snow loads. Use non-reflective, fire resistant roofing materials.
- Layout** Functional. Consolidate, delineate and screen parking with buildings or vegetation so views from Roosevelt Lodge are maintained. Signs, vegetation and night lighting adhere to existing park guidelines. Separate and define vehicular areas from pedestrian areas. Consolidate and screen parking.
- Setting** Maintain natural landforms, enhance vegetative screening.



- Materials** Edges are defined so that circulation is functional. Route to Lodge maintains historic character.
- Layout** Sight distances are maintained for wagon, horse and vehicular routes. Safety is emphasized in circulation patterns. Pedestrian spaces are separated from circulation routes. Where Grand Loop Road is moved, alignment characteristics remain similar to existing.



- Materials** Colors blend with vegetation. All ground disturbances follow park standards for vegetation management. Utility lines consolidated.





# Tower Ranger Station Location 1 Planning Zones

## Figure 8a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis



**Alternative B: (middle) Medium Level of Change**-planning zones in a larger configuration, larger development footprint.



**Alternative C: (bottom) Low Level of Change**-planning zones in smaller configuration with less development footprint.

### Legend

-  Planning Boundary
- Planning Zones**
-  Administrative
-  Historic
-  Development
-  Natural
-  Circulation

# Tower Ranger Station Location

Alternatives Comparison:  
Acceptable Limits of Change

## 2 Planning Prescriptions

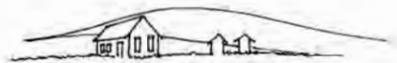
Figure 8b

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
Buildable Historic Zone	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 1,200 s.f. net gain for new buildings* Not to exceed 2,750 s.f. for new parking*	NPS administrative and visitor facilities.	Not to exceed 500 s.f. net gain for new buildings* Not to exceed current s.f. for parking	NPS administrative and visitor facilities.
Buildable Circulation Zone	Not defined in this alternative	Evaluated on case-by-case basis	Historic access road remains	Circulation.	Historic access road remains	Circulation.
Buildable Natural Zone			Replacement with expansion.	Underground utilities.	Replacement in kind.	Underground utilities.
				Trails		Trails

**\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.**

## 3 Design Standards

Design standards are applied to both Alternative B and C.



Minimize mass in upper levels of buildings.

Buildable Historic Zone	<b>Materials</b>	Compatible with rustic architecture, use design elements of existing buildings. Avoid reflective finishes so surfaces blend visually. Use sustainable design methods, materials and technology where possible. Use fire resistant materials where possible.
	<b>Color</b>	Utilize historically appropriate colors.
	<b>Scale, size</b>	Ranger Station remains the dominant building in scale and size; new construction not to exceed 1,200 s.f., 1 1/2 stories for individual buildings (smaller than the Ranger Station and similar to surrounding historic structures.)
	<b>Roof design</b>	Gabled roof, pitch and composition similar to historic buildings, wood shingles or similar appearance. Pitch appropriate for snow loads in area. Use fire resistant, non-reflective materials.
	<b>Layout</b>	Visually separate visitor services from administrative areas. Parking should not conflict with access road; screen parking from valley and historic structures. Signs, vegetation, and night lighting to follow existing approved guidelines.
Buildable Circulation Zone	<b>Setting</b>	Ranger Station presides over valley; maintain views of valley and open space in front of Ranger Station. Retain ridge to east. Maintain cultural landscape features such as creek and clustering of buildings.
	<b>Materials</b>	Asphalt for main roads and parking. Unpaved or natural appearance for other surfaces.
	<b>Scale, size</b>	Entrance road retains historic width and character.
	<b>Layout</b>	Enhance existing design.
Buildable Natural Zone	<b>Setting</b>	Narrow access road along small creek.
	<b>Materials</b>	Colors blend with vegetation. All ground disturbances follow park standards for vegetation management. Consolidate utility lines.



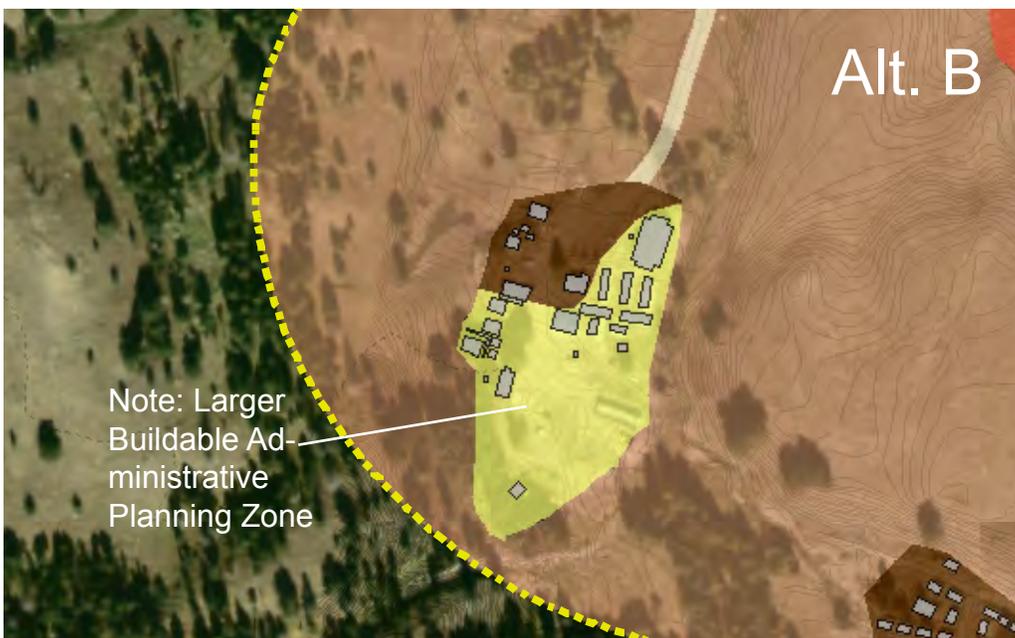


# Tower Administrative Location 1 Planning Zones

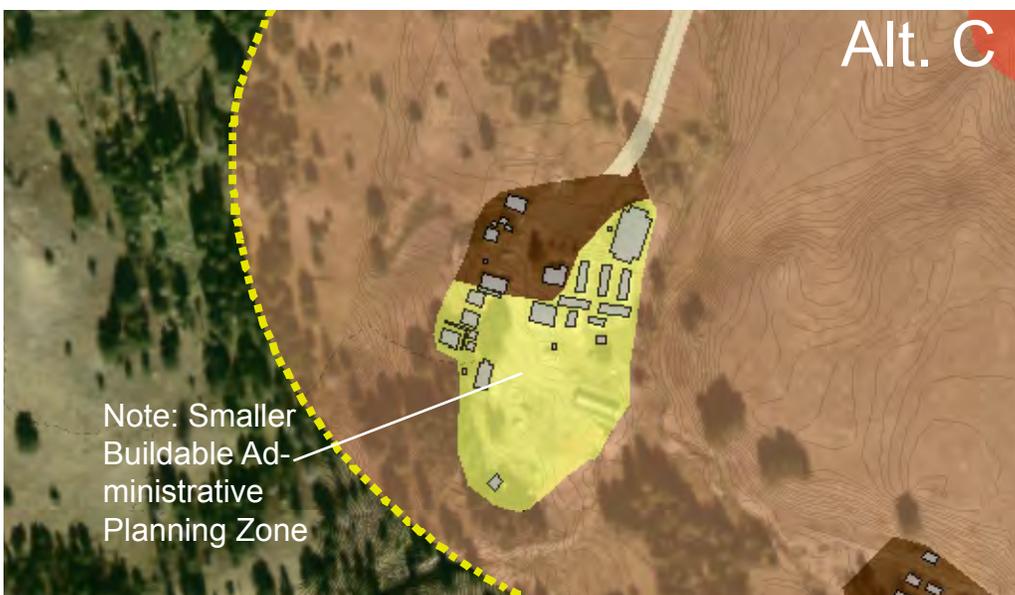
## Figure 9a



**Alternative A: (top) No Action**, no plan- change is determined on a case by case basis.



**Alternative B: (middle) Medium Level of Change**-Buildable Administrative planning zone shows where a larger development footprint can occur.



**Alternative C: (bottom) Low Level of Change**-Buildable Administrative planning zone shows where a smaller development footprint can occur.

- Legend**
- Planning Boundary
  - Planning Zones**
    - Administrative
    - Historic
    - Development
    - Natural
    - Circulation

Figure 9b

# Tower Administrative Location

Alternatives Comparison:  
Acceptable Limits of Change

## 2 Planning Prescriptions

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
<b>Buildable Administrative Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 5,400 s.f. net gain for new buildings*  Not to exceed current s.f. for parking	NPS administrative and operational facilities.	Not to exceed 3,500 s.f. net gain for new buildings*  Not to exceed current s.f. for parking	NPS administrative and operational facilities.
<b>Buildable Historic Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	No change	NPS administrative and operational facilities.	No change	NPS administrative and operational facilities.
<b>Buildable Natural Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Replacement with expansion.	Underground utilities.  Trails	Replacement in kind.	Underground utilities.  Trails

\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.

## 3 Design Standards

Design standards are applied to both Alternative B and C.



Minimize mass in upper levels of buildings.



**Buildable Administrative Zone**

**Materials**

Durable, fire resistant materials blend with historic district in overall appearance; can be modern; avoid reflective finishes. Use sustainable design methods, materials and technology where possible.

**Color**

Consistent throughout area, blends with natural environment, such as dark brown stain.

**Scale, size**

Functional structures; not to exceed 3,500 s.f., 2 stories for individual buildings (the size of the existing 4-plex.)

**Roof design**

Design, pitch and composition similar to existing buildings; appropriate for snow loads. Use dark, non-reflective, fire resistant materials, especially for roofing materials (to reduce visibility on taller structures.)

**Layout**

Signs, night lighting, and vegetation to follow existing approved park guidelines.

**Setting**

Consolidate maintenance area; separate from the visitor services and creek.

Screen views from Grand Loop Road, Roosevelt Cabins and Tower Ranger Station.



**Buildable Historic Zone**

**Materials**

Compatible with rustic architecture, retain log fencing for corral area. Use fire resistant materials.

**Color**

Utilize historically appropriate colors.

**Scale, size**

Ranger Station remains the dominant building, new construction not to exceed 1,200 s.f., 1 1/2 stories for individual buildings (smaller than the Ranger Station and similar to historic structures in the area.)

**Roof design**

Design, pitch and composition similar to historic buildings; appropriate for snow loads. Use fire resistant materials

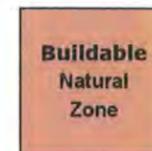
**Layout**

Buildings clustered around barn and corral, separate from Ranger Station.

**Setting**

Consolidate operational functions from visitor services and separate from creek.

Screen views from the Grand Loop Road and Tower Ranger Station.



**Buildable Natural Zone**

**Materials**

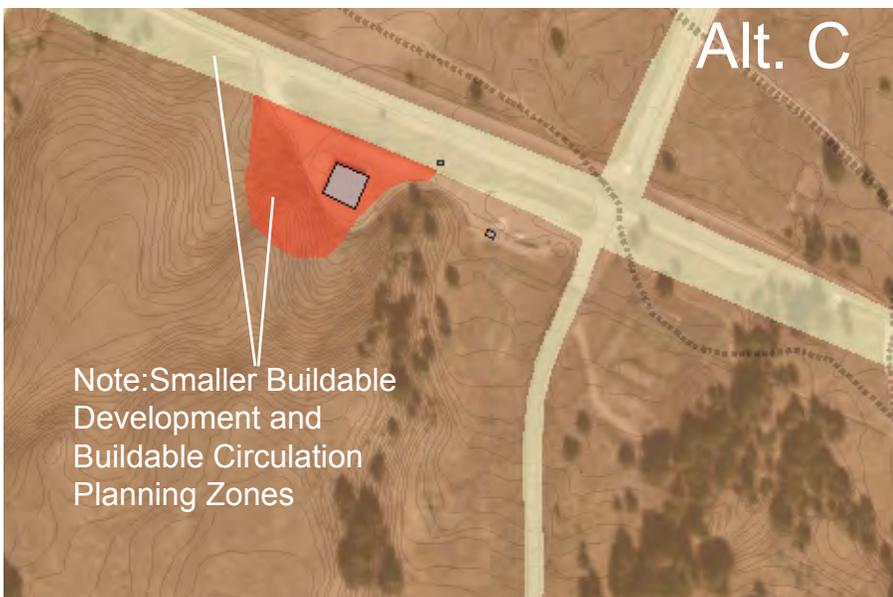
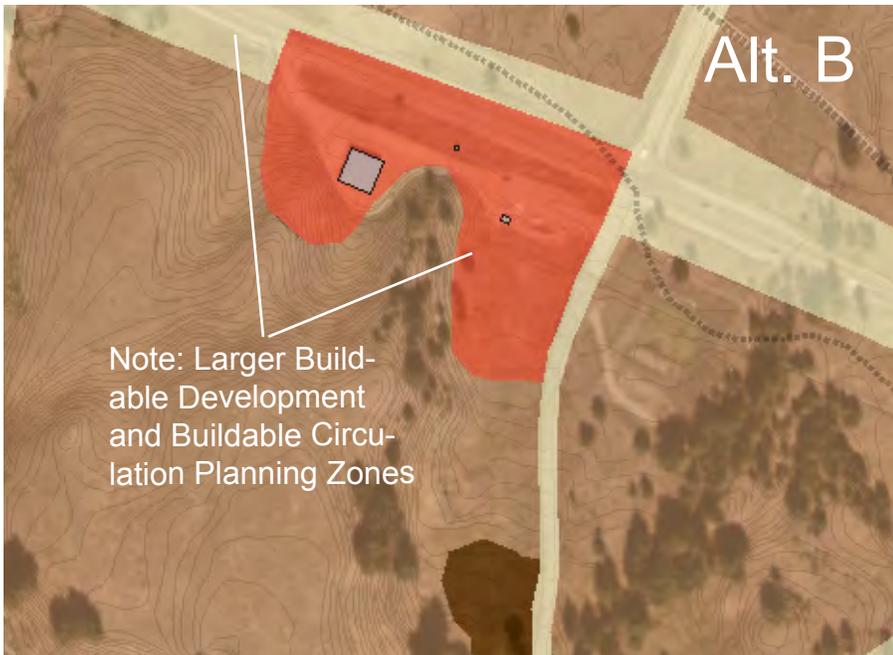
Consolidate utility service lines; minimize creek crossings. Follow existing park guidelines for ground disturbance and revegetation. Minimize utility structures in visible locations.





# Tower Junction Location

# 1 Planning Zones Figure 10a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis.

**Alternative B: (middle) Medium Level of Change**-Buildable Development and Buildable Circulation planning zones show where a larger development footprint can occur.

**Alternative C: (bottom) Low Level of Change**-Buildable Development and Buildable Circulation planning zones show where less development footprint can occur.

### Legend

- Planning Boundary
- Planning Zones**
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

# Tower Junction Location

Alternatives Comparison:  
Acceptable Limits of Change

Figure 10b

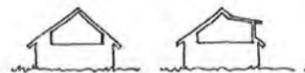
## 2 Planning Prescriptions

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
Buildable Development Zone	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 9,000 s.f. net gain for buildings* Not to exceed 35,400 s.f. net gain for parking*	Concession visitor facilities.	Not to exceed 2,000 s.f. net gain for buildings* Not to exceed 15,000 s.f. net gain for parking*	Concession visitor facilities.
				NPS Visitor Services.		NPS Visitor Services.
Buildable Circulation Zone	Not defined in this alternative	Evaluated on case-by-case basis	Same footprint; however alignment shifts	Circulation pertaining to Grand Loop Road.	No change	Circulation pertaining to Grand Loop Road.
Buildable Natural Zone	Not defined in this alternative	Evaluated on case-by-case basis	Replacement with expansion	Underground utilities.	Replacement in kind	Underground utilities.
				Trails		Trails

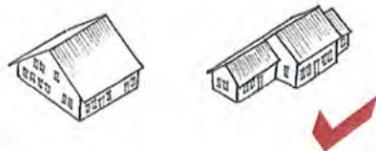
\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.

## 3 Design Standards

Design standards are applied to both Alternative B and C.



Minimize mass in upper levels of buildings; avoid large, single structures to lessen visibility.



**Materials**

Character and appearance of materials compatible with rustic architecture that blends with natural surroundings; wood, native stone and log detailing utilized. Avoid reflective finishes that may be visible across the valley, especially roofing material.

**Color**

Compatible with the natural setting, use sustainable finishes that minimize visibility in open locations.

**Scale, size**

Height and scale similar to surrounding structures; new construction not to exceed 2,000 s.f., 1 1/2 stories for individual buildings (smaller than the Roosevelt Lodge but similar to the Tower Ranger Station and the Corral Hay Barn.) Integrate with natural landforms. Avoid the use of large, single structures to reduce visibility.

**Roof design**

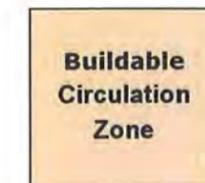
Design, pitch and composition appropriate for area snow loads.

**Layout**

Utilize buildings and landforms to screen parking. Signs, vegetation, and night lighting follow existing approved park guidelines. Minimize night lighting locations.

**Setting**

Maintain natural landforms, enhance vegetative screening.



**Materials**

Compatible with Grand Loop Road Historic District.

**Scale, size**

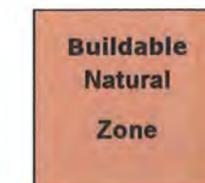
Minimize visibility of parking areas, enhance sight distances and pedestrian crossings.

**Layout**

Retain curvilinear alignment.

**Setting**

Utilize 30' vegetated berms to screen between corral parking and roads.



**Materials**

Colors for utility boxes blend with natural surroundings.

**Layout**

Ground disturbances follow existing park guidelines for revegetation.





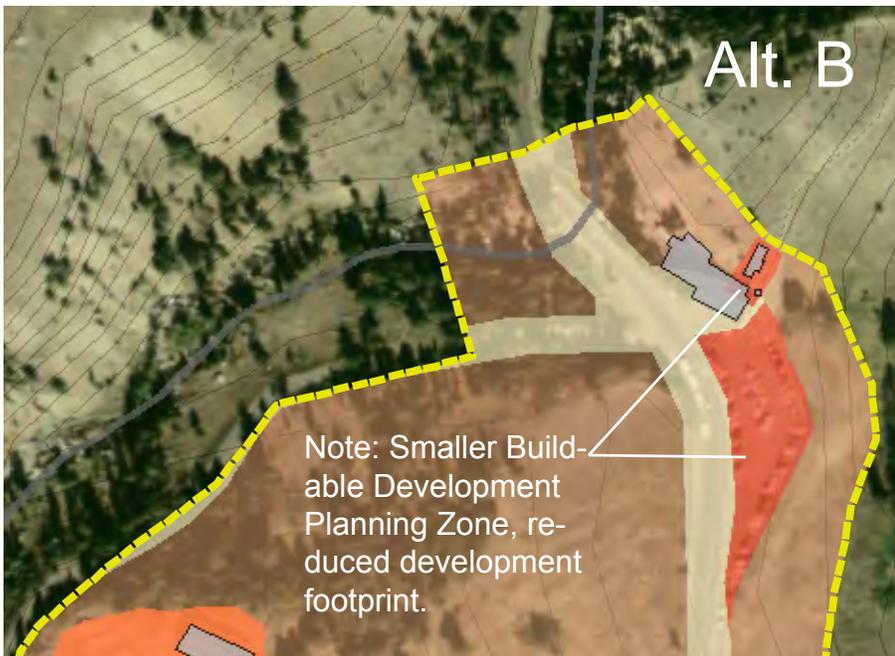
# Tower Fall Trailhead Location

# 1 Planning Zones

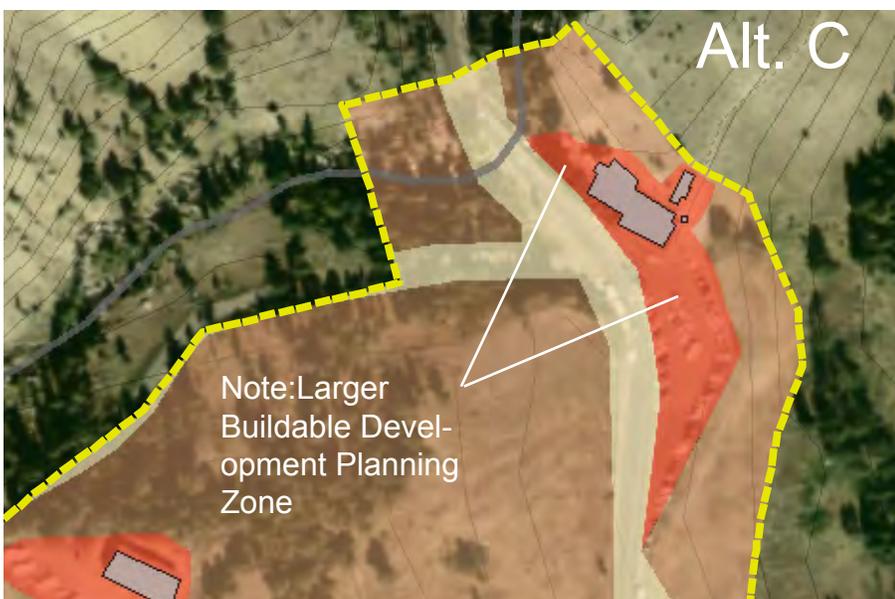
## Figure 11a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis.



**Alternative B: (middle) Medium Level of Change**-Buildable Development planning zone shows where a reduced development footprint can occur.



**Alternative C: (bottom) Low Level of Change**-Buildable Development planning zone shows where more development footprint, similar to existing, can occur.

### Legend

- Planning Boundary
- Administrative
- Historic
- Development
- Natural
- Circulation

Figure 11b

Tower Fall Trailhead Location  
 Alternatives Comparison:  
 Acceptable Limits of Change

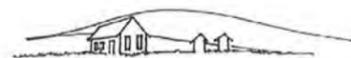
## 2 Planning Prescriptions

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
<b>Buildable Development Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Net reduction ranges by 5,000-10,000 s.f.; maximum 10,000 s.f. net reduction* Reduce parking by 6,000 s.f.*	NPS visitor facilities and parking. Concession operational facilities relating to retail.	Net reduction ranges from current 10,000 s.f. to 4,999 s.f.* Not to exceed 16,000 s.f. net gain for parking.*	NPS visitor facilities and parking. Concession visitor facilities relating to retail.
<b>Buildable Circulation Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Grand Loop Road	NPS visitor road maintained.	Grand Loop Road	NPS visitor roads maintained.
<b>Buildable Natural Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Reduce utilities.	Underground utilities.	Existing utilities remain. No additional capacity.	Underground utilities.
				Trails		Trails

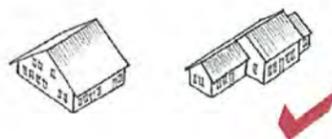
\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.

## 3 Design Standards

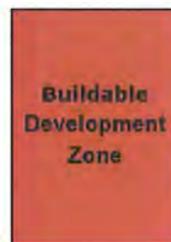
Design standards are applied to both Alternative B and C.



Clusters of trees and landforms help visually blend buildings with the natural setting. Trees also screen buildings from the road.



Break up mass of building.



**Materials**

Character and appearance of materials compatible with rustic architecture that blends with natural surroundings; wood, native stone and log detailing utilized. Avoid reflective finishes that may be visible across the valley, especially roofing material. Use sustainable, fire resistant design methods, materials and technology where possible.

**Color**

Compatible with the natural setting, use sustainable finishes that minimize visibility in open locations.

**Scale, size**

Height and scale similar to surrounding structures; new construction not to exceed 2,000 s.f., 1 1/2 stories for individual buildings (smaller than the Roosevelt Lodge but similar to the Tower Ranger Station and the Corral Hay Barn.) Integrate with natural landforms. Avoid the use of large, single structures to reduce visibility.

**Roof design**

Design, pitch and composition appropriate for area snow loads. Use fire resistant, non-reflective roofing materials.

**Layout**

Utilize buildings and landforms to screen parking. Signs, vegetation, and night lighting follow existing approved park guidelines. Minimize night lighting locations.

**Setting**

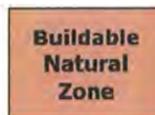
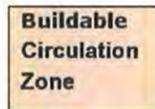
Maintain natural landforms, enhance vegetative screening.

**Layout**

Enhance sight distances, pedestrian safety and crossings; separate road from parking with vegetation.

**Setting**

Compatible with Grand Loop Road Historic District. Retain curvilinear alignment



**Materials**

Colors blend with vegetation for utility boxes.  
 Ground disturbances follow park standards for revegetation. Consolidate utility corridors.

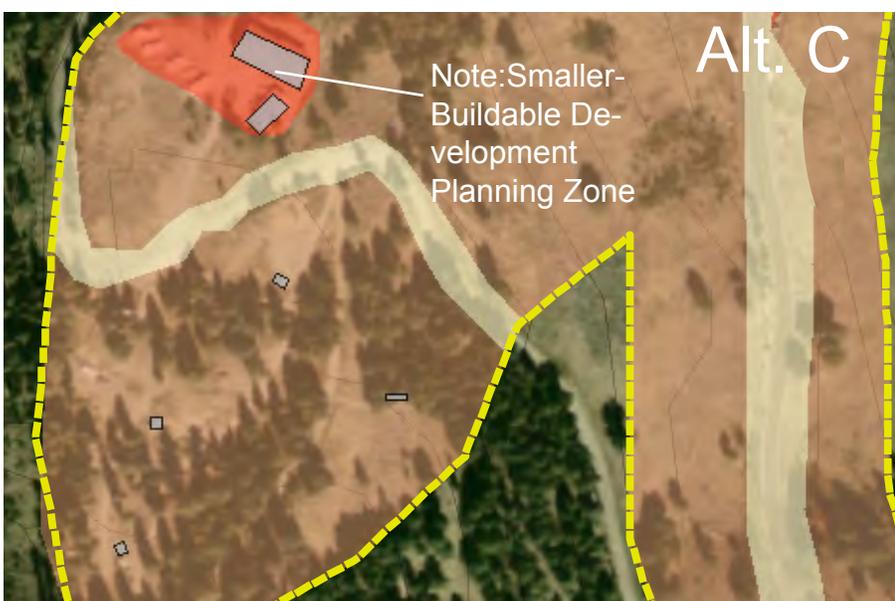
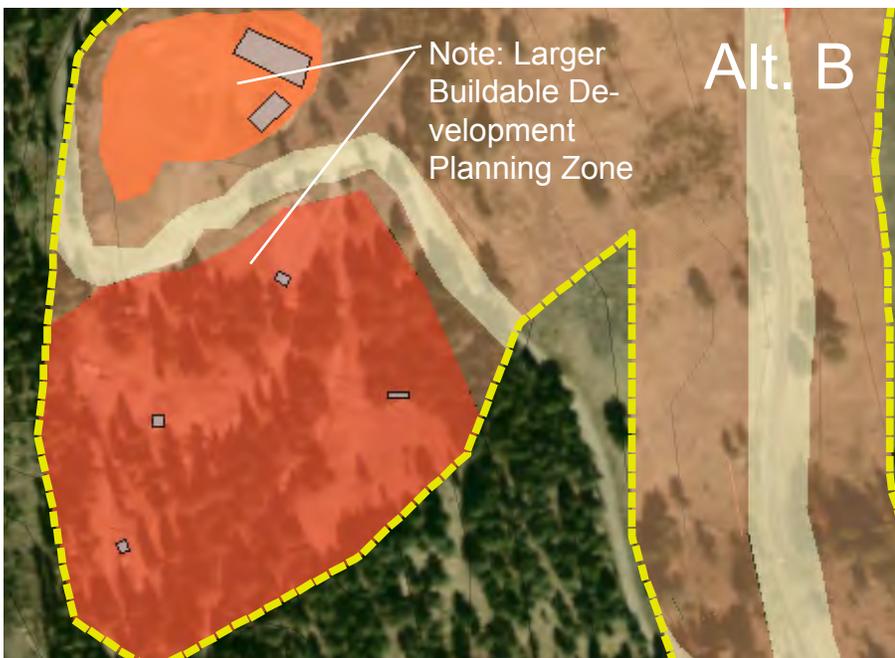




# Tower Fall Campground Location

# Planning Zones

## Figure 12a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis.

**Alternative B: (middle) Medium Level of Change**-Buildable Development planning zone shows where a larger development footprint can occur.

**Alternative C: (bottom) Low Level of Change**-Buildable Development planning zone shows where less development footprint can occur.

### Legend

-  Planning Boundary
- Planning Zones**
-  Administrative
-  Historic
-  Development
-  Natural
-  Circulation

Figure 12b

Tower Fall Campground Location  
 Alternatives Comparison:  
 Acceptable Limits of Change

## 2 Planning Prescriptions

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
<b>Buildable Development Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Not to exceed 1,300 s.f. net gain for buildings * Not to exceed current s.f. for unpaved parking.	NPS visitor facilities. Concession operational facilities relating to retail.	Not to exceed 200 s.f. net gain for buildings* Not to exceed current s.f. for unpaved parking.	NPS visitor facilities. Concession operational facilities relating to retail.
<b>Buildable Circulation Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Replacement with expansion.	Circulation.	Replacement in kind.	Circulation.
<b>Buildable Natural Zone</b>	Not defined in this alternative	Evaluated on case-by-case basis	Replacement with expansion.	Underground utilities.	Replacement in kind.	Underground utilities.
				Boardwalks, trails		Boardwalks, trails.

\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with

## 3 Design Standards

Design standards are applied to both Alternative B and C.



Clusters of trees and landforms help visually blend buildings with the natural setting. Trees also screen buildings from the road.

<b>Buildable Development Zone</b>	<b>Materials</b>	Character and appearance of materials blends with natural surroundings; rustic campground character with wood, native stone and log detailing utilized. Log curbing, log screening fences. Use sustainable, fire resistant design methods, materials and technology where possible.
	<b>Scale, size</b>	Compatible with the natural setting, use sustainable finishes that minimize visibility in open locations, such as dark brown stain.
	<b>Roof design</b>	Height and scale similar to or smaller than existing structures; new construction not to exceed 1,200 s.f., 1 story (size of existing structure.) Integrate structures with natural landforms. Use non-reflective, fire resistant roofing materials.
	<b>Layout</b>	Design, pitch and composition appropriate for area snow loads.
	<b>Setting</b>	Utilize vegetation and landforms to screen parking and administrative area/campground. Signs, vegetation, and night lighting follow existing approved park guidelines. Maintain natural landforms, enhance vegetative screening. Separate and screen administrative structures from campground.
<b>Buildable Circulation Zone</b>	<b>Layout</b>	Enhance sight distances, pedestrian safety and crossings; separate road from with vegetation.
	<b>Setting</b>	Retain curvilinear alignment.
<b>Buildable Natural Zone</b>	<b>Materials</b>	Colors blend with vegetation for utility boxes.
	<b>Layout</b>	Ground disturbances follow park standards for revegetation. Consolidate utility corridors.



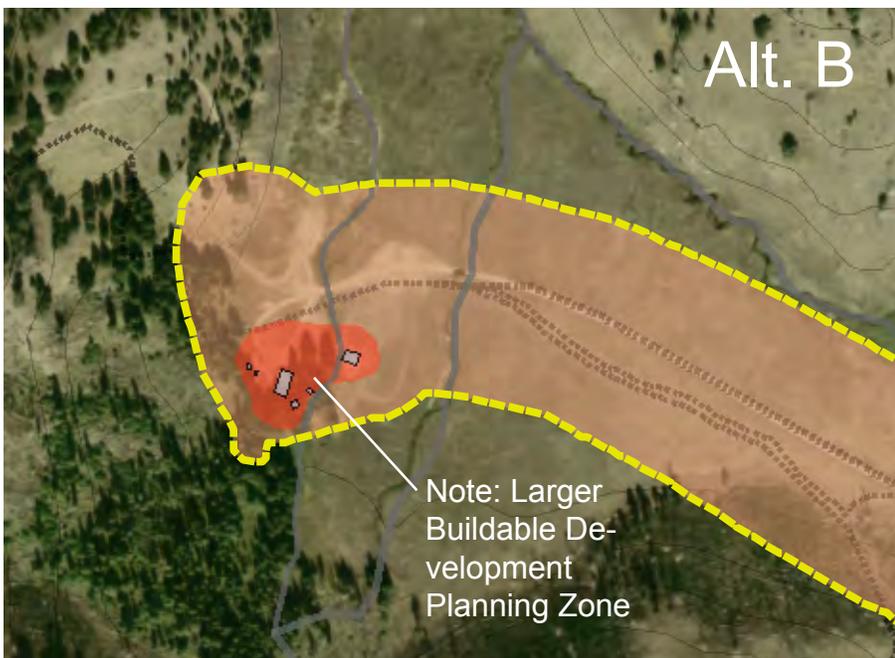


# Yancey's Hole Location

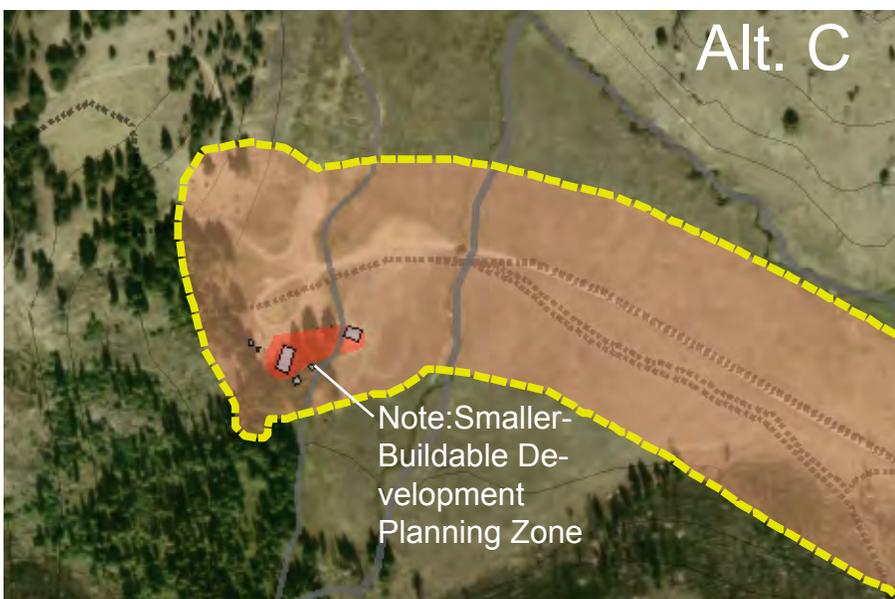
# 1 Planning Zones Figure 13a



**Alternative A: (top) No Action**, no plan-change is determined on a case by case basis.



**Alternative B: (middle) Medium Level of Change**-Buildable Development planning zone shows where a larger development footprint can occur.



**Alternative C: (bottom) Low Level of Change**-Buildable Development planning zone shows where less development footprint can occur.

- Legend**
- Planning Boundary
  - Administrative
  - Historic
  - Development
  - Natural
  - Circulation

Yancey's Hole Location  
 Alternatives Comparison:  
 Acceptable Limits of Change

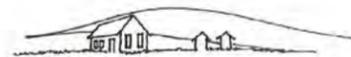
## 2 Planning Prescriptions

Zone	Alternative A No action		Alternative B Medium Level of Change		Alternative C Low Level of Change	
	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions	Maximum Change in Development Footprint	Primary Functions
<b>Buildable Development Zone</b>	Not defined for this alternative	Evaluated on case-by-case basis	Not to exceed 125 s.f. net gain for buildings* Not to exceed current s.f. of unpaved parking.	Concession visitor facilities.	Replacement in kind. Not to exceed current s.f. of unpaved parking.	Concession visitor facilities.
<b>Buildable Natural Zone</b>	Not defined for this alternative	Evaluated on case-by-case basis	Replacement with expansion.	Boardwalks, trails.	Replacement in kind.	Boardwalks, trails.

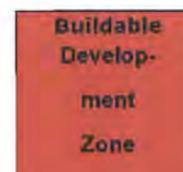
\*NOTE: This Plan/EA provides for reduction, replacement and new development footprint. Changes to historic properties require compliance with Section 106 of NHPA. Changes to floodplains, wetlands and other waters of the U.S. require compliance with law and policy.

## 3 Design Standards

Design standards are applied to both Alternative B and C.



Clusters of trees minimize the visibility of structures, provide shade within the natural setting.



**Materials** Materials reflect character of location. Sustainable, rustic design with stone and wood accents. Minimize impact by using sustainable materials, which reduce replacement and support wildlife management practices. Access road remains unpaved. Avoid reflective materials that would be visible from the valley. Use sustainable, fire resistant design methods, materials and technology where possible.

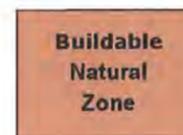
**Color** Compatible with rustic setting; blend with the surroundings, especially in visible locations.

**Scale, size** New buildings are lower than the height of the average tree canopy; similar to existing heights. Access road width maintained.

**Roof design** Compatible design, pitch and composition to blend into surrounding landscape. Use non-reflective, fire resistant materials.

**Layout** Minimize impacts to surrounding sensitive resources through design. Excavation is minimized. Horse hitching is consolidated and confined to areas that avoid streams and are separated from visitor use areas. Night lighting, vegetation, and signs follow existing approved park guidelines.

**Setting** Minimize visibility from adjacent Grand Loop Road and surrounding trails.



**Materials** Materials reflect character of primitive landscape.

**Layout** Consolidate social trails, access, and activities. Disturbance to surrounding resources should be minimized. Minimize excavation. Delineate unpaved parking so that it remains consolidated.



### Table 3: Comparison of Development Footprint and Possible Projects for Each Alternative

Possible projects and development footprints are proposed for each of the eight locations under this plan. Table 3 compares the square footage of development footprint for each alternative. It also compares the possible projects that may be accommodated within that footprint for each of the eight locations in the Tower-Roosevelt area. Development footprint and possible projects are described in Chapters 1 and 2. Existing building footprints that may serve as examples include: the front (visible) portion of the existing Roosevelt Lodge is 2,000 s.f. and the existing service station (including roof over pumps) is 3,100 s.f. The current total development footprint for buildings at Roosevelt Lodge is 62,967 s.f. for buildings and 31,392 s.f. for paved parking. At the Tower Junction location, the current total development footprint is 3,391 s.f. for buildings and 32,301 s.f. for paved parking.

	<b>Alternative A: No Action</b>	<b>Alternative B: Medium Level of Change</b>	<b>Alternative C: Low Level of Change</b>
<b>Location</b>	<b>Development Footprint and Possible Projects</b>	<b>Development Footprint and Possible Projects</b>	<b>Development Footprint and Possible Projects</b>
<b>Tower Junction</b>	Evaluated on a case-by-case basis	Not to exceed 9,000 square feet net gain in additional building footprint and 35,400 net gain in additional square feet of additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct new commercial service building</li> <li>• Remodel service station building</li> <li>• Construct new public restrooms</li> <li>• Improve parking for 85 autos and 8 oversized vehicles</li> <li>• Re-align the Grand Loop Road</li> <li>• Construct visitor contact station</li> </ul>	Not to exceed 2,000 square feet net gain in additional building footprint and 15,000 square feet net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct new commercial service building</li> <li>• Remove service station building—fuel service only</li> <li>• Construct new public restrooms</li> <li>• Improve parking for 60 autos and 4 oversized vehicle spaces</li> <li>• No change to Grand Loop Road</li> </ul>
<b>Tower Ranger Station</b>	Evaluated on a case-by-case basis	Not to exceed 1,200 square feet net gain in additional building footprint and 2,750 square feet net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Replace existing backcountry office</li> <li>• Convert ranger station (residence) to visitor contact station</li> <li>• Add visitor parking</li> </ul>	Not to exceed 500 square feet net gain in additional building footprint and no net gain in parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Expand existing backcountry office</li> </ul>
<b>Roosevelt Lodge</b>	Evaluated on a case-by-case basis	Not to exceed 7,200 square feet net gain in additional building footprint and 10,000 square feet net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct employee restrooms and shower house</li> <li>• Improve Roosevelt Lodge parking.</li> <li>• Construct more cabins</li> </ul>	Not to exceed 650 square feet net gain in additional building footprint and no net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct Roosevelt employee restrooms and shower house</li> <li>• Improve Roosevelt Lodge parking.</li> </ul>
<b>Roosevelt Corrals</b>	Evaluated on a case-by-case basis	Not to exceed 2,000 square feet net gain in additional building footprint and no net gain in parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Replace saddle barn</li> <li>• Construct shade shelter</li> <li>• Replace hay barn</li> </ul>	Not to exceed 1,200 square feet net gain in additional building footprint and no net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Replace saddle barn</li> <li>• Construct shade shelter</li> </ul>
<b>Tower Administrative</b>	Evaluated on a case-by-case basis	Not to exceed 5,400 square feet net gain in additional building footprint and no net gain in parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct employee housing</li> <li>• Construct emergency services building</li> </ul>	Not to exceed 3,500 square feet net gain in additional building footprint and no net gain in additional parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Construct employee housing (includes replacement housing for ranger station residence)</li> <li>• Construct emergency service buildings</li> </ul>
<b>Yancey’s Hole</b>	Evaluated on a case-by-case basis	Not to exceed 125 square feet net gain in additional buildings footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Replace dining shelter</li> <li>• Modify serving shelter</li> <li>• Install vault toilet</li> </ul>	No change in development footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Replace dining shelter</li> </ul>
<b>Tower Fall Trailhead</b>	Evaluated on a case-by-case basis	Net reduction in existing building footprint of 5,000 to 10,000 square feet and net reduction in parking footprint of 6,000 square feet. Possible projects might include: <ul style="list-style-type: none"> <li>• Remove the Tower Fall General Store</li> <li>• Reduce the Tower Fall parking and trailhead</li> </ul>	Net reduction in existing building footprint by zero to 4,999 square feet, 16,000 square feet net gain in additional parking. Possible projects might include: <ul style="list-style-type: none"> <li>• Reduction of the Tower Fall General Store</li> <li>• Improve the Tower-Fall parking</li> </ul>
<b>Tower Fall Camp-ground</b>	Evaluated on a case-by-case basis	Not to exceed 1,300 square feet net gain in additional building footprint and no net gain in parking footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Install vault toilet in campground</li> <li>• Replace housing in dormitory area</li> </ul>	Not to exceed 200 square feet net gain in building footprint. Possible projects might include: <ul style="list-style-type: none"> <li>• Install vault toilet in campground</li> </ul>

\*\*NOTE: This Plan/EA provides for the replacement of existing development footprint in addition to new development footprint. Changes to historic properties require compliance with Section 106 of the National Historic Preservation Act.



## TABLE 1: ENVIRONMENTAL IMPACTS SUMMARY BY ALTERNATIVE

Table 1 summarizes the anticipated environmental impacts for alternatives A, B, and C. Only those impacts that have been carried forward for further analysis are included in this table. Chapter 4, Environmental Consequences, provides a more detailed analysis of these impacts.

Impact Topic	Alternative A (no action)	Alternative B	Alternative C
<b>Natural Resources</b>			
Geologic, Paleontological, and Soils Resources	Long-term moderate adverse impacts to geologic, paleontological, and soils resources.	Long-term moderate adverse impacts to geologic, paleontological, and soils resources.	Long-term minor adverse impacts to geologic, paleontological, and soils resources.
Vegetation, including Rare Plants	Long-term moderate adverse impacts to vegetation and rare plants.	Short and long-term minor to moderate adverse impacts to vegetation and rare plants.	Short and long-term minor adverse impacts to vegetation and rare plants.
Floodplains and Wetlands	Short and long-term minor adverse impacts to floodplains and wetlands.	Short-term minor and long-term minor adverse impacts to floodplains and wetlands.	Short term minor and long-term negligible to minor adverse impacts to floodplains and wetlands.
Wildlife	Short and long-term minor to moderate adverse impacts to wildlife.	Short and long-term minor adverse impacts to wildlife.	Short and long-term minor adverse impacts to wildlife.
Threatened and Endangered Species	Long-term minor impacts (may affect, but is not likely to adversely affect) to Canada lynx or gray wolves.	Short and long-term minor impacts (may affect, but is not likely to adversely affect) to Canada lynx or gray wolves.	Short and long-term negligible to minor impacts (may affect, but is not likely to adversely affect) to Canada lynx or gray wolves.

Impact Topic	Alternative A (no action)	Alternative B	Alternative C
Soundscapes	Short and long-term minor adverse impacts to natural soundscapes.	Short and long-term minor adverse and beneficial impacts to natural soundscapes.	Short and long-term, negligible to minor adverse and beneficial impacts to natural soundscapes.
<b>Cultural Resources</b>			
Archeological Resources	Long-term moderate adverse impacts to archeological resources with “adverse affect” for Section 106.	Long-term moderate adverse impacts to archeological resources with “adverse affect” for Section 106.	Long-term negligible to minor adverse impacts to archeological resources with “no adverse affect” for Section 106.
Historic Resources	Long-term minor adverse impacts to historic resources, with a Section 106 of NHPA determination of “no adverse effect”.	Long-term minor adverse impacts to historic resources, with a Section 106 of NHPA determination of “no adverse effect”. Possible moderate adverse impacts to Mission 66 buildings if found eligible. Mitigation would result in “no adverse effect” for Section 106 of NHPA.	Long-term negligible to minor adverse impacts to historic resources, with a Section 106 of NHPA determination of “no adverse effect”. Possible moderate adverse impacts to Mission 66 buildings if found eligible. Mitigation would result in “no adverse effect” for Section 106 of NHPA.
Cultural Landscapes	Long-term, minor to moderate adverse impacts to cultural landscapes; with a Section 106 of NHPA determination of “adverse effect”.	Long-term minor adverse and beneficial impacts to cultural landscapes; with a Section 106 of NHPA determination of “no adverse effect”.	Long-term negligible adverse and minor beneficial impacts to cultural landscapes; with a Section 106 of NHPA determination of “no adverse effect”.
<b>Health and Human Safety</b>	Short and long-term moderate adverse and negligible beneficial impacts to human health and safety	Short and long-term moderate adverse and moderate beneficial impacts to human health and safety	Short and long-term minor adverse and moderate beneficial impacts to human health and safety

Impact Topic	Alternative A (no action)	Alternative B	Alternative C
<b>Visual Quality, including Lightscapes</b>	Short and long-term moderate adverse impacts to visual quality. Long-term minor adverse impacts to the night sky.	Short and long-term moderate adverse and minor beneficial impacts to visual quality. Long-term minor adverse and beneficial impacts to the night sky.	Long-term minor adverse and beneficial impacts to visual quality. Long-term minor adverse and beneficial impacts to the night sky.
<b>Visitor Use and Experience</b>	Long-term minor to moderate adverse impacts to visitor use and experience.	Long-term moderate adverse impacts and moderate beneficial impacts to visitor use and experience.	Long-term minor adverse and minor beneficial impacts to visitor use and experience.
<b>Park Operations</b>	Long-term minor to moderate adverse impacts and minor adverse impact to park operations.	Short and long-term moderate adverse impacts and moderate beneficial impacts to park operations.	Short and long-term minor, adverse and minor beneficial impacts to park operations.

## TABLE 2: SUCCESS IN MEETING TRCP/EA OBJECTIVES

This table compares each alternative's success in meeting the TRCP/EA objectives listed in Chapter 1.

Objective	Alternative A (no action)	Alternative B	Alternative C
Ensure that the desired conditions for natural, cultural and visual resources and values, and visitor experience are defined and achieved.	Alternative A does not adopt desired conditions for natural and cultural resources and values, and visitor experience.  Alternative A does not meet this objective.	Alternative B adopts the desired conditions for natural and cultural resources, values, and visitor experience, which are benchmarks for park resources and visitor experience that should be achieved while considering changes to the built environment.  Alternative B meets this objective.	Alternative C adopts the desired conditions for natural and cultural resources and values, and visitor experience, which are benchmarks for park resources and visitor experience that should be achieved while considering changes to the built environment.  Alternative C meets this objective.
Preserve, protect, and improve park resources and values and enhance visitor experiences by guiding the location, function, size, and appearance of visitor services, facilities, and infrastructure.	Alternative A would not guide the location, function, size, and appearance of visitor services, facilities, and infrastructure. The evaluation of future project proposals would not have the benefit from guidance that has considered protecting park resources and values and enhance visitor experiences. Alternative A does not meet this objective.	Alternative B would guide the location, function, size, and appearance of visitor services, facilities, and infrastructure. The evaluation of future project proposals would benefit from guidance that has considered protecting park resources and values and enhance visitor experiences.  Alternative B meets this objective.	Alternative C would guide the location, function, size, and appearance of visitor services, facilities, and infrastructure. The evaluation of future project proposals would benefit from guidance that has considered protecting park resources and values and enhance visitor experiences.  Alternative C meets this objective.
Provide resource	Alternative A would	Alternative B would include	Alternative C would include

Objective	Alternative A (no action)	Alternative B	Alternative C
<p>information in a single document to better assess possible cumulative impacts for proposed and future projects.</p>	<p>benefit from the resource information gathered during the comprehensive planning process. However, it would not specifically present it in a single document or assess the cumulative impacts for proposed future actions since it addresses projects on a case-by-case basis.</p> <p>Alternative A does not meet this objective.</p>	<p>the resource information within the plan document and utilize it to assess the cumulative impacts of the buildable zones, development footprints, functions, and design standards that restrict future projects.</p> <p>Alternative B meets this objective.</p>	<p>the resource information within the plan document and utilize it to assess the cumulative impacts of the buildable zones, development footprints, functions, and design standards that restrict future projects.</p> <p>Alternative C meets this objective.</p>
<p>Use sustainable designs, methods, building practices, and technologies to the extent possible.</p>	<p>There are no guidelines or standards for sustainable design in Alternative A.</p> <p>Alternative A does not meet this objective.</p>	<p>The design standards, common to both action alternatives B and C, require sustainable methods, practices and technologies to the extent possible.</p> <p>Alternative B meets this objective</p>	<p>The design standards, common to both action alternatives B and C, require sustainable methods, practices and technologies to the extent possible.</p> <p>Alternative B meets this objective</p>
<p>Identify opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions for resources and visitor experience; reinvesting resources to improve the condition of the park's most important assets.</p>	<p>Alternative A does not identify opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions for resources and visitor experience; reinvesting resources to improve the condition of the park's most important assets.</p> <p>Alternative B meets this</p>	<p>Alternative B identifies opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions for resources and visitor experience; reinvesting resources to improve the condition of the park's most important assets.</p> <p>Alternative B meets this objective.</p>	<p>Alternative C identifies opportunities to reduce buildings, roads, trails, utility systems, and other facilities that do not support the desired conditions for resources and visitor experience; reinvesting resources to improve the condition of the park's most important assets.</p> <p>Alternative C meets this objective.</p>

Objective	Alternative A (no action)	Alternative B	Alternative C
	objective.		
Guide decisions to provide high quality visitor services; concentrating efforts on core services at core locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.	Alternative A does not guide decisions to provide high quality visitor services; concentrating efforts on core services at core locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.  Alternative B meets this objective.	Alternative B guides decisions to provide high quality visitor services; concentrating efforts on core services at core locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.  Alternative B meets this objective.	Alternative C guides decisions to provide high quality visitor services; concentrating efforts on core services at core locations, during peak visitation periods, while maintaining essential services throughout the Tower-Roosevelt area.  Alternative C meets this objective.
Develop a consistent and timely process to evaluate project proposals to determine their appropriateness based on acceptable levels for change.	Alternative A would not establish a timely process to evaluate project proposals based on Buildable Planning Zones, Planning Prescriptions and Design Standards to determine their appropriateness based on acceptable levels for change.  Alternative A does not meet this objective.	Alternative B would establish a timely process to evaluate project proposals based on Buildable Planning Zones, Planning Prescriptions and Design Standards to determine their appropriateness based on acceptable levels for change.  Alternative B meets this objective.	Alternative C would establish a timely process to evaluate project proposals based on Buildable Planning Zones, Planning Prescriptions and Design Standards to determine their appropriateness based on acceptable levels for change.  Alternative C meets this objective.

# Chapter 3: AFFECTED ENVIRONMENT

## NATURAL RESOURCES

All natural resource survey maps are referenced in Appendix B.

### Geologic, Paleontological, and Soils Resources

**Terminology:**

<b>Loamy sand-</b> a mixture of sand, silt, clay and organic matter. There is more sand in a sandy loam than loamy sand. Water flows faster through loamy sand than sandy loam or loam.	<b>Alluvial fan-</b> an apron-like landform found near the bottom of hill slopes. Sediments in alluvial fans change from coarse texture near their source to fine away from the source of water, mud, and rock.
<b>Rhyolite-</b> a light-colored, volcanic rock with silica content greater than 68 eight percent.	<b>Andesite-</b> a dark-colored, volcanic rock with silica content greater than 53 percent weight and less than 68 percent weight.
<b>Paleontology-</b> the study of past or ancient life.	<b>Basalt lava flow</b> – a layer of basalt (hard, dense volcanic rock) rock.
<b>Hydrothermal-</b> an adjective that literally means “water” and “heat”. So in this case hot water features.	<b>Fault-</b> a break in a rock or the earth’s crust along which movement has occurred.
<b>Mudpots-</b> a hydrothermal feature with water and mud.	<b>Fumarole-</b> a hole or vent from which volcanic fumes or vapors issue.
<b>Seep-</b> a place where water or other fluids ooze from the earth.	<b>Glaciation-</b> an erosion deposition process resulting from movement of glaciers across the landscape.
<b>Earth Tremors-</b> small movements in the earth’s crust caused by easing of subsurface strains. Same as earth quakes but not as violent.	<b>Kame-</b> a landform such as a mound, knob, or irregular ridge. Ice and melting ice moves and deposits sediments to form kames.
<b>Tuff-</b> Rocks composed of volcanic ash – often a chaotic mixture of ash (fine-grained glass), pumice lumps, crystals and rock fragments.	<b>Sandy loam-</b> a mixture of sand, silt, clay and organic matter. There is more sand in a sandy loam than a loam.
<b>Vent-</b> an opening for the escape of liquid, gas or vapor.	<b>Seismic belt-</b> area subject to earthquakes or earth tremors.

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

Volcanic rocks associated with the 50 million year old Absaroka volcanoes and the Yellowstone volcano crop out immediately south of Tower Fall (See Geologic Map, Appendix B). Within these 50 million year old volcanic rocks are world-class fossils. Paleontological resources (fossils and their associated data) are evidence of past life. They are the basis for our understanding of the history of life on Earth, and are an integral part of our planet's biodiversity. These areas are known in the international scientific community as outstanding windows to the life of the past. The 50 million old extinct volcano, Mount Washburn (south of the Tower-Roosevelt area), as well as volcanic rocks associated with the 2.1 million, 1.3 million, and 640,000 year eruptions of the Yellowstone volcano can be viewed in this area.

From Tower Junction to Tower Fall, volcanic rocks, basalt lava flows, and the hydrothermally altered areas including Calcite Springs can be seen. Hydrothermal areas and small seeps evident in this area follow a zone of northwest-trending faults and fractures that roughly parallel the Grand Loop Road and the Yellowstone River. Hydrothermal features located in the general vicinity of the road corridor at Calcite Springs are created by the movement of hot fluids and gases along fractures and faults that emerge at or near the bottom of the canyon of the Yellowstone River. Hydrothermal features present in the Yellowstone River area include fumaroles and springs that are located below road grade, east of the road along the west river bank. Hydrothermal activity and alteration also occur along the road corridor and throughout the area, but they are small and show little activity.

Tower Fall plunges 132 feet over a cliff; the tall spires looming over the fall gave Tower its name. Impermeable lake sediments and hazardous gases are geologic concerns at the Tower Fall Trailhead location. Impermeable lake sediments provide poor structural stability resulting in small slumps and potential landslides. Poor structural stability due to these sediments can be viewed near the Tower Store and along the trail to Tower Fall. Surface runoff from asphalt, groundwater from existing septic systems and erosion by Tower Creek possible contribute to the instability of the hillside and erosion of the trail to the base of the Tower Fall. Additionally visitors who leave the trail may be at risk from high concentrations of hazardous gases from thermal vents near the Yellowstone River. These gases can accumulate in topographically low areas because they are heavier than air (*Geologic Concerns at Roosevelt, Tower Fall and the Lamar River Bridge* - Jaworowski and Heasler 2006) (See Geologic Map, Appendix B).

Visitors traveling from Tower Junction toward Tower Fall are warned not to stop under Overhanging Cliff because rocks may fall from the fractured basalt cliffs above the road edge. The uneven road at Overhanging Cliff is slumping and causes maintenance and engineering challenges. This is due to the road being built on an active landslide that is being eroded by the Yellowstone River.

Soils at the Tower Junction location were developed on alluvial fans or kames. The rock fragments in the soil are andesite and rhyolite tuff. In general, soil texture is loam at the surface, with a subsoil of sandy loam and loamy sand. Gravels, boulders and cobbles are present in the soil profiles. Soils have a moderate erosion potential. There are gentle slopes to the north and depth to bedrock is greater than 10 feet. An old stream channel runs through the Tower Junction location. Sediments deposited by ice, water, and gravity overlie the various volcanic rocks at the Roosevelt Lodge location. Roosevelt Lodge and many cabins are on old alluvial gravels deposited by torrential floods along Lost Creek. Facilities at the Roosevelt Lodge and the Tower Administrative locations were built the alluvial gravels (less than 10,000

years old). Most of the soils in the developed areas have been altered by human activity. Torrential floods can occur, such as in July 2004 when intense rain triggered debris and mudflows in the northeastern portion of the park and caused flooding in the Tower Administrative location along Lost Creek (See Geologic Map, Appendix B).

U.S. Geological Survey (USGS) geologists mapped outcrops of granitic rocks, volcanic rocks associated with the Yellowstone volcano and 50 million year old fossil-bearing volcanic rocks. Fine-grained sediments and gravels cover the volcanic bedrock at the Yancey's Hole location. Soils are developed on medium and fine-textured sediments with smaller areas of coarse sediments. The area is not prone to mass wasting. At the Tower Fall Campground location, sand and gravel cover the slopes.

## Floodplains, Wetlands and Other Waters of the U.S.

**Floodplain-** the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands and (at a minimum) that area subject to temporary inundation by a regulatory flood.

**Regulatory Floodplain-** the specific floodplain that is subject to regulation by Executive Order 11988 and NPS procedures outlined in Director's Order # 77-2 Floodplain Management and the accompanying Procedural Manual #77-2: Floodplain Management. Depending upon the action proposed, one of three "regulatory floodplains" applies (100-year, 500 year, or Extreme).

Fens are areas fed by a constant supply of surface or ground water that maintains permanently saturated soils and, over thousands of years, causes thick layers of partially decomposed organic matter to accumulate. The organic soil (peat) is common in many far northern climates, and although fens occupy very little area in Yellowstone, they are an important refuge for plant and animal species that rely on permanently moist environments.

The Tower Junction location is situated on highly permeable alluvial fan deposits at the mouth of the narrow valley of Lost Creek, which drains an area of 4.6 square miles (7.4 square km). Lost Creek is a year-round creek that originates south of Tower Administrative location at Lost Lake (Martin 2006), passes over a waterfall behind the Roosevelt Lodge, flows north past the Tower Administrative and Tower Ranger Station locations, passes through a culvert under the Grand Loop Road, and then flows out onto the sagebrush flats of Pleasant Valley north of the Junction. (See Natural Resource Map, Appendix B Map) The meadows west of the Tower-Roosevelt developed area abound with seeps and springs. Lost Creek's channel has shifted dramatically over the long term, but its present location appears reasonably stable. (Floodplain Analysis Results for the Tower Junction Developed Area (Michael Martin (NPS) 2006).

**Floodplains:** Lost Creek is the primary potential flooding hazard associated with the Roosevelt Lodge and Tower Administrative locations (See Natural Resource Map Appendix B Map). An analysis completed in 2005 by the Water Operations Branch of the NPS Water Resources Division mapped the extent of the regulatory 100-year floodplain and found it to be within the drainage channel. The estimated 100-year flood magnitude for the 4.6 square mile watershed is 163 cubic feet per second (Floodplain Analysis Results for the Tower Junction Developed Area (Michael Martin (NPS) 2006). None of the existing facilities in the Tower-Roosevelt area are located within a regulatory floodplain except for a short stretch of the unimproved wagon road to the Yancy's Hole location and equipment storage area in the south portion of the Tower Administrative location. This conclusion is based on repeated modeling that indicates the Lost Creek channel has sufficient capacity to convey the 100-year flood without being overtopped. The relatively large channel capacity is probably a result of forming under different climatic conditions. Localized precipitation-triggered debris flows in the Tower-Roosevelt area are a main potential geologic concern (See Geologic Hazard Map Appendix B). Debris-rich flows are known to occur in and around Yellowstone National Park and are a concern for development at the toe of steep slopes, including the Roosevelt Lodge and the Tower Administrative locations. Additionally, the steep gradient of the channel could result in high velocity flows.

**Wetlands and other Waters of the U.S.:** An inventory of the Tower-Roosevelt area completed during the summer of 2005 found 26 sites classifiable as wetlands or waters of the U.S. (24.4 out of 225.5 acres surveyed) (See Natural Resource Maps, Appendix B). Each wetland community was classified according to the U. S. Fish and Wildlife Service manual *Classification of Wetlands and Deepwater Habitats of the United States*, commonly referred to as the "Cowardin Classification System." Following this classification system, wetlands and other waters of the U.S. were mapped within the Palustrine and Riverine class.

The Palustrine wetlands within the survey area included forested wetlands (wetlands with 30% or greater tree canopy cover), non-forested meadows, depressions, and riparian wetlands (wetlands adjacent to a stream). Most of these wetlands have standing water for part of the growing season, thus assisting with water storage. One of the wetlands was permanently saturated with water or had standing water all year. In our region, drier sites are more likely to be invaded by non-natives, especially wetlands with a disturbance regime. For example, wetlands around the Tower Junction location have been highly impacted by prior human activities, wildlife, and the horse operations. Due to the past disturbances, these wetlands have many established invasive exotic plant species such as smooth brome, Canada thistle, clover, Kentucky bluegrass, and timothy (Pecha 2005). Fifty-four percent of the wetlands were altered as a result of previous developments, human impacts and road building. In one case, floodplain wetlands were partially buried by a roadbed. A hydrothermally-influenced wetland associated with Nymph Spring is located east of the Roosevelt Corral location. Hydrothermally influenced wetlands are uncommon, especially in this portion of the park.

The wetlands of most significance in the Tower-Roosevelt survey area are the forested wetlands. Forested wetlands provide structural diversity for wildlife and the tree canopy provides cooler shady conditions that sometimes results in a different assemblage of wetland species than might be found in sunnier conditions. The forested wetland near Yancey's Hole location is part of a larger wetland complex that continues beyond the planning boundary. Some of the wetlands outside of the planning boundary appear to be accumulating organic soil and may in the distant future become peatland fens. However, this was not found in the wetlands within the Tower-Roosevelt planning area (Pecha 2005, Anderson 2008).

Waters of the U.S. and riverine wetlands within the planning boundary include Lost Creek, Yancey's Creek, and an unnamed creek. Lost and Yancey's creeks are gravel bottomed perennial streams that flow all year. The unnamed stream originates in a seep and also flows year round. An ephemeral tributary to Lost Creek is also present and carries water during the spring runoff but is dry for much of the year.

## Vegetation and Rare Plants

**Ecotone-** the transition zone between two different plant communities.

**Steppe-** a non forested region dominated by low shrubs and grasses.

**Vegetation:** The vegetation in the Tower-Roosevelt area is a complex mosaic of forest, wetlands, meadows, and sagebrush steppe. Roosevelt Lodge and nearby cabins are nestled in an open mature Douglas-fir (*Pseudotsuga menziesii* var. *glauca*) forest, with trees continuing to the south. Stretching to the north, and east towards the Roosevelt Corral location is an interfingering of small stands of trees including both Douglas-fir and lodgepole pines (*Pinus contorta* var. *latifolia*), meadows, and small shrub areas dominated mostly by black chokecherry (*Prunus virginiana* var. *melanocarpa*). Sagebrush steppe becomes the dominant vegetation type in the vicinity of the Tower Junction location with mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*) as the most conspicuous species. The Tower Ranger Station and Tower Administration locations are also in this complex of vegetation types with the addition of small aspen (*Populus tremuloides*) stands and riparian wetlands immediately adjacent to Lost Creek. The Tower Fall campground location is situated mostly in forest which is dominated by lodgepole pine and the Tower Fall Trailhead location is dominated by Douglas-fir. Meadows are scattered through the forest along with some small wetlands. The Yancey's Hole location is on the ecotone between the meadow/sagebrush steppe in Pleasant Valley and a forested wetland dominated by Engelmann spruce (*Picea engelmannii*).

### Exotic Vegetation

**Noxious weed-** any plant designated by a federal, state, or county government to be injurious to public health, agriculture, recreation, wildlife, or any public or private property.

**Non-native vegetation-** plant species that are not part of the original flora of the park.

**Invasive species-** non-native plant species that are moving into and potentially replacing native vegetation.

At least 218 species of non-native plants are known in Yellowstone National Park (NPS, 2008). Over time noxious weed species have become established in the area that currently include bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), hound's-tongue (*Cynoglossum officinale*), and Dalmatian toadflax (*Linaria dalmatica*). Another noxious species, tall buttercup (*Ranunculus acris*), was recently discovered in the NPS corral in the Tower Administration location along with another non-native species,

water speedwell (*Veronica anagallis-aquatica*). The area also has large and expanding populations of many other invasive non-native species including Loesel's tumbled mustard (*Sisymbrium loeselii*), madwort (*Asperugo procumbens*), European stickseed (*Lappula squarrosa*), pale alyssum (*Alyssum alyssoides*), bulbous bluegrass (*Poa bulbosa*), and blue scorpion-grass (*Myosotis micrantha*), especially in the vicinity of the Roosevelt Corral location and along the horse trails and wagon roads. Long term management concerns in the area include the expansion of both noxious and other established non-native plant species and the establishment of additional non-native species. The presence of the corral operations complicates this problem. Even though stock is being fed certified weed-free products, this certification only prevents the noxious weed species recognized from that particular county from being present. Many non-native species can still be introduced including species that are recognized as noxious by other jurisdictions, or that may in the future be recognized as noxious species.

## Rare Plants

**Inflorescences**—the arrangements of one or more flowers on a floral axis (stem).

Each of the adjacent states of Wyoming, Montana, and Idaho maintain lists of rare plant species or “plant species of concern”. Because the Tower-Roosevelt area is located entirely within Wyoming, the primary document used during the 2005 rare plant survey of the Tower-Roosevelt area was the Wyoming Natural Diversity Database, November 2003, *Wyoming Plant and Animal Species of Concern* list. The Montana and Idaho lists were also consulted.

The rare plant survey within the Tower-Roosevelt survey area yielded two Wyoming species of concern, bristly-stalked sedge (*Carex leptalea*), and Suksdorf's broomrape (*Orobanche ludoviciana* var. *arenosa*) (Whipple, 2006). Areas would be resurveyed for rare plants if the *Wyoming Animal and Plant Species of Concern* list undergoes significant changes.

Bristly-stalked sedge is located in the forested wetland immediately adjacent to the Yancey's Hole location. The population appears to be more extensive further into the wetland to the south but the exact boundaries were not determined in 2005 outside the designated planning boundary. This species is dependent on saturated forested wetlands and may have occurred closer to the cookout area before disturbance in the area. Rattlesnake fern (*Botrychium virginianum*) historically was collected in the forested wetland at the Yancey's Hole location in 1966. This is the only known collection of this species within the park. Rattlesnake fern may persist in the vicinity, though it was not identified in 2005 within the survey area.

Suksdorf's broomrape was found in two sites on the northwest side of Tower Junction location in the sagebrush steppe. One site is on the slopes of a small hill and the other site is in an area that was previously disturbed and is now dominated by mountain big sagebrush. Broomrapes are root parasites that do not flower every year, and the inflorescences do not necessarily appear immediately adjacent to the host species (often mountain big sagebrush), so the area occupied by the broomrape could be more extensive. (Whipple, Jennifer. 2006) Suksdorf's broomrape is a root parasite and mitigation for this species is not possible since the host plants would be destroyed.

## Wildlife

**Ungulate-** animals that are mammals having hooves; for example, bison, elk, bighorn sheep.

Yellowstone has documented 67 species of mammals, more than 300 species of birds, 13 species and subspecies of native fish, five species of nonnative fish, six species of reptiles, and four species of amphibians (Yellowstone Resources and Issues Handbook 2007). Among the 67 species of mammals, there are seven native ungulates and two bear species. The Tower-Roosevelt area is within the habitat and range of the ungulate population of Yellowstone. There are also small mammals and a wide variety of birds.

**Mammals:** Mammals living in and around the Tower-Roosevelt area include bison, elk, moose, bighorn sheep, mule deer, whitetail deer (scarce), pronghorn, black and grizzly bears, cougars, coyotes, bobcats, and small mammals such as Uinta ground squirrels, pocket gophers, and jackrabbits.

**Bison:** The 2008 summer bison population for Yellowstone was approximately 3,000 bison, with 1,500 bison in the Northern Range. Bison are commonly seen in and around the Tower-Roosevelt area. The area serves as both year-round habitat for adult males as well as wintering range for mixed groups (bulls, cows and calves). Blacktail Deer Plateau (west of the Tower-Roosevelt area) is a major wintering range for bison. Movements of bison between winter range areas of Blacktail Deer Plateau and Little America (northeast of the Yellowstone River) and the Lamar Valley occur on either side of the Tower-Roosevelt area.

**Elk:** The northern Yellowstone elk herd is one of the largest free-ranging herds in North America. Habitat in the Tower-Roosevelt area, with mixed forest and grassland, is ideal for elk. Rutting season occurs during September and October, and bulls tend to seek open meadows to be highly visible and maintain their harems (groups of elk cows). The meadows are also used for calving. Population counts show the elk population on the Northern Range, inside and outside the park, has decreased four to nine percent annually since 1994. Predation by wolves and other large carnivores, hunting of elk migrating outside the park, and drought effects are factors contributing to this trend (Barber et al. 2005, Hamlin 2005, Vucetich et al. 2005, White and Garrott 2005).

**Moose:** In the 1970s, an estimated 1,000 moose inhabited the park. It is estimated that less than 500 moose currently live in the park (Yellowstone Resources and Issues Handbook 2007). Moose populations decreased after the fires of 1988 that burned important winter habitat (i.e., mature spruce/fir forests) in the northern portion of the park (Tyers and Irby 1995, Alces 31:35-43). Moose have been seen in the Tower-Roosevelt area, from Floating Island Lake west of Tower to Antelope Creek south of the Tower Fall Trailhead location, but good moose habitat—riparian bottom lands with mature spruce/fir slopes—is not abundant in the area.

**Bighorn Sheep:** A small resident band of ten to twenty bighorn sheep frequent the cliffs east of Calcite Springs across the Yellowstone River and have their lambs there. Both resident and migratory sheep use the area. Typical habitat for Bighorn Sheep is steep rocky cliffs. In the Tower-Roosevelt area, this habitat exists along the Grand Canyon of the Yellowstone River. During the autumn, ewes are observed near the Tower Fall Trailhead location, where they graze and move along the road as they migrate from Mount Washburn to Mount Everts.