BLM

FIRST EDITION

BUREAU OF LAND MANAGEMENT




GUIDELINES FOR A QUALITY BUILT ENVIRONMENT

BLM

Guidelines For A Quality Built Environment

GQBE

First Edition

Prepared for Bureau of Land Management
by Belt Collins

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CHAPTER 1

INTRODUCTION

INTRODUCTION

Grand Staircase-Escalante National Monument, Big Water Visitor Center, Utah

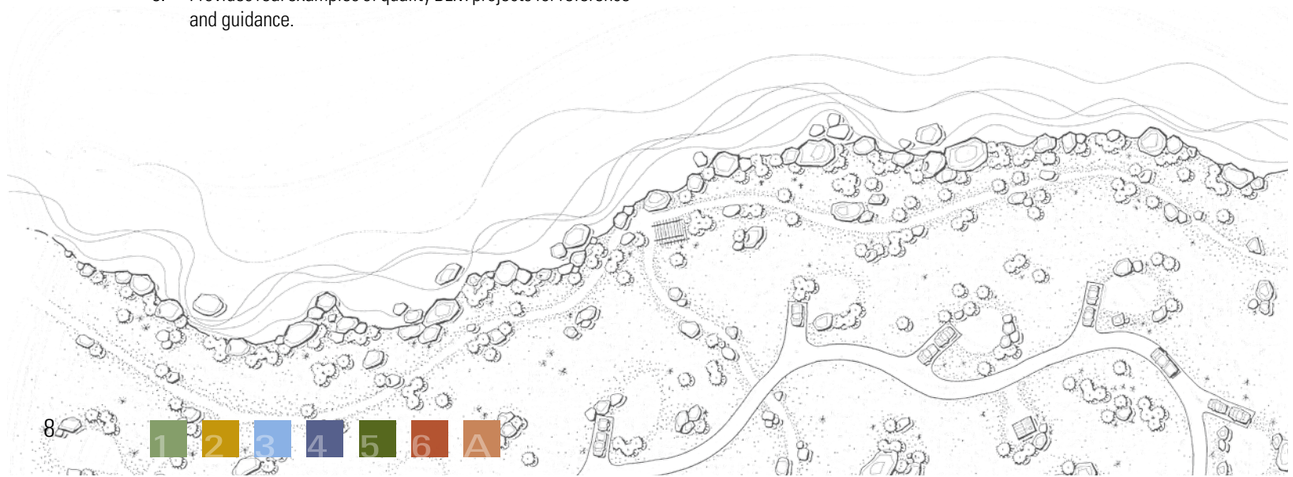
Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many alternatives.

- William A. Foster

The purpose of these guidelines is to help ensure that Bureau of Land Management (BLM) facilities are attractive, functional, and sustainable. To accomplish these objectives, this guidebook:

1. Integrates guidance from related programs, directives, and best management practices.
2. Establishes easy-to use design guidelines for a variety of different facility types.
3. Addresses a diversity of settings that are representative of BLM public lands.
4. Presents a process for planning and design on BLM lands.
5. Provides real examples of quality BLM projects for reference and guidance.

This effort to enhance the built environment affirms BLM's commitment to sustainable facilities that support the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. This guidebook is a valuable resource to assist BLM in creating quality built facilities.



Arctic Interagency Visitor Center, Alaska

GQBE: GUIDELINES FOR A QUALITY BUILT ENVIRONMENT

GUIDELINES

This document establishes a clear planning process for Bureau of Land Management facilities and is intended to be used as a guide during the design process. Use of these guidelines will ensure that all BLM facilities meet the same high standard and that all BLM facilities represent a quality built environment.

The GQBE focuses on design guidelines for facilities that BLM regularly builds. The guidelines are divided into four categories:

- Site
- Recreation Facilities
- Structures & Associated Spaces
- Site Fixtures

The guidelines are intended to provide direction, yet stay fairly broad. They outline a thoughtful approach to planning and design that can be applied to any project regardless of scale or location. This approach allows for the flexibility to develop an appropriate design solution within a variety of settings. It will result in planning and design solutions that are responsive to the unique environmental and cultural circumstances presented by a particular site.

The GQBE does not address authorized land uses of non-BLM facilities (i.e., communication sites, energy developments, etc.). Direction for those types of projects is contained within other agency guidance, although many of the principles conveyed in the guidelines would be applicable. The GQBE does not provide "cookie-cutter" solutions or detail specific instructions such as which materials to use for a given type or project or which family of site furnishings to select. It does, however, address how to make those decisions. Instead of providing specifics, the guidelines detail a planning framework, emphasizing the site planning process, within which all BLM facilities should be designed and constructed.

QUALITY

Quality is difficult to define but easy to recognize. For the purposes of this document, quality is defined as excellence. Quality implies a sincere commitment to attaining the highest practical standard.

With regard to a quality built environment, several attributes must apply. A quality BLM facility is one that is:

- Responsive to its particular place and setting
- Environmentally and culturally sustainable
- Functional and attractive to both staff and visitors
- Universally accessible
- Economically responsible, taking into account long-term costs associated with maintenance
- Beneficial to public health and well-being.

BUILT ENVIRONMENT

The term "built environment" refers to the constructed surroundings that provide the setting for human activities. The built environment is all around us; it is the world that we inhabit every day. It includes the houses and offices where we live and work as well as the outdoor spaces where we relax and play. Our perceptions about the built environment—how it looks, how well it is maintained, whether it feels safe—influence our ability to develop a deep attachment to a particular place and ultimately our desire to preserve and protect it.

The built environment of our public lands includes facilities such as campgrounds, roads, trails, picnic areas, visitor centers, comfort stations, and maintenance yards. This collection of built elements greatly influences how visitors experience public lands and how they regard BLM. Everything that is built conveys a message to the public about the values and mission of BLM and helps to cultivate a long-term relationship between the public and the public lands the agency manages.

WHY ARE THESE GUIDELINES NEEDED?

Over the course of its history, BLM staff and contractors have designed and built many excellent facilities on public lands. Unfortunately, not all facilities can be held up as models of excellence. Deteriorating materials, mismatched site elements, inadequate budgets, and impromptu improvements all contribute to inferior facilities. By providing the necessary resources and tools to both staff and contractors, BLM can improve the quality of design solutions and provide a consistent level of excellence for all BLM facilities. Using these guidelines will not only improve the design and efficiency of BLM facilities, it will also help create a positive impression upon the visiting public.

The GQBE should be used by all involved in the BLM facility development process, whether staff, contractors, or volunteers. It provides guidance not only for new construction, but also for redevelopment and renovation projects.

These guidelines establish a foundation for design and planning by:

- Providing a brief written history of BLM and conveying an understanding of the agency's design heritage
- Instilling a sense of pride and understanding of the history and future of BLM
- Establishing a clear and consistent vision and set of goals for BLM built environments
- Assisting in the analysis of landscape and architectural character and how to integrate design solutions with them
- Describing an appropriate and sustainable application of accessibility requirements
- Identifying quality design techniques and materials.
- Recommending appropriate green building materials and systems and various ways to reduce the impact of the built environment

WHO DEVELOPED THE GQBE?

Developing the GQBE has provided an opportunity to reconsider the image of BLM and to solidify the agency's commitment to quality design. This document is the direct result of input from many BLM stakeholders. Over a series of workshops, these stakeholders helped to define the foundation of the document and to review it as it evolved. Those in attendance represented a variety of disciplines and hailed from a wide range of geographic areas.

With assistance from BLM, Belt Collins, a landscape architecture, engineering, communication design and planning firm, was contracted to facilitate and synthesize the discussions that took place. These guidelines represent the culmination of those discussions. This collaboration between professionals from diverse disciplines and geographies enables the document to provide guidance on a wide variety of facilities throughout BLM.

GQBE Workshop - Site Visit, Oregon

GQBE Workshop - Review Meeting, Colorado

GQBE Workshop - Site Visit, Oregon

GQBE Workshop - Site Visit, New Mexico

Red Rock National Conservation Area Visitor Center, Nevada

Grand Staircase-Escalante National Monument Cannonville Visitor Center, Utah

WHO SHOULD USE THE GQBE?

The GQBE was developed as a resource for all those involved in planning, designing, funding, building, or maintaining BLM's built environment. Quality is everyone's responsibility, and this document addresses a wide variety of topics ranging from the creation of healthy work environments to the design of campgrounds and trails. Whatever the facility being built, the GQBE can be turned to for guidance.

WHAT IS INCLUDED IN THE GQBE?

Chapter 1: Introduction explains the purpose and need for developing the GQBE as well as who was involved and how and by whom it is to be used.

Chapter 2: History reviews the history of the agency and its design heritage.

Chapter 3: Vision and Goals summarizes the vision and goals set forth to achieve the desired level of quality for facility development.

Chapter 4: Landscape Context outlines a process to be followed to identify and thereby respond to ecological, cultural, and landscape characteristics of a particular site.

Chapter 5: Planning and Design Process walks through each step of the process, from land use planning to construction and maintenance, assigning responsibilities to those involved. It does this via graphics as well as by detailing each stage of the process for several projects of various scales.

Chapter 6: Design Guidelines highlights planning and design principles for an array of BLM projects, ranging from large administrative buildings to small kiosks. Images, graphics, and simple notes are used to convey much of this information in an easy-to-digest fashion.

Appendices include a GQBE Project Worksheet, references, acronyms, and acknowledgments. The Worksheet allows for documenting the project planning and design process from beginning to end, creating a reference to ensure its quality for the life of the facility.

HOW SHOULD THE GQBE BE USED?

The GQBE is formatted as a flip reference. The chapters are color-coded along the edge to allow quick location of the appropriate chapter. The GQBE should be referenced during all phases of facility planning and design as well as during construction and maintenance. It provides direction to everyone involved in facility development and can help facilitate conversation amongst internal staff as well as with contractors, volunteers, and the public at large. The guidelines should be used to focus all stakeholders on ensuring that BLM facilities are of high quality and reflect an agency that respects the public lands it manages and the publics who use them.

Everything that we build conveys a message to the public.

-Allysia Angus

If not us, who? If not now, when?

- John F. Kennedy

CHAPTER 2

HISTORY

A HISTORY OF BLM AND ITS BUILT ENVIRONMENT

THE ORIGINS OF BLM

Severe drought, overgrazing, and unsustainable agricultural practices contributed to the Dust Bowl. One of BLM's parent agencies, the Grazing Service, was formed during this environmental catastrophe.

Library of Congress, Prints & Photographs Division, FSA-OWI Collection, LC-USF34-004052, Arthur Rothstein, photographer, Apr. 1936, Farmer and sons fleeing a dust storm.

In 1946, the Bureau of Land Management was brought to life through the marriage of two agencies in the Department of Interior: the General Land Office (GLO) and the Grazing Service. President Harry Truman presided over the union by including the proposed merger in a plan he submitted to Congress.

Established in 1812, the General Land Office was formed to administer the "public domain," the vast expanse of Federally held lands west of the Appalachian Mountains. The GLO's primary purpose was to dispose of these lands—to oversee their transfer into private ownership in order to encourage economic development and settlement in the American West (Tisdale and Booth 1998, 1). Most of this land eventually landed in the hands of private citizens, corporations, and the states. Of the remainder, a sizable portion became national parks and monuments, wildlife refuges, or national forests. Those lands not claimed for these purposes by 1946 were inherited by BLM. These circumstances gave rise to the notion that BLM administers "the leftovers"—the lands that nobody wanted. While the quality of today's BLM managed public landscapes certainly suggests otherwise, it has been difficult for BLM to dispel this reputation (Allen 2002, 189).

In 1934, during the environmental catastrophe of the Dust Bowl, President Franklin Delano Roosevelt signed into law the Taylor Grazing Act, thus setting the stage for the creation of the Grazing Service. Prior to the Act's passage, ranchers had appropriated a huge percentage of public lands in the West for grazing. By the early twentieth century, millions of acres were severely overgrazed. The Act's primary objective was to heal these lands and promote better management of the rangelands. It closed most public land to new settlement and gave the Secretary of Interior authority to place millions of acres into grazing districts. The responsibilities of the GLO and the Grazing Service were intertwined, however, creating a confusing situation for land managers and land users alike. This fact contributed to the merger that created BLM.

AN AGENCY IN SEARCH OF AN IDENTITY

At its inception in 1946, BLM inherited a daunting task. The fledgling agency was charged with enforcing thousands of laws and regulations—many of which conflicted with each other—not to mention the job of managing one third of the Nation's land. When Congress formed BLM, it simply combined the GLO and the Grazing Service without clearly defining the new agency's purpose. There was substantial tension between the old objective of land disposal and the newer one of land management. BLM during this period has been characterized as "an agency in search of an identity" (Muhn and Stuart 1988, 54).

With its emphasis on extractive uses and grazing, BLM stood in stark contrast to other land management agencies. Over the next several decades, BLM developed a reputation for accommodating the interests of miners and ranchers. Conservationists protested what they viewed as poor management. They decried environmental degradation occurring on public lands and derided BLM as the "Bureau of Livestock and Mining."

The 1960s brought fundamental changes to BLM as the environmental movement gathered steam across the nation. During the tenure of Secretary of Interior Stewart Udall, BLM management emphasized the importance of planning in order to meet the nation's long-term needs. BLM increased resource inventories of resources on public lands and invited the public to help determine how these resources should be managed. By the end of the decade, Congress and BLM had begun to better recognize the unique values of BLM lands, and to protect these values by designating special management areas—natural areas, recreation lands, and national conservation areas (Muhn and Stuart 1988, 105-106).

The Federal Lands Policy and Management Act (FLPMA), known

McNeil River Campground, Alaska

A CLEAR MISSION FOR BLM

as BLM's 'Organic Act', became law in 1976 and identified multiple use, sustained yield, and environmental protection as the guiding principles for management. Through this legislation, Congress provided the BLM with a clear mission and removed most of the legal conflicts that had long burdened the agency. Under FLPMA, public lands were to be retained in public ownership and managed so that scientific, scenic, historical, environmental, and archeological values would be preserved. Furthermore, it dictated that BLM lands be inventoried for potential inclusion in the nation's wilderness system, just as those under the management of the National Park Service (NPS) and U.S. Forest Service (USFS) (Allen 2002, 57).

In recent decades, conservation and recreation have become

BLM HISTORICAL TIMELINE

1812 General Land Office Created.

1905 United States Forest Service created.

1934 National Park Service created. Grazing Service created.

1946 General Land Office and Grazing Service merged to form Bureau of Land Management.

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

-Federal Land Policy and Management Act

AN INCREASING EMPHASIS ON CONSERVATION AND RECREATION

increasingly central to BLM's mission. In the 1990s, Secretary of Interior Bruce Babbitt was a powerful voice for BLM. Babbitt was influential in President Clinton's decision to establish Grand Staircase-Escalante National Monument, a new model for BLM. In the past, when national parks and monuments were established, management passed from BLM to the National Park Service. By contrast, Grand Staircase-Escalante remained under the jurisdiction of BLM. Babbitt believed that the agency should "have a sense of pride rather than…a bunch of inventory in the garage that is discovered and given to someone else" (Allen 2002, 163).

Additional BLM national monuments have been established since Grand Staircase-Escalante National Monument was established. These special places protect and raise awareness for spectacular natural landscapes, rare plant and animal communities, and outstanding archeological and paleontological resources. Suddenly "the lands nobody wanted" are drawing legions of new visitors and being recognized for their exceptional values. Christened the National Landscape Conservation System (NLCS), these BLM lands include national conservation areas and similar congressionally designated conservation areas, as well as national monuments, wilderness and wilderness study areas, wild and scenic rivers, national scenic and historic trails, and conservation lands of the California Desert. The NLCS was legislatively established through the 2009 Omnibus Public Land Management Act, affirming the importance of the System and its mission.

Totaling approximately 27 million acres, the NLCS includes some of the West's most spectacular landscapes and outstanding recreational opportunities. It includes some of the nation's most remote landscapes as well as extraordinary areas within close proximity to busy urban centers. The BLM manages these areas to protect their special values for the enjoyment of current and future generations..

HISTORY OF DESIGN

As the West grows ever more populated, Americans increasingly rely upon BLM lands for recreation. A broad spectrum of recreational uses occurs on public lands, including hiking, fishing, horseback riding, and driving off-highway vehicles. These uses point to a growing need for visitor facilities of all types. Yet, in contrast to other land management agencies, BLM does not have a long history of design or an established design philosophy.

During the 1920s and 1930s designers in other land management agencies, such as the National Park Service and U.S. Forest Service, formulated a comprehensive philosophy for design in natural areas. Underlying this philosophy was the principle that man-made features should be subservient to the natural environment. In practice, this teaching gave rise to a distinctive style of architecture, engineering, and landscape architecture that came to be known as the Rustic Style. The Rustic Style stressed the use of native materials, irregular massing, and carefully crafted details in order to harmonize buildings, trails, and other man-made features with their natural and cultural settings. During the Great Depression, the style was applied to projects in national forests, national parks, and state parks. Crews of Civilian Conservation Corps (CCC) laborers built hundreds of such facilities, typically working under the direction of a designer. Successful examples were compiled into design guidelines, which were widely distributed for others to emulate.

Upper Centennial Resource Conservation Area, Arizona

These documents laid the foundation for facility design in natural environments managed by the NPS and USFS. Such documents promoted the belief that design mattered and helped these agencies develop a unique and recognizable style. Buildings and facilities constructed during this period improved the visitor experience and helped to define the image of a national park or national forest.

In contrast, a culture of design has not taken hold within BLM to the same degree. BLM was formed after World War II, just as the Rustic Style was beginning to be phased out in favor of a more modern aesthetic. Likewise, the fact that BLM manages more land with fewer people and less financial resources may also be a contributing factor to the lack of a strong design culture. Regardless of the reason, the result has been that quality and consistent planning and design has not always been a priority. Therefore, an important purpose of these guidelines is to foster and nurture a strong design culture within BLM.

1962 Public Works Acceleration Act provided funding for first BLM campgrounds and day use areas.

1964 Classification & Multiple Use Act. Provided BLM's statutory multiple use authority for managing public lands.

1964 Land and Water Conservation Fund established to fund the acquisition of outdoor recreation areas.

1967 Red Rocks Recreation Lands (NV), BLM's first recreation area, designated under the Classification and Multiple Use Act.

1968 Passage of Wild and Scenic Rivers Act designated portions of Rogue River (OR) and Rio Grande (NM).

1968 Cleveland Lloyd Dinosaur Quarry Visitor Center, BLM's first visitor center, opened.

1969 Passage of the National Environmental Policy Act (NEPA) required Federal agencies to assess environmental impacts of actions and mitigate adverse effects.

1970 King Range National Conservation Area (CA), first NCA, created.

1976 Passage of the Federal Land Policy & Management Act (FLPMA). Defined BLM's multiple use mission.

1978 Iditarod National Historic Trail (AK), BLM's first National Historic Trail, designated.

A BRIGHTER FUTURE FOR DESIGN

Ft. Benton, Montana

BLM manages more than a quarter billion acres of public lands throughout the western continental U.S. and Alaska, an eighth of the total surface area of the nation. This equates to more than double the total acreage of the national forests, and one and half times the acreage of the national parks and wildlife refuges combined. To manage this vast amount of public land, BLM receives less than $4 an acre, compared to budgets that range from two to six times that amount for the U.S. Forest Service, U.S. Fish and Wildlife Service, or National Park Service.

Ten of the twelve fastest growing states in the country are in western states with significant proportions of BLM lands, increasing the demand from the public for everything from recreation to energy development. Thus, increasing demand for use of BLM lands, combined with limited budgetary support and very few design professionals within the ranks of the agency, exemplifies the need for these guidelines.

Policy now requires Federal buildings to meet goals related to reducing life cycle costs; improving energy, water, and materials conservation; providing healthy and productive work environments; and promoting environmental stewardship. In recent years, BLM staff and contractors have designed and built many quality facilities by referencing existing guidance related to sustainable development, visual resource management, and accessibility. In particular, BLM is emerging as a leader in sustainable design and green building.

The Craig Field Office (CO), Rawlins Field Office (WY), Escalante Interagency Visitor Center (UT), the Utah State Office (a leased facility), and the renovation of the Cleveland-Lloyd Dinosaur Quarry Visitor Center (UT) are recent BLM projects that meet these heightened standards and have garnered praise and awards from the U.S. Green Building Council and other organizations. These projects employ innovative techniques to reduce energy and water use, generate energy from sustainable on-site sources, recharge groundwater aquifers, and use recycled and/or locally harvested materials, thus signifying a new and promising direction for BLM.

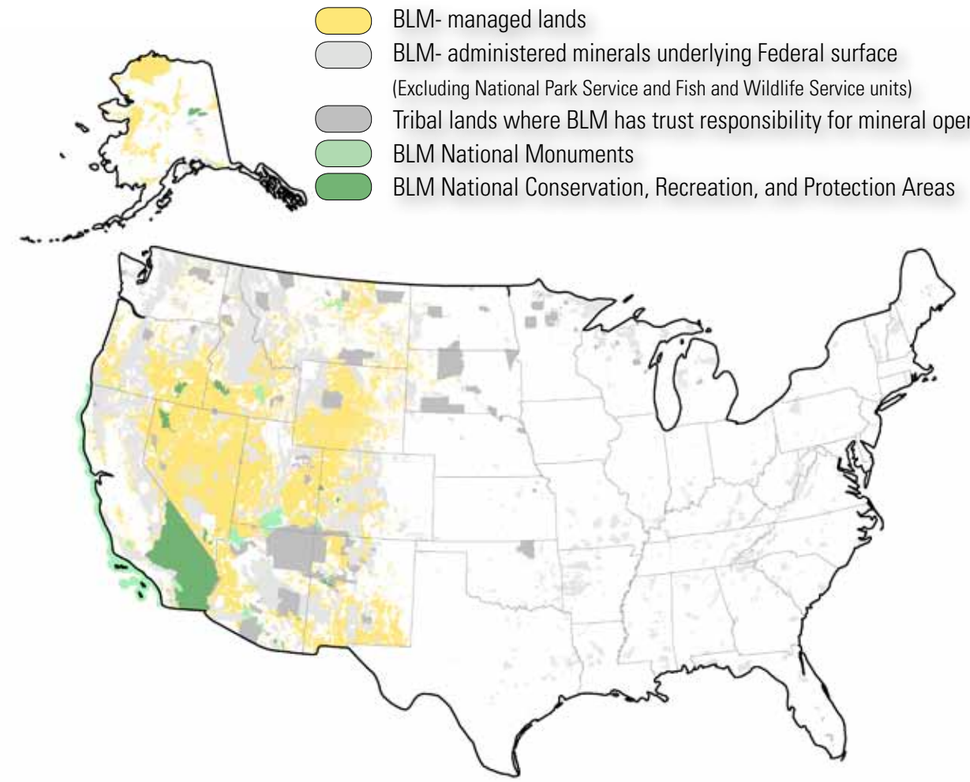
Unfortunately, not all of the agency's existing facilities can be held up as good examples of quality design. From the first moment a visitor enters public lands, the visual appearance of BLM facilities and the surrounding landscape begins to form impressions. Every component of the built environment is an opportunity to communicate a clear and consistent message about BLM's stewardship of the land and the relationships between people and place. Every site feature, no matter how seemingly minor, in concert with the whole, can instill a respect and care for the landscape, the history and culture of an area, and the agency's commitment to sustainable development. Whether it is the manner in which a campground or picnic area fits into the landscape setting, or the color, materials, and placement of seemingly everyday site elements such as trash cans, benches, or signs, BLM's built environment reflects the agency's image and identity.

The GQBE provides clear direction for facility design and development that contributes to a quality built environment for BLM—one that will reflect positively on the agency for years to come.

Lands that were too parched for row crops, too steep, or otherwise undesirable became part of the public domain. What once could be called 'the lands no one knows' inevitably become the lands that everyone covets.

- John G. Mitchell
National Geographic, August 2001

PUBLIC LANDS MANAGED BY THE BUREAU OF LAND MANAGEMENT



1980
Yaquina Head (OR) Outstanding Natural Area, BLM's first ONA established.

1983
Bear Trap Canyon (MT) Wilderness, BLM's first Wilderness Area designated.

1996
Grand Staircase-Escalante National Monument (UT), BLM's first National Monument, designated.

1999
Headwaters Forest Reserve, (CA) BLM's first Forest Reserve, established.

2000
Steens Mountain (OR) Cooperative Management and Protection Area, BLM's first CMPA, established.

2000
National Landscape Conservation System (NLCS) created.

2009
National Landscape Conservation System ratified by Congress.

2010
Guidelines for a Quality Built Environment

CHAPTER 3

VISION AND GOALS

Gold Butte Back Country Byway, Nevada

VISION AND GOALS FOR BLM'S BUILT ENVIRONMENT

A vision for BLM's built environment was developed in the early planning stages of the GQBE. Through a series of workshops and meetings, internal and external stakeholders collaborated to refine that vision. Those in attendance represented a range of professions, backgrounds, and geographic locations related to their experience with BLM facility development.

The vision translated into goals that provide a framework on which to fashion the guidelines. These over-arching goals outline a broad philosophy for the planning and design of BLM's built environment:

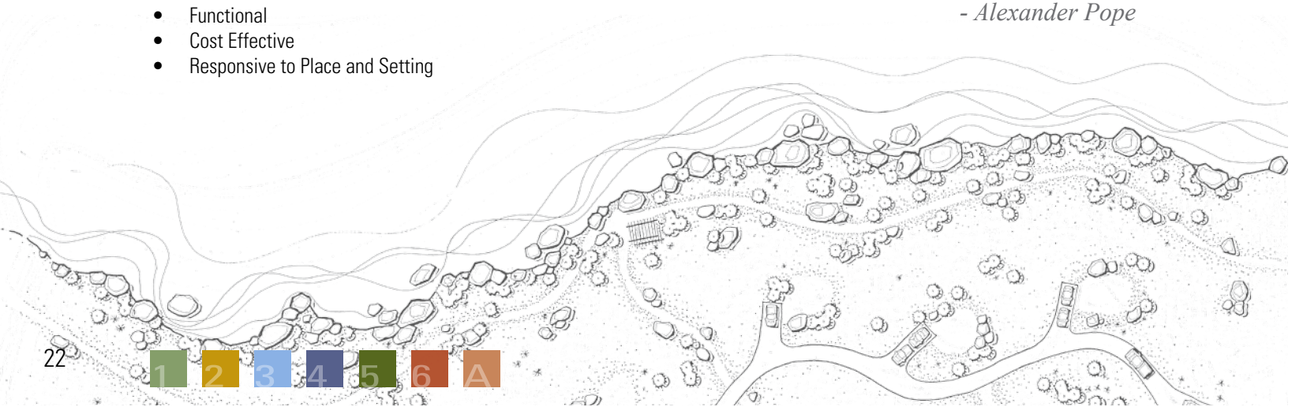
- Sustainable
- Attractive
- Functional
- Cost Effective
- Responsive to Place and Setting

The themes of quality, safety, and accessibility signify the core values within each goal and represent the three pillars upon which each goal is successfully accomplished.

This chapter explains the goals in more detail and draws connections to related programs and directives. In recognizing these goals, all projects, regardless of scale or budget, can be elevated to a place that represents quality within the built environment.

Consult the genius of the place in all.

- Alexander Pope



VISION FOR A QUALITY BUILT ENVIRONMENT

In support of our responsibility to manage diverse landscapes and multiple uses, BLM will provide safe and accessible facilities for the public and its employees that are sustainable, attractive, functional, cost-effective, and responsive to place and setting.

Red Rock National Conservation Area, Nevada

GOALS FOR A QUALITY BUILT ENVIRONMENT

SUSTAINABLE

BLM facilities will be designed and constructed with sensitivity to natural systems, to be durable, to require low maintenance, and to embody the efficient use of energy, materials, water, and other resources.

Craig Field Office, Colorado

Sustainability is a concept that "recognizes that human civilization is an integral part of the natural world and that nature must be preserved and perpetuated if the human community is to sustain itself" (NPS 1994). This concept is at the heart of BLM's mission; therefore, BLM should present models of sustainability in the built environment.

A sustainable development exemplifies the principles of conservation through a cohesive integration of buildings, site, and landscape. Buildings employ a high-performance core and shell, highly efficient mechanical and electrical systems, environmentally responsible materials, renewable energy sources, healthy indoor air quality, and other appropriate methods to reduce their environmental footprint. Sustainable sites respect natural systems, including soils, water, air, plant, and animal communities, honoring each site as a functioning component of a larger ecosystem.

Sand Island Recreation Area, Utah

In recent years, the Federal Government has strengthened its commitment to environmentally responsible practices such that green building is no longer merely a worthy objective but also a requirement. BLM and other Federal agencies are subject to executive orders and policies concerning a range of green building practices.

For additional information on sustainable design, consult these sources:

- *Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance.* The Executive Order requires Federal agencies to set 2020 greenhouse gas emissions reduction targets increase energy efficiency, reduce fleet petroleum consumption, conserve water; reduce waste, support sustainable communities, and leverage Federal purchasing power to promote environmentally responsible products and technologies.

- *This Memorandum of Understanding (MOU), Federal Leadership in High Performance and Sustainable Buildings.* This MOU, signed in 2006, established a commitment from all signatory departments and agencies, including the Department of the Interior, to exhibit Federal leadership in the design, construction, and operation of High-Performance and Sustainable Buildings. Included in the MOU are guiding principles related to optimizing energy performance, conserving water, improving indoor environmental quality, using integrated design, and reducing the impact of materials.

- *U.S. Green Building Council (USGBC; www.usgbc.org).* The U.S. Green Building Council is a nonprofit organization that promotes sustainable design and administers the Leadership in Energy and Environmental Design (LEED) rating system.

- *National Park Service Guiding Principles of Sustainable Design 1993 (www.nps.gov/dsc/d_publications/d_1_publications.htm).* This resource provides a thorough discussion of sustainable design.

- The Sustainable Sites Initiative™ (SITES™; www.sustainablesites.org). SITES is an interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center at The University of Texas at Austin, and the United States Botanic Garden to create voluntary national guidelines and performance benchmarks for sustainable land design, construction, and maintenance practices.

See Appendix E - References (pg. 207) for a comprehensive list of green building references and sustainability mandates.

The first rule of sustainability is to align with natural forces, or at least not try to defy them.

- Paul Hawken

ATTRACTIVE

BLM will construct and maintain an attractive built environment that projects an image of quality, value, and permanence.

Public lands are home to many spectacular landscapes. BLM's primary tool for protecting these scenic values is the Visual Resource Management (VRM) system. VRM measures the visual contrast created between built facilities and the natural setting rather than judging aesthetic quality. VRM is a systematic process for evaluating and managing the visually detectable change to the natural landscape. One basic premise of VRM is that projects that repeat the design elements of the surrounding landscape (characteristics of form, line, color, texture, and scale) tend to be in harmony with the environment, whereas those that do not reflect the local influences create visual contrast and should be avoided.

Even though style and form may vary based upon the landscape setting in which they occur, all facilities will convey quality workmanship, materials, and design. Likewise, how well something is maintained also conveys to the public the importance and worth of the resource. A well-designed and maintained facility engenders a sense of value to both staff and visitors. An attractive facility will project a sense of permanence so that both built facilities and the natural resources surrounding them will be respected and valued for years to come.

Grand Staircase-Escalante National Monument, Utah

Form follows function—that has been misunderstood. Form and function should be one, joined in a spiritual union.

- Frank Lloyd Wright

FUNCTIONAL

BLM facilities will perform well in the capacity for which they were intended. They will be safe, accessible, and enjoyable to use, contributing to a rewarding experience for visitors and employees alike.

Functional BLM facilities are those that respond to stated purposes, whether recreational, informational, utilitarian, or, as is often the case, a combination of purposes. Functional facilities meet the needs of all intended user groups. Understanding not only the purpose but who will be using the facility is key to planning and designing a functional built environment. For example, what is deemed appropriate for a busy visitor center, may not be applicable to a remote trailhead. Understanding the purpose and the intended users of a particular facility allows planners and designers to craft a functional facility that is safe, accessible, and pleasant to experience.

Wildwood Recreation Site, Oregon

The design philosophy that "form follows function" is applicable to BLM's built environment in that planners and designers should strive to understand how to efficiently and cost effectively provide adequate facilities relative to the purpose and intended users. Simple design solutions that function well are more successful than complex designs that fail to meet the needs of the day-to-day facility management needs and use. Even though functional design is often not readily recognizable to the user, it helps to create a sense of comfort and safety that contributes to a positive user experience and encourages repeat visitation.

Our greatest responsibility is to be good ancestors.

- Jonas Salk

COST EFFECTIVE

BLM facilities will be financially responsible and include a consideration for whole-life costs. Appropriate investment of resources during design will advance both the quality and cost effectiveness of BLM's built environment.

Big Bend Campground, Utah

As a public land management agency, BLM has an obligation to use financial resources wisely. Prudent financial planning assures funding is available for both initial design and long-term management. Thinking in terms of life cycle or "whole-life costs" is an important step to achieving a cost-effective built environment. The primary value of whole-life costing is that costs that occur after an asset has been constructed or acquired, such as maintenance, operation, and disposal, become an important up-front consideration in decision making. In contrast, focusing on the up-front capital costs of a project (such as acquisition, design services, and construction) fails to take into account the long-term costs of a facility.

When whole-life costs are not considered, initial savings may result in increased expenditure throughout the asset's life. When considering whole-life cost, value is rarely achieved through hasty design and lowest cost construction. Rather, quality of design and construction are emphasized. The aim of the GQBE is to help create places that last not only because they are durable and well constructed but because they evoke a timeless quality that will not feel dated within a few years. This idea of creating lasting value is the cornerstone for a new paradigm at BLM, one which emphasizes quality over lower initial design and construction costs.

Proper allocation of funding for new or existing facilities sets the stage for a quality built environment. Preliminary budgeting can set a project up for whole-life success. If sufficient funding is available, a project has a better chance of achieving a quality outcome. Conversely, if inadequate funding is available, a project will undergo shortfalls in various stages of the process, including quality of design, materials, operation, and maintenance. It is important that decisions regarding funding take into account the needs that a facility will have both now and in the future. Funding allocation should consider that it is better to do less very well. This approach will ensure that all BLM facilities contribute to a quality built environment.

"Nature holds the key to our aesthetic, intellectual, cognitive, and even spiritual satisfaction."

- Edward O. Wilson

RESPONSIVE TO PLACE AND SETTING

BLM facilities will be designed to harmonize with the environments they are located within, fully integrating with their unique natural and cultural settings.

BLM promotes and encourages the philosophy of context-sensitive design: the idea that in every case, the design solution should derive from the unique setting and particular set of circumstances. No matter what is to be built, design should respect the natural, cultural, and social context, from both an aesthetic and a functional standpoint. A quality built environment creates a sense of place.

BLM facilities should be environmentally responsible and should protect the night sky, topographical features, and hydrological systems. Structures, roads, and amenities should be seamlessly built into the landscape features, matching shapes, colors, and materials found in the vicinity. Development of facilities should not encroach on natural drainage and waterways.

Facilities should be responsive to regional, and site-specific climate patterns. Passive-solar orientation, a key sustainable strategy, is one of the most cost-effective energy-saving techniques available. Creating comfortable spaces both indoors and outdoors is as beneficial for a picnic area as it is for a visitor center.

BLM facilities should be in harmony with the form, line, color, and textures found in the surrounding landscape. BLM's Visual Resource Management (VRM) system should be utilized to help develop proper siting and design solutions accordingly so that all facilities meet established VRM objectives in the respective Resource Management Plan (RMP).

A quality built environment also recognizes the value of history and culture. Incorporating the vernacular is one way to interpret

Grand Staircase-Escalante National Monument Cannonville Visitor Center, Utah

local stories; therefore design of features may reference past or present cultures and/or local architectural traditions. When located in cities or towns, BLM facilities should compliment the architectural character of the surrounding community and offer practical benefits to residents. For instance, the vernacular architecture of rural barns may help influence roof design while the historic split rail fences or rock walls may inform design solutions for property perimeters.

Responsiveness to place and setting must also consider the range of access needs for all users. Creating a barrier-free environment in every facility type is challenging, but achievable. Irrespective of the setting or type of facility, equality is expressed on BLM lands through dedication to accessible design. A quality built environment provides creative integration of the best practices and regulations pertaining to accessibility in a manner that respects the character of the setting while providing for a safe and comfortable visitor experience.

Grand Staircase-Escalante National Monument, Big Water Visitor Center, Utah

BLM

CHAPTER 4

LANDSCAPE CONTEXT

LANDSCAPE CONTEXT

WHAT IS LANDSCAPE CONTEXT?

An understanding of the landscape in which a facility will be constructed is the first and most important step in creating a quality built environment. The term "landscape context" describes the ecological and cultural forces that define and shape the natural and built environment, as well as the landscape character settings that contribute to the physical appearance of an area. In essence, landscape context refers to the character of place.

Quality BLM facilities demonstrate a conscious response to landscape context. These built environments are often comfortable, and the visitor experience of these facilities is strengthened by careful attention to the architectural and landscape character of the region. Also, facilities that respond to landscape context can be more cost effective through the use of local materials and construction techniques, and are likely more functional in that design solutions are informed by local climate and ecological considerations.

Wildwood Recreation Area, Oregon

LANDSCAPE SETTINGS

The nation's public lands represent a staggering array of diverse and often unique landscape settings. It is important to evaluate the distinctive ecological and cultural forces at play at a particular place in order to understand the landscape setting embodied by these forces. Although hundreds, if not thousands, of distinct landscape settings make up this collection, it is helpful to identify some of the key landscapes that broadly capture the character and qualities embodied by BLM managed public lands. The following landscape settings reflect this geographic and ecological diversity: deserts, forests, plateau and canyonlands, mountains, plains and grasslands, and coasts.

DESERTS

FORESTS

PLATEAU & CANYON LANDS

MOUNTAINS

PLAINS & GRASSLANDS

COASTS

HOW TO ESTABLISH LANDSCAPE CONTEXT

The following pages explain how to recognize primary influences contributing to the landscape context of an area so that these influences can inspire and inform the site planning and design of BLM's built environment. Those involved in the development of BLM facilities should complete the analysis outlined in this chapter prior to moving into the design phase of any project. Completing this assessment in the early planning phases of a facility provides a solid understanding of the landscape context upon which all phases of subsequent design (site planning, conceptual design, master planning, and construction details) can be completed.

This section is organized into three analysis areas: ecological influences, cultural influences, and landscape character influences. Combined together, these three analysis areas embody the landscape context for a particular site.

Ecological Influences

Ecological influences are expressed through the physical and biological attributes and process of the landscape, such as vegetation, topography, geology, hydrology, soil, climate and wildlife.

Cultural Influences

Cultural influences are expressed through the social and cultural values of a region as well as the human uses of the land, such as farming, ranching, industry and commerce, resource management, and art.

Landscape Character Influences

Landscape character influences can be analyzed by synthesizing the ecological and cultural influences of the surrounding landscape into the dominant patterns that make up the whole. These dominant patterns can be described in terms of four landscape character elements: form, line, color, and texture.

Red Rock Canyon National Conservation Area Visitor Center, Nevada

In order to establish the landscape context for a particular project, look beyond the boundary of a particular project area to better understand the regional patterns that influence the site. Understanding how a particular location relates to these regional influences is essential to understanding how the built environment should respond to the site, and helps ensure that the design will be well integrated into broader patterns of landscape and culture.

Ecological Influences

Geology and Soils

Climate

Hydrology

Vegetation

- Ecological influences are expressed through physical features, natural processes, biological attributes, and regional characteristics of the landscape. These include native vegetation, topography, geology, hydrology, soils, wildlife habitats, precipitation, prevailing winds, and solar orientation and exposure.
- Ecological influences may inform design responses that include material selection, plant palette, green strategies, roof pitch, building orientation, set-back distances, and natural forms (biomimicry).

Cultural Influences

Development Patterns

Historic

Pre-Columbian

Contemporary

- Cultural influences of a particular region are shaped by human values and uses of the land, such as settlement patterns (rural, suburban, urban); art and architecture (prehistoric, history, contemporary); agriculture (farming, ranching); and industry (mining, timber harvest, energy production).
- Cultural influences may inform design responses that include building density, architectural style, site art, interpretive themes and exhibits, circulation patterns, and spatial relationships and viewpoints.

Landscape Character Influences

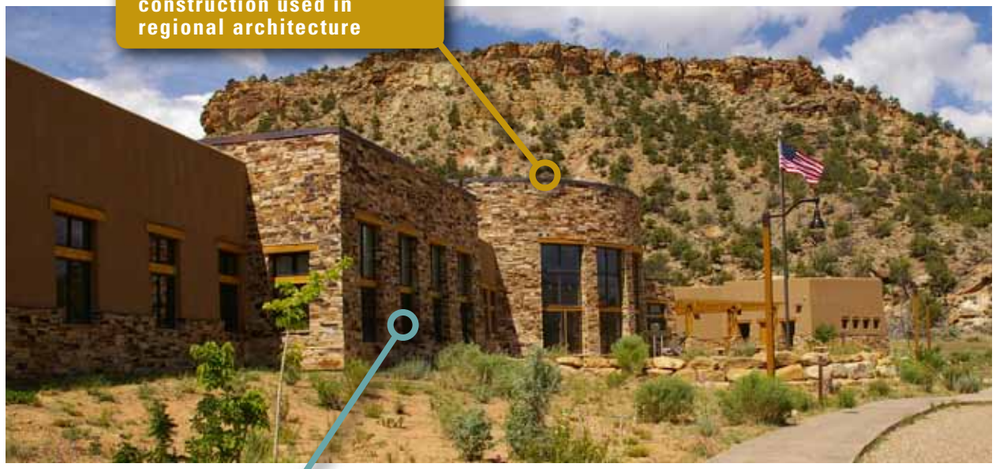
Form

Color

Line

Texture

- Landscape character influences of a particular region emanate from the natural elements in the landscape. Some landscape character influences to consider include the form, line, color, and texture of the native soil; vegetation; and geological formations; as well as the structural forms, drainage patterns, and horizon lines.
- Landscape character influences should inform design responses that include paint color, material choice, color selection, architectural style, building massing and siting, composition of space, and trail and road alignment.



Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

DOCUMENTING LANDSCAPE CONTEXT

When studying the landscape of a particular site, identifiable patterns emerge which help to define the character of the built environment. Responses to these patterns can be expressed in the built environment through both the architecture and the site design. Planning and design solutions which respond appropriately to this specific character result in a quality built environment. The following pages are examples of BLM facilities which reflect a successful response to ecological, cultural, and landscape character influences.

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

Grand Staircase-Escalante
National Monument
Cannonville Visitor Center, Utah

Sand Island Contact Station, Utah

Cascade Streamwatch, Oregon

Pompeys Pillar National Monument Interpretive Center, Montana

When documenting landscape context for a particular facility, it is important to study the particular relationships between the ecological, cultural, and landscape character components and the applied built environment response. Often, it helps to create image boards to illustrate the relationship between landscape context and proposed designs. Documenting and studying the landscape context of a site lends support to the designs that follow. It provides a rationale for the selection of materials, the mass of the structures, and the repetition of forms. It creates support for the decisions that are made throughout the design process and helps produce successful design solutions.

The following examples illustrate the respective landscape context and successful built environment responses.

LANDSCAPE CONTEXT

Rock Art Panel, Utah

Cultural Influence

Lewistown Farmstead, Montana

Landscape Character Influence

BUILT ENVIRONMENT RESPONSE

Sand Island Contact Station, Utah

Building facade incorporates artistic reproductions of petroglyphs

Pompeys Pillar National Monument Interpretive Center, Montana

Building form reflects that of local vernacular architecture

LANDSCAPE CONTEXT

Salmon River, Oregon

Landscape Character Influence

Wildwood Recreation Site, Oregon

Walkway reflects sinuous line of the adjacent Salmon River—the facility's focus

Desert Tortoise

Ecological Influence

Red Rock Canyon National Conservation Area Visitor Center, Nevada

Interpretive exhibits educate visitors about local wildlife and sensitive habitat

Traditional Adobe Architecture, New Mexico

Cultural Influence

Salinas Pueblo Missions National Monument, New Mexico

Building mimics the adobe construction used in regional architecture

ATTENTION TO DETAIL

A successful response to landscape context is often seen in the details of a project. The design of every detail of a project has bearing on the overall composition and response to the landscape context. Paying special attention to detail gives visitors to public lands a more authentic experience and projects thoughtfulness and quality at all levels of design.

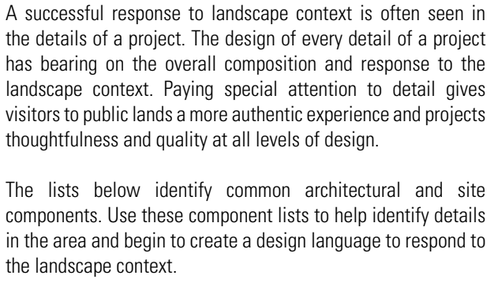
The lists below identify common architectural and site components. Use these component lists to help identify details in the area and begin to create a design language to respond to the landscape context.

ARCHITECTURAL COMPONENTS

- Roof (pitch, shape, material, overhang)
- Windows (size, shape, construction, materials, layout)
- Doors (location, construction, materials, layout)
- Walls (construction, materials)
- Base (construction, massing, materials)

SITE COMPONENTS

- Surfacing (material, texture, color, pattern)
- Barriers (construction, materials, massing)
- Vegetation (location, species, massing, layout)
- Furniture (construction, materials, location)



Grand Staircase-Escalante National Monument, Utah

Careful color and material choice add to the seamless transition between the rock wall and geologic landforms in the surrounding landscape

Fred Blixt Cabin, Alaska

"Beaver-cut" ends on logs is a rustic detail that connects structure to traditional construction methods

Grand Staircase-Escalante National Monument Interagency Visitor Center, Utah

Building architecture integrates pergola structure to create shaded outdoor space in a hot climate

Red Rock Canyon National Conservation Area, Nevada

Curb cut allows water to drain from parking area, providing additional water to plants in an arid climate

Wildwood Recreation Site, Oregon

Post detail evokes Native American totem pole craftsmanship

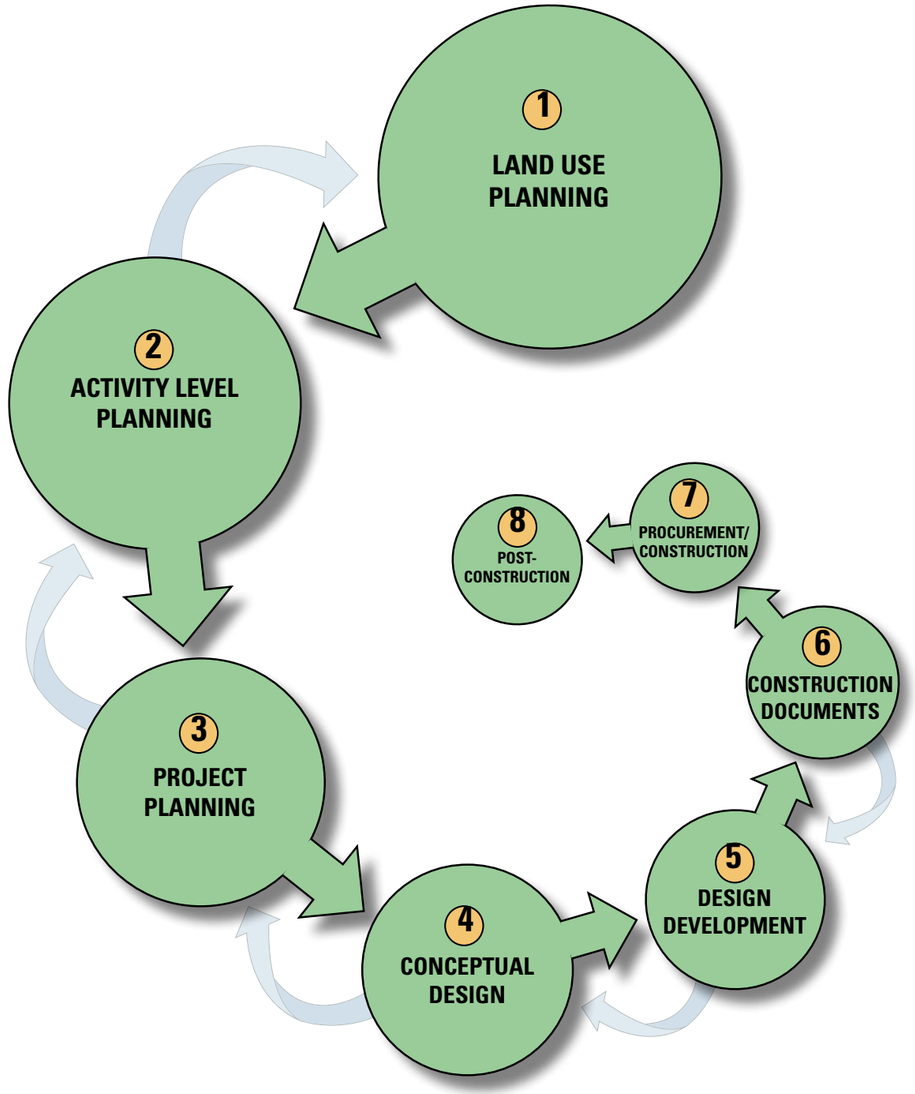
BLM

CHAPTER 5

PLANNING & DESIGN PROCESS

PLANNING & DESIGN PROCESS

The Planning and Design Process is a systematic sequence of planning, design, and construction steps that, when followed, will produce a quality facility. Each step in the process flows smoothly into the next, and ensures informed decisions are made in a sequential order. In this way, tasks within each step are predicated on the successful completion of tasks in the previous step. The planning and design process presented in this section will assist in developing a quality facility. To further illustrate this process, four sample facility projects are examined. Each sample project varies in size and complexity in order to provide close comparisons to a variety of project types. The samples are meant to be used as guides only, because many variables exist among projects.



ROLES AND RESPONSIBILITIES

The planning and design process involves steps that begin at the larger land-use planning scale and continue through to the more detailed project construction stage. Within that spectrum, numerous individuals have important roles and responsibilities that influence the relative success of a project, as well as the ultimate visual impression left on the land through BLM's facilities. These roles may vary with the type of project as well as within the steps of the planning and design process itself.

To achieve the goals and vision for BLM's built environment, **it is critical that those involved in the planning and design process understand their respective roles and the contributions they are uniquely positioned to make.** This includes not only internal BLM staff at the field, district, and possibly state office levels, but also specialists from other agencies, partner organizations, or contractors.

Within BLM, these specialists could include recreation planners, engineers, landscape architects and architects, archeologists, hydrologists, ecologists or botanists, wildlife biologists, geologists, and more. Each may make significant contributions to a particular project. For instance, consultation with the hydrologist could help to identify hydrologic issues affecting placement of site structures, buffers from sensitive streams, or similar aquatic habitat protection issues. Or, it may be that the recreation planner can provide critical information regarding visitor use, patterns of recreation activities, and social expectations for landscape settings necessary to achieve desired outcomes. Similarly, consultation with the landscape architect and/or visual resource management specialist can be essential in helping to describe the landscape character components that help shape designs that complement their settings.

It is imperative that engineering staff, landscape architects, architects, and other specialists with project management, construction, and design experience collaborate early and often in the planning stage. The earlier this collaboration occurs in the planning and design process, the more successful the communication of ideas and possibilities for appropriate design solutions can be achieved. Such collaboration must also consider appropriate and creative solutions for providing accessibility for all users that is integrated into the planning, conceptual design, and design development stages, rather than being addressed as an afterthought.

Depending on the scale of a particular project, this collaboration may occur informally or may need to be formalized through a project and/or interdisciplinary team. In most cases, keepers of the specific natural resource data necessary in the site planning process are the aforementioned various resource specialists. Hence, it may be essential that these specialists be part of the project team(s)—both interdisciplinary teams for environmental analysis as well as project-specific design teams. In many cases, specialists will be involved in more than simply providing input to the land use, activity, or site planning efforts; they may also be project leads or even project managers, depending on the type of project and its level of complexity.

In any case, **the importance of early, often, and continual collaboration amongst resource specialists cannot be overemphasized.** Becoming familiar with the planning and design process will help ensure specialists can provide substantive input throughout and ensure attention to issues of sustainability, safety, health and well being, while also meeting BLM's larger mission goals and resource-specific objectives.

1 LAND USE PLANNING

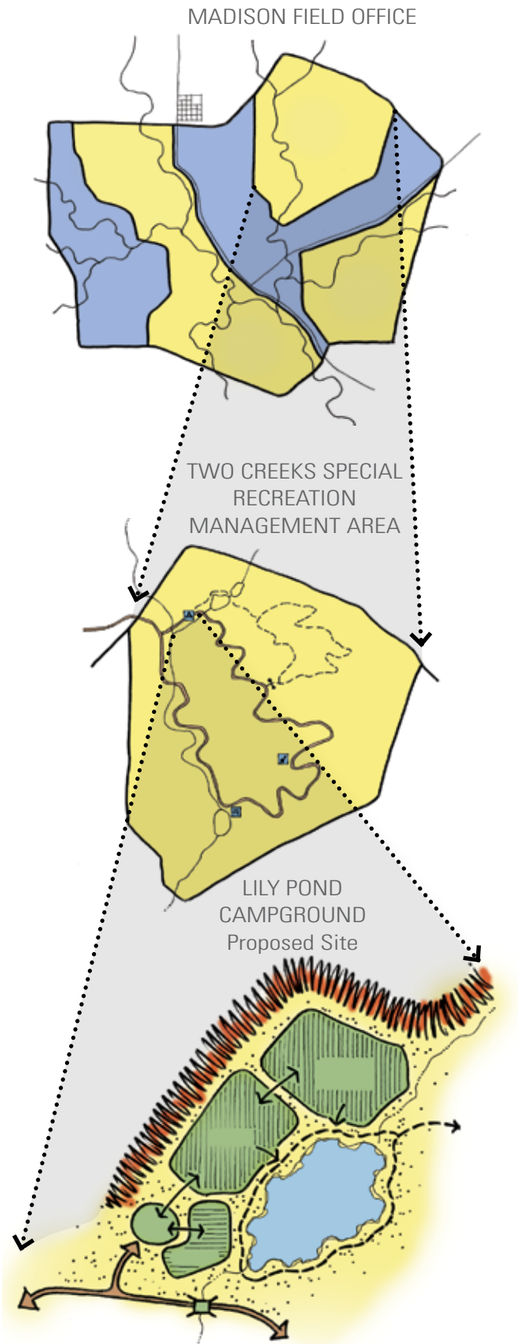
This "big picture" level of planning serves as a basis for future resource decisions. Land Use Planning documents contain information pertinent to the future guidance of a management area. This can include an analysis of the resources of the area; identification of land use suitability and capability; land acquisition and disposal needs; determination and designation of land use zones; and development of management policies, objectives, responsibilities, guidelines, and plans. Land Use Planning provides overall guidance for the management area. It sets the goals for the management area, establishes desirable use levels, identifies types of development and land uses, and finally, determines how all of this will be accomplished. Outcomes include Resource Management Plans (RMPs) that establish Special Recreation Management Areas and Extensive Recreation Management Areas, Visual Resource Management (VRM) Classes, and Travel Management Allocations. This is also the stage in which related planning initiatives (state, county, city comprehensive plans, etc.) should be incorporated.

2 ACTIVITY LEVEL PLANNING

Activity Level Planning details resource management activities, actions, and prescriptions for areas of emphasis within a management area identified during the Land Use Planning phase. These areas are subsets of the entire management area and could include Special Recreation Management Areas, byway corridors, or watersheds. When Activity Level Plans are completed for these areas, funding sources for future developments should be identified, including funds for not only construction, but also planning, design, and maintenance.

3 PROJECT PLANNING

During this phase, the initial planning for the proposed project occurs. The design program, a comprehensive list of facility requirements including the types and numbers of facilities needed, is developed in sufficient detail so that how design services will be provided and who will serve on the design team can be determined. A preliminary design and construction budget is generated based on data collection and site reconnaissance. At this level, data collection includes review of pertinent BLM documents, manuals, Land Use Plans, Activity Level Plans, and the GQBE document.



4 CONCEPTUAL DESIGN

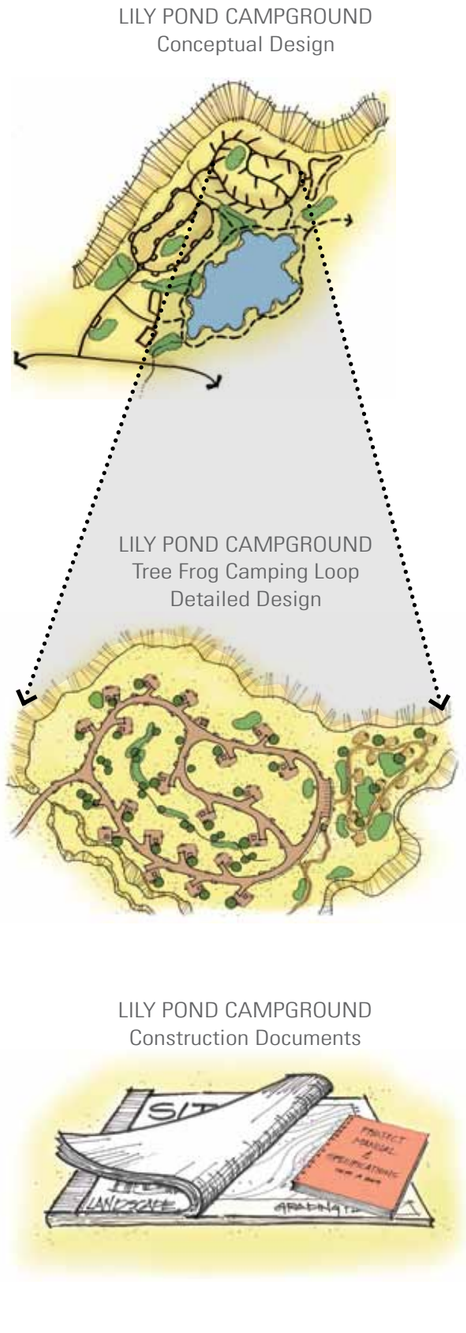
The design team utilizes detailed site inventories, site analysis, geotechnical reports, and utility studies to develop a number of design options for review. Conceptual design places building and site facilities onto the site in various locations to generate a realistic layout of architectural, landscape, mechanical, electrical, and civil components. Conceptual design offers quick design solutions in order to generate comments and responses. Design concepts are evaluated with respect to GQBE principles, preliminary cost estimate, and the budget. Commonly, the green strategy goals of a project are established during conceptual design. Once a conceptual design option is approved, the determination is made as to whether the project will be constructed by BLM personnel or contractors, which dictates the level of plans and specifications needed.

5 DESIGN DEVELOPMENT

Further development of the approved conceptual design occurs in this phase. Preliminary drawings are refined to a level meeting architectural and engineering standards. The design is influenced by and evaluated with respect to the GQBE. Plans are detailed enough to allow for preparation of a Class B Cost Estimate. The appropriate types of construction and procurement procedures are determined..

6 CONSTRUCTION DOCUMENTS

Construction Drawings, Details and Technical Specifications are completed during this phase. Construction Documents (CDs) describe the quantity, quality, configuration, and size of all components of the design, and ensure the project is consistent with the design, program, budget, and schedule. If appropriate, agency agreements are finalized and a final cost estimate is produced.



7 PROCUREMENT / CONSTRUCTION

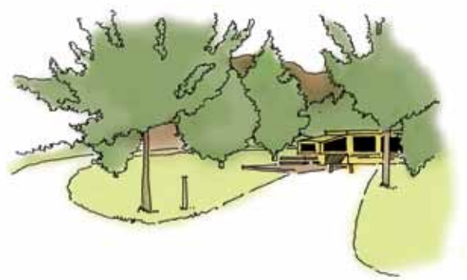
During this phase, the project is constructed by qualified BLM personnel or a contractor. If by contract, bid documents are produced and the package is prepared and advertised for a formal public bidding process. The project is constructed according to the construction drawings and specifications.

LILY POND CAMPGROUND
Construction

8 POST-CONSTRUCTION

The finished facility is made ready for operations and the project is completed. If constructed by a contractor, the project is turned over to BLM after final acceptance. Data are entered into the Facility Asset Management System (FAMS). As-built drawings are prepared and submitted for recording. BLM continues routine maintenance and condition assessments throughout the life of the facility.

LILY POND CAMPGROUND
Campsite Post-Construction



Sample projects of varying complexity (fairly simple, moderately complex, most complex) are presented in the following pages. These sample projects offer guidance with not only understanding the phases of the planning and design process, but also identifying who is responsible for which phases and who should provide appropriate approvals along the way. NOTE: The term "design professional" refers to one formally trained to perform design work (e.g., architect, engineer, landscape architect).

PROJECT SAMPLE 1 (simple)

TRAILHEAD KIOSK

1 2 3 4 5 6 7 8

LAND USE PLANNING

RESOURCE MANAGEMENT PLAN REVIEW

Reference Resource Management Plan (RMP) and other relevant land use plans (County Comprehensive Plan, City General Plan, etc.) for broad management direction and to ensure conformance with Plan decisions, goals, and objectives. In this case, the RMP includes decisions that call for providing visitor information, orientation, and interpretation.

ACTIVITY LEVEL PLANNING

ACTIVITY LEVEL PLAN REVIEW

In this case, an approved Recreation Area Management Plan identifies the need for improved interpretation and orientation at an existing trailhead. Installation of a trailhead kiosk is noted as an appropriate method to convey information.

POTENTIAL FUNDING

Potential funding sources are identified for project planning, design, construction, and maintenance. Preliminary cost estimate is prepared using cost data included in the FAMS.

Responsibility: Recreation Planner
Approval: Field Office Manager

TRAILHEAD KIOSK

1 2 **3** 4 5 6 7 8

PROJECT PLANNING

IDENTIFY PROJECT LEAD

Field Office Manager assigns Project Lead.

FORM PROJECT PLANNING TEAM

Project Lead secures assistance from relevant BLM staff to include recreation staff, engineer, landscape architect, architect, interpretive specialist, maintenance staff, etc. These team members could work at the Field, District, or State level, or be with the National Operations Center, and some should transition to the Project Design Team.

NEPA INITIATION

Project-level NEPA is initiated, if needed.

SITE ANALYSIS

A basic site analysis is conducted to understand opportunities and constraints for installing a trailhead kiosk. Analysis components include vehicular/pedestrian circulation, views, natural features, vegetation, sun angles, etc.

USER PROFILE

A basic user profile is prepared to understand how the kiosk will be used and what information it should include to meet the needs of the users.

DEVELOP DESIGN PROGRAM

Using input from the Planning Team, Project Lead develops program document for proposed trailhead kiosk. What type of information should be displayed? Are there graphic design standards to follow? Are there size or style requirements for kiosk? The program should be detailed enough to clearly identify requirements while allowing flexibility in design.

PRELIMINARY BUDGET

Project Lead and Planning Team establish a preliminary budget for design and construction.

PRELIMINARY SCHEDULE

Project Lead and Planning Team prepare a preliminary schedule for completion and identify milestones.

Responsibility: Project Lead and Planning Team

Approval: Field Office Manager

PROJECT SAMPLE 1 (simple)

TRAILHEAD KIOSK

1 2 3 **4** **5** **6** 7 8

CONCEPTUAL DESIGN

FORM DESIGN TEAM

The Design Team is made up of qualified BLM design and interpretive professionals (Field-, District-, State-level, or National Operations Center), many of whom will likely transition from the Project Planning Team.

RESEARCH

Design Team reviews program document, relevant planning documents, GQBE, and other materials as needed for guidance and assistance on the layout, size, and style of kiosk. Identify good examples of quality kiosk designs to model.

ALTERNATIVE CONCEPTS

Design Team develops alternative design concepts for kiosk that explore different materials, orientations, sizes, etc.

PRELIMINARY COST ESTIMATE

Design Team develops Preliminary Cost Estimates for each alternative design concept.

SELECT PREFERRED CONCEPT

Based on feedback from Project Lead and Design Team, the Field Office Manager determines which concept to further refine.

GREEN STRATEGY GOALS

Green Strategy goals are determined for project development (i.e., sustainable material selection, recycling, etc.).

NEPA COMPLETION

Project-level NEPA is completed, if needed.

DETERMINE WHO WILL BUILD

Kiosks and other small projects may be constructed by BLM personnel, volunteers, partners, and/or contractors. Project Lead and Field Office Manager determine who will build trailhead kiosk.

Responsibility: Project Lead and Design Team

Approval: Field Office Manager

DESIGN DEVELOPMENT

For small-scale or simple projects, detailed design development may not be necessary, and the Project Lead may determine it appropriate to move directly to preparation of construction documents.

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS

Design Team prepares construction documents. Kiosk is designed to ensure that footing design accounts for wind/snow loads and to meet accessibility guidelines.

Responsibility: Design Team

Approval: Project Lead and/or Design Professional

SAMPLE 1

PROJECT SAMPLE 1 (simple)

TRAILHEAD KIOSK

1 2 3 4 5 6 **7** **8**

PROCUREMENT/CONSTRUCTION

PROCUREMENT

Method of procurement is dependent upon projected project costs. The Project Lead could purchase materials locally and construct kiosk using BLM staff and volunteers, or work with the Contracting Officer (CO) to issue a purchase order to hire a contractor for fabrication and installation.

CONSTRUCTION

Project Lead inspects the work performed by either BLM staff, volunteers, or contractors to verify that kiosk is constructed to specifications in construction documents. Design Team remains available throughout construction for technical advice and consultation. Minor field adjustments may be made as site conditions dictate. If changes to design are made, final as-built drawings should be prepared.

Responsibility: Project Lead
Approval: Project Lead

POST-CONSTRUCTION

FACILITY ASSET MANAGEMENT SYSTEM

In coordination with Project Lead, the FAMS Data Steward enters relevant asset attributes into FAMS.

MAINTENANCE

Ongoing maintenance is provided to ensure kiosk is attractive; serving the purpose intended, and, safe for users. Project Lead coordinates with appropriate BLM staff regarding future maintenance needs. Regular maintenance extends the life of the facility.

Responsibility (FAMS): FAMS Data Steward
Responsibility (Maintenance): Field/District Office Staff

PROJECT SAMPLE 2 (moderately complex)

NEW CAMPGROUND

1 **2** 3 4 5 6 7 8

LAND USE PLANNING

RESOURCE MANAGEMENT PLAN REVIEW

Reference Resource Management Plan (RMP) and other relevant land use plans (City General Plan, State Recreation Plan, County Comprehensive Plan) for broad management direction and to ensure conformance with Plan decisions, goals, and objectives.

In this case, the RMP includes decisions that allow overnight camping in both developed campgrounds and primitive campsites for a variety of users, depending on specific resource protection goals and objectives, location, and access.

ACTIVITY LEVEL PLANNING

ACTIVITY LEVEL PLAN REVIEW

In this case, an approved Recreation Area Management Plan identifies the need for additional developed camping opportunities and provides general locations within the management area where such facilities would be appropriate. Also included in the Plan are the maximum levels of development (e.g., numbers and types of campsites, whether potable water will be provided, whether fees will be collected, etc.).

POTENTIAL FUNDING

Potential funding sources are identified for project planning, design, construction, and maintenance. A preliminary cost estimate is prepared using cost data included in the FAMS.

Responsibility: Recreation Planner
Approval: Field Office Manager

NEW CAMPGROUND

1 2 **3** 4 5 6 7 8

PROJECT PLANNING

IDENTIFY PROJECT LEAD

Field Office Manager assigns as Project Lead someone with relevant project development experience.

FORM PROJECT PLANNING TEAM

Project Lead secures assistance from relevant BLM staff to include recreation planner, engineer, landscape architect, architect, interpretive specialist, maintenance staff, biologists, geologists, etc. These specialists could work at the Field, District, or State level, or be with the National Operations Center. Those who are design professionals should transition to the Project Design Team.

NEPA INITIATION

Project-level NEPA is initiated.

PUBLIC SCOPING

Stakeholders are engaged via formal (letters, surveys, meetings) and/or informal (site visits, conversations) methods to determine public support for project and any development/ resource concerns they may have.

SITE ANALYSIS

A site analysis is conducted to understand opportunities and constraints for developing a campground. Analysis components include: vehicular/pedestrian circulation, views, natural features, sensitive habitat, riparian areas, vegetation, sun angles, potential trail connections, etc.

USER PROFILE

A user profile is prepared to better understand campground user needs, preferences, and the desired recreational outcomes. For what visitor experiences is it important to provide opportunities?

DEVELOP DESIGN PROGRAM

Using input from the Planning Team and stakeholders, Project Lead develops program document for proposed campground. Program should be detailed enough to clearly identify requirements while allowing flexibility in design.

GREEN STRATEGY GOALS

Green Strategy goals are determined for project development (e.g., water-efficiency, use of native plants, recycling, etc.).

PRELIMINARY BUDGET

Project Lead and Planning Team, in conjunction with the Field Office Manager, establish a preliminary budget for design, and construction.

PRELIMINARY SCHEDULE

Project Lead and Planning Team prepare a preliminary schedule for completion and identify milestones.

PROJECT DATA SHEET

A Project Data Sheet is prepared by Project Lead and Planning Team and submitted for Capital Improvements funding.

Responsibility: Project Lead and Planning Team

Approval: Field Office Manager

PROJECT SAMPLE 2 (moderately complex)

NEW CAMPGROUND

1 2 3 **4** **5** 6 7 8

CONCEPTUAL DESIGN

FORM DESIGN TEAM

The Design Team is made up of qualified BLM design professionals (Field-, District-, State-level, or National Operations Center), many of whom will transition from the Project Planning Team, and/or an Architectural Engineering (A/E) contractor.

RESEARCH

Design Team reviews program document, relevant planning documents, GQBE, and other materials as needed for guidance and assistance on the layout, size, setting, and character of the campground. Coordination with user groups to understand specific needs may be necessary. Reference other campgrounds that are good examples of quality design.

ALTERNATIVE CONCEPTS

Design Team presents design concepts to BLM and public stakeholders to solicit feedback.

CLASS C PRELIMINARY COST ESTIMATE

Design Team develops Class C Preliminary Cost Estimates for each alternative design concept.

SELECT PREFERRED CONCEPT

Based on feedback from Project Lead, Design Team, BLM Specialists, and stakeholders, the Field Office Manager determines which concept to further refine.

NEPA COMPLETION

Project level NEPA is completed.

PROJECT LEAD TRANSITION

In this example, the Project Lead, if a recreation specialist, typically transitions to a qualified design professional.

DETERMINE WHO WILL BUILD

Project Lead and Field Office Manager determine whether project will be built by BLM staff or by contractor.

APPROVAL TO PROCEED

Project Lead receives approval to proceed to design development from Field Office Manager.

Responsibility: Project Lead and Design Team

Approval: Field Office Manager

DESIGN DEVELOPMENT

REFINE DESIGN

Design Team refines the preferred design concept and finalizes major design decisions (e.g., number of sites, restrooms and other associated facilities, etc.). Project Lead coordinates review periods with Design Team and ensures that GQBE and other planning and design parameters have been integrated into design.

VALUE ENGINEERING

A formalized Value Engineering review is required if project is over $1M, and recommended if over $500K. Perform Value Engineering as needed to reconcile project with budget and create value through careful review of materials and life cycle costs.

TYPE OF BID/CONTRACT

Project Lead consults with procurement to determine which contract documents will be prepared for selected procurement process.

CLASS B COST ESTIMATE

Project Lead coordinates completion of Class B Cost Estimate with Design Team.

LOCAL PLANNING/ZONING COORDINATION

As appropriate, Project Lead coordinates the approval of project plans with local and state jurisdictions (i.e., departments of transportation, planning board, etc.) to ensure connections to existing utilities and services.

Responsibility: Project Lead and Design Team

Approval: Project Lead

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS

Design Team completes Construction Documents to include drawings and specifications utilizing BLM standards. Project Lead coordinates review periods throughout process to ensure a complete and accurate construction package, as changes after this phase can be costly. A complete construction package is required whether project is to be constructed via contract or by BLM staff.

Responsibility: Project Lead Design Team

Approval: Project Lead

PROJECT SAMPLE 2 (moderately complex)

NEW CAMPGROUND

7 PROCUREMENT / CONSTRUCTION **

ASSIGNMENT OF CONTRACTING OFFICER REPRESENTATIVE (COR)/ PROJECT INSPECTOR (PI)

Field Office Manager selects qualified COR and PI. Project Lead typically serves as COR or PI.

BID PROCESS

Bid documents (bid schedule, construction documents, government estimate and specifications) are prepared for Contracting Officer (CO) to undertake Procurement Action. CO coordinates bidding with interested contractors. A pre-bid meeting is held several weeks prior to bid opening.

CONSTRUCTION CONTRACT AWARD

CO awards contract to successful bidder.

PRE-WORK MEETING

COR and PI conduct pre-work meeting to provide for clear and mutual understanding of contract requirements. Use meeting to identify and resolve issues with site conditions or contract documents.

CONSTRUCTION COORDINATION

COR and PI review contractor's progress schedule, submittals, materials delivery, and other contractual obligations. COR ensures contractor adheres to contract while coordinating with CO. PI conducts inspections and documents progress during construction. Regular progress meetings are held on site with the contractor and subcontractors. COR approves payments, tracks schedules, reviews certified payroll, resolves conflicts, and communicates any issues related to contract progress or need for modifications to the CO.

WALK-THROUGH/PUNCH LIST

Near final construction completion, COR, PI, and key members of the Design Team conduct a walk-through and generate a punch list to correct any deficiencies.

FINAL TESTING

COR coordinates testing facility systems and components (e.g., sensor-operated lighting in restrooms, irrigation systems, etc.).

PROJECT DOCUMENTATION

Contractor provides contract closeout submittals, including as-built drawings, master keys, punch list check-off, operation and maintenance (O&M) manuals, and Final Payment Invoice for processing. Items provided by contractor to be filed/maintained by BLM facilities manager. COR and PI take photographs and prepare brief project summary, which includes project process, costs, and lessons learned.

PROJECT CLOSEOUT

Contracting Officer's Technical Representative recommends project be accepted after punchlist items are remedied.

** NOTE: This example assumes project is constructed by a contractor. If campground were to be constructed by BLM staff, the process would remain basically the same.

Responsibility: Contracting Officer's Technical Representative / Project Inspector
Approval: Contracting Officer

8 POST-CONSTRUCTION

DEDICATION

COR coordinates with Public Affairs Officer to announce opening of new campground and host on-site dedication.

EVALUATE CONTRACTOR

COR and PI evaluate contractor performance.

FACILITY ASSET MANAGEMENT SYSTEM

In coordination with the COR and PI, the FAMS Data Steward enters relevant asset attributes into FAMS.

MAINTENANCE

Ongoing maintenance and condition assessments are provided to ensure safety and comfort of users. COR coordinates with appropriate BLM staff regarding future maintenance needs. Regular maintenance extends the life of the facility. In order to protect the facility from possible future competing developments, pursuing appropriate lands actions is considered, such as self-issued rights-of-way, and/or withdrawal from mineral entry.

Responsibility (FAMS): FAMS Data Steward
Responsibility (Maintenance): Field/District Office Staff

PROJECT SAMPLE 3 (moderately complex)

FIELD OFFICE REHABILITATION

1 LAND USE PLANNING

RESOURCE MANAGEMENT PLAN REVIEW

Reference Resource Management Plan (RMP) and other relevant land use plans (County Comprehensive Plan, City General Plan, etc.) for broad management direction and to ensure conformance with Plan decisions, goals, and objectives.

In this case, facility development and maintenance are addressed in the RMP in a general sense, but specific discussion of this project is not included.

2 ACTIVITY LEVEL PLANNING

ACTIVITY LEVEL PLAN REVIEW

In this case, an approved Facilities Master Plan identifies the need to rehabilitate the existing field office administrative building. Per information in the Asset Management Plan (AMP), the Master Plan notes why the rehabilitation is needed, which improvements are needed to address deficiencies, and how space allocations are to be determined.

POTENTIAL FUNDING

Potential funding sources are identified for project planning, design, construction, and maintenance. Preliminary cost estimate is prepared using cost data included in the FAMS.

Responsibility: Design Professional
Approval: Field Office Manager

FIELD OFFICE REHABILITATION

1 2 **3** 4 5 6 7 8

PROJECT PLANNING

IDENTIFY PROJECT MANAGER

Field Office Manager assigns a Project Manager, someone with relevant project development experience. NOTE: For projects over $2.0M, a Certified Project Manager is required.

FORM PROJECT PLANNING TEAM

Project Manager secures assistance from relevant BLM staff to include an architect, engineer, landscape architect, maintenance staff, etc. The design professionals could work at the Field, District, or State level, or be with the National Operations Center; and will likely transition to the Project Design Team.

PUBLIC SCOPING

Stakeholders are engaged via formal (letters, surveys, meetings) and/or informal (site visits, conversations) methods to determine public support for project and any development/resource concerns they may have.

SITE ANALYSIS

Planning Team conducts analysis to understand opportunities and constraints of the existing field office building and site. Potential opportunities could include increased parking, more water-efficient landscaping, better day-lighting, etc. Identification of constraints could include existing utility lines, adjacent properties, topography, etc. Analysis also identifies architectural and landscape character of the existing building, site, and area. Other analysis data may include soils data, existing vegetation, parking, and circulation.

USER PROFILE

Planning Team prepares a user profile to understand how the office is used and by whom, how many staff occupy the space, and what is needed for staff to perform their jobs.

DEVELOP DESIGN PROGRAM

Project Manager and Planning Team develop the program document in coordination with the Field Office Manager. Program should be detailed enough to clearly identify requirements while allowing flexibility in design. Program elements may include: storage and exhibit space, amount of additional parking, accessibility standards, outdoor gathering areas, cosmetic improvements, and water efficiency.

GREEN STRATEGY GOALS

Green Strategy goals are determined for project development (e.g., use of renewable energy, water-efficiency, use of native plants, recycling, etc.).

PRELIMINARY BUDGET

Project Manager and Planning Team, in conjunction with the Field Office Manager, establish a preliminary budget for design and construction.

PRELIMINARY SCHEDULE

Project Manager and Planning Team prepare a preliminary schedule for completion and identify milestones.

PROJECT DATA SHEET

A Project Data Sheet is prepared by Project Manager and Planning Team and submitted for Deferred Maintenance/Capital Improvements funding.

Responsibility: Project Manager and Planning Team
Approval: Field Office Manager

PROJECT SAMPLE 3 (moderately complex)

FIELD OFFICE REHABILITATION

1 2 3 **4** **5** 6 7 8

CONCEPTUAL DESIGN

FORM PROJECT DESIGN TEAM

Design Team is made up of qualified BLM design professionals (Field-, District-, State-level, or National Operations Center), many of whom will transition from the Project Planning Team, and/or an Architectural Engineering (A/E) contractor.

RESEARCH

Design Team reviews program document, relevant planning documents, GQBE, and other materials as needed.

ALTERNATIVE CONCEPTS

Design Team develops alternative design concepts for field office rehabilitation. Conceptual designs explore room layout, parking configurations, pre-engineered versus on-site construction, options for accessibility, mechanical systems, etc.

CLASS C PRELIMINARY COST ESTIMATE

Project Manager oversees preparation of Class C Preliminary Cost Estimates for each alternative design concept.

SELECT PREFERRED CONCEPT

Based on feedback from Project Manager, Design Team, BLM staff, and stakeholders, the Field Office Manager determines which concept to further refine.

GREEN PROGRAM REGISTRATION

If applicable, Project Manager registers the project with the U.S. Green Building Council (USGBC) LEED program or similar.

APPROVAL TO PROCEED

Project Lead receives approval to proceed to design development from Field Office Manager.

Responsibility: Project Manager and Design Team
Approval: Field Office Manager

DESIGN DEVELOPMENT

REFINE DESIGN

Design Team refines the preferred design concept, and finalizes major design decisions (e.g., number of parking stalls, number of meeting/conference spaces, etc.). Project Manager coordinates review periods with Design Team and ensures that GQBE and other planning and design parameters have been integrated into design.

VALUE ENGINEERING

A formalized Value Engineering review is required if project is over $1M, and recommended if over $500K. Perform Value Engineering as needed to reconcile project with budget and create value through careful review of materials and life cycle costs.

TYPE OF BID/CONTRACT

Project Manager consults with procurement to determine which contract documents will be prepared for selected procurement process.

CLASS B COST ESTIMATE

Project Manager coordinates completion of Class B Cost Estimate with Design Team.

LOCAL PLANNING/ZONING COORDINATION

As appropriate, Project Manager coordinates the approval of project plans with local and state jurisdictions (i.e., departments of transportation, planning board, city council, etc.) to ensure connections to existing utilities and services.

Responsibility: Project Manager and Design Team
Approval: Field Office Manager

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS

Design Team completes Construction Documents to include drawings and specifications utilizing BLM standards. Project Manager coordinates review periods throughout process to ensure a complete and accurate construction package, as changes after this phase can be costly.

FINAL COST ESTIMATE

Design Team develops Final Construction Cost Estimate (Class A) based on final construction documents.

GREEN PROGRAM SUBMITTALS

If applicable, ongoing documentation for LEED or similar programs is performed. Submittals to USGBC to be coordinated by LEED-accredited professional.

Responsibility: Project Manager and Design Team
Approval: Project Manager

PROJECT SAMPLE 3 (moderately complex)

FIELD OFFICE REHABILITATION

1 2 3 4 5 6 **7** **8**

PROCUREMENT / CONSTRUCTION

ASSIGNMENT OF CONTRACTING OFFICER REPRESENTATIVE (COR)/PROJECT INSPECTOR (PI)

Field Office Manager selects qualified COR and PI. Project Manager typically serves as COR. For projects over $2.0M, a Certified Project Manager is required. If Project Manager does not serve as COR, close coordination during construction is required.

BID PROCESS

Bid documents (bid schedule, construction documents, government estimate and specifications) are prepared for Contracting Officer (CO) to undertake procurement action. CO coordinates bidding with interested contractors. A pre-bid meeting is held several weeks prior to bid opening.

CONSTRUCTION CONTRACT AWARD

CO awards contract to successful bidder.

PRE-WORK MEETING

COR and PI conduct pre-work meeting to provide for clear and mutual understanding of contract requirements. Use meeting to identify and resolve issues with site conditions or contract documents.

PERMITS/APPROVALS

If applicable, COR ensures contractor obtains necessary permits and approvals from local jurisdiction.

CONSTRUCTION COORDINATION

COR and PI review contractor's progress schedule, submittals, materials delivery, and other contractual obligations. COR ensures contractor adheres to contract while coordinating with CO. PI conducts inspections and documents progress during construction. Regular progress meetings are held on site with the contractor and subcontractors. COR approves payments, tracks schedules, reviews certified payroll, resolves conflicts, and communicates any issues related to contract progress or need for modifications to the CO.

WALK-THROUGH/PUNCH LIST

Near final completion of contract, COR, PI, and key members of the Design Team conduct a walk-through and generate a punch list to correct any deficiencies.

FINAL COMMISSIONING/ TESTING

COR coordinates testing of major systems. Commissioning includes mechanical systems, CO^2 monitoring systems, energy performance, HVAC systems and associated controls, lighting and day-lighting controls, hot water systems, and renewable energy systems.

PROJECT DOCUMENTATION

Contractor provides contract closeout submittals, including as-built drawings, master keys, punch list check-off, operation and maintenance (O&M) manuals, and Final Payment Invoice for processing. Items provided by contractor to be filed/maintained by BLM facilities manager. COR and PI take photographs and prepare brief project summary, which includes project process, costs, and lessons learned.

PROJECT CLOSEOUT

Contracting Officer's Technical Representative recommends project be accepted after punchlist items are remedied.

Responsibility: Contracting Officer's Technical Representative / Project Inspector

Approval: Contracting Officer

POST CONSTRUCTION

DEDICATION

COR coordinates with Public Affairs Officer to announce opening of rehabilitated facility, if warranted.

EVALUATE CONTRACTOR

COR and PI evaluate contractor performance.

GREEN PROGRAM SUBMITTALS

If applicable, final requirements are submitted for LEED or similar programs.

FACILITY ASSET MANAGEMENT SYSTEM

In coordination with COR, the FAMS Data Steward enters relevant asset attributes into FAMS.

MAINTENANCE

Ongoing maintenance and condition assessments are provided to ensure safety and comfort of users. COR coordinates with appropriate BLM staff regarding future maintenance needs. Regular maintenance extends the life of the facility. In order to protect the facility from possible future competing developments, pursuing appropriate lands actions is considered, such as self-issued rights-of-way, and/or withdrawal from mineral entry.

WARRANTY

COR and facility manager meet with contractor at end of warranty period to address any deficiencies.

Responsibility (FAMS): FAMS Data Steward

Responsibility (Maintenance): Field/District Office Staff

PROJECT SAMPLE 4 (most complex)

VISITOR CENTER

1 2 3 4 5 6 7 8

LAND USE PLANNING

RESOURCE MANAGEMENT PLAN REVIEW

Reference Resource Management Plan (RMP) and other relevant land use plans (County Comprehensive Plan, City General Plan, etc.) for broad management direction and to ensure conformance with Plan decisions, goals, and objectives. In this case, the RMP identifies a need to provide, near municipal services, orientation and information for visitors, a visitor welcome desk, interpretive exhibits, and program space.

ACTIVITY LEVEL PLANNING

ACTIVITY LEVEL PLAN REVIEW

In this case, both an approved Facilities Master Plan and an Interpretive Master Plan address visitor center development. These plans identify the need to provide formalized visitor contact via construction of a new Visitor Center. The Facilities Master Plan provides direction on location, scale/size of facility, etc., whereas, the Interpretive Master Plan addresses the interpretive themes that are to be incorporated into the design and programming.

POTENTIAL FUNDING

Potential funding sources are identified for project planning, design, construction, and maintenance. Prepare a preliminary cost estimate using cost data included in the FAMS.

Responsibility: Design Professional

Approval: Field Office Manager

PROJECT SAMPLE 4 (most complex)

VISITOR CENTER

1 2 **3** 4 5 6 7 8

PROJECT PLANNING

ASSIGN CERTIFIED PROJECT MANAGER

The Deputy State Director assigns a Certified Project Manager for the project. The Project Manager coordinates the planning/design/construction process and sees the project through to completion. For a project of this complexity (over $2.0M), a Certified Project Manager with training and prior experience in complex construction projects is required.

FORM PROJECT PLANNING TEAM

Project Manager secures assistance from relevant BLM staff to include an architect, engineer, landscape architect, interpretive specialist, recreation/visitor services staff, maintenance staff, public affairs officer, etc. The design professionals could work at the Field, District, or State level, or be with the National Operations Center, and will likely transition to the Project Design Team.

NEPA INITIATION

Project-level NEPA is initiated.

PUBLIC SCOPING

Stakeholders are engaged via formal (letters, surveys, meetings) and/or informal (site visits, conversations) methods to determine public support for project and any development/ resource concerns they may have.

SITE ANALYSIS

Planning Team conducts analysis to understand opportunities and constraints of the sites being considered for construction of the new Visitor Center. Potential opportunities could include proximity to existing roads/transportation systems, proximity to existing services, scenic views, etc. Identification of constraints could include existing overhead utility lines, steep topography, unstable soils, etc. Analysis also identifies architectural and landscape character area. Other analysis data may include existing vegetation, sun angles, prevailing winds, etc.

USER PROFILE

A user profile is prepared to understand who would use the Visitor Center and how. What types of spaces are needed for interpretive programming and for visitor contact. What types of spaces are needed for staff to perform their jobs?

DEVELOP DESIGN PROGRAM

Project Manager and Planning Team develop the program document in coordination with the Field Office Manager. Program should be detailed enough to clearly identify requirements while allowing flexibility in design. Program elements may include: storage and exhibit space, parking requirements, accessibility standards, outdoor gathering areas, and water-efficient native landscaping.

GREEN STRATEGY GOALS

Green Strategy goals are determined for project development (e.g., use of renewable energy, water-efficiency, use of native plants, recycling, etc.).

PRELIMINARY BUDGET

Project Manager and Planning Team, in conjunction with the Field Office Manager, establish a preliminary budget for design and construction.

PRELIMINARY SCHEDULE

Project Manager and Planning Team prepare a preliminary schedule for completion and identify milestones.

PROJECT DATA SHEET

A Project Data Sheet is prepared by Project Manager and Planning Team and submitted for Capital Improvements funding.

Responsibility: Project Manager and Planning Team

Approval: Field Office Manager

PROJECT SAMPLE 4 (most complex)

VISITOR CENTER

1 2 3 **4** **5** 6 7 8

CONCEPTUAL DESIGN

FORM DESIGN TEAM

Design Team is made up of qualified BLM design professionals (Field-, District-, State-level, or National Operations Center), many of whom will transition from the Project Planning Team, and/or an Architectural Engineering (A/E) contractor.

RESEARCH

Design Team reviews program document, relevant planning documents, GQBE, and other materials as needed.

ALTERNATIVE CONCEPTS

Design Team develops alternative design concepts for the new Visitor Center. Conceptual designs explore room layout, parking configurations, building orientation, floor plans, mechanical systems, etc.

CLASS C PRELIMINARY COST ESTIMATE

Project Manager oversees preparation of Class C Preliminary Cost Estimates for each alternative design concept.

SELECT PREFERRED CONCEPT

Based on feedback from Project Manager, Design Team, BLM staff, and stakeholders, the Field Office Manager and Project Manager determine which concept to further refine.

GREEN PROGRAM REGISTRATION

If applicable, Project Manager registers the project with the U.S. Green Building Council (USGBC) LEED program or similar.

NEPA

Project-level NEPA is completed.

APPROVAL TO PROCEED

Project Lead receives approval to proceed to design development from Field Office Manager.

Responsibility: Project Manager & Design Team

Approval: Field Office Manager

DESIGN DEVELOPMENT

REFINE DESIGN

Design Team refines the preferred design concept ,and major design decisions are finalized (e.g., number of parking stalls, number of meeting/conference spaces, etc.). Project Manager coordinates review periods with Design Team and ensures that GQBE and other planning and design parameters have been integrated into design.

CONSTRUCTABILITY REVIEW

Constructability Review performed at approximately 90% design completion. This review should be performed by an independent consultant or a BLM multidisciplinary team.

VALUE ENGINEERING

A formalized Value Engineering review is required for projects over $1M. Perform Value Engineering as needed to reconcile project with budget and create value through careful review of materials and life cycle costs.

TYPE OF BID/CONTRACT

Project Manager consults with procurement to determine which contract documents will be prepared for selected procurement process.

CLASS B COST ESTIMATE

Project Manager coordinates completion of Class B Cost Estimate with Design Team.

LOCAL PLANNING/ZONING COORDINATION

As appropriate, Project Manager coordinates the approval of project plans with local and state jurisdictions (i.e., departments of transportation, planning board, city council, etc.) to ensure connections to existing utilities and services.

Responsibility: Project Manager and Design Team

Approval: Field Office Manager

VISITOR CENTER

1 2 3 4 5 6 7 8

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS

Design Team completes Construction Documents to include drawings and specifications utilizing BLM standards. Project Manager coordinates review periods throughout process to ensure complete and accurate construction package as changes after this phase can be costly.

FINAL COST ESTIMATE

Design Team develops Final Construction Cost Estimate (Class A) based on final construction documents.

GREEN PROGRAM SUBMITTALS

If applicable, perform ongoing documentation for LEED or similar programs. Submittals to USGBC to be coordinated by LEED-accredited professional.

Responsibility: Project Manager & Design Team

Approval: Field Office Manager

PROCUREMENT / CONSTRUCTION

ASSIGNMENT OF CONTRACTING OFFICER REPRESENTATIVE (COR)/PROJECT INSPECTOR (PI)

Field Office Manager selects qualified COR and PI. Project Manager typically serves as COR. For projects over $2.0M, a Certified Project Manager is required. If Project Manager does not serve as COR, close coordination during construction is required.

BID PROCESS

Bid documents (bid schedule, construction documents, government estimate and specifications) are prepared for Contracting Officer (CO) to undertake procurement action. CO coordinates bidding with interested contractors. A pre-bid meeting is held several weeks prior to bid opening.

CONSTRUCTION CONTRACT AWARD

CO awards contract to successful bidder.

PRE-WORK MEETING

COR and PI conduct pre-work meeting to provide for clear and mutual understanding of contract requirements. Use meeting to identify and resolve issues with site conditions or contract documents.

PERMITS/APPROVALS

If applicable, COR ensures contractor obtains necessary permits and approvals from local jurisdiction.

CONSTRUCTION COORDINATION

COR and PI review contractor's progress schedule, submittals, materials delivery, and other contractual obligations. COR ensures contractor adheres to contract while coordinating with CO. PI conducts inspections and documents progress during construction. Regular progress meetings are held on site with the contractor and subcontractors. COR approves payments, tracks schedules, reviews certified payroll, resolves conflicts, and communicates any issues related to contract progress or need for modifications to the CO.

PROJECT SAMPLE 4 (most complex)

VISITOR CENTER

1 2 3 4 5 6 7 8

PROCUREMENT / CONSTRUCTION

WALK-THROUGH PUNCH LIST

Near final completion of contract, COR, PI, and key members of the Design Team conduct a walk-through and generate a punch list to correct any deficiencies.

FINAL COMMISSIONING/ TESTING

COR coordinates testing of major systems. Commissioning includes mechanical systems, CO^2 monitoring systems, energy performance, HVAC systems and associated controls, lighting and day-lighting controls, hot water systems, and renewable energy systems.

PROJECT DOCUMENTATION

Contractor provides contract closeout submittals, including as-built drawings, master keys, punch list check-off, operation and maintenance (O&M) manuals, and Final Payment Invoice for processing. Items provided by contractor to be filed/ maintained by BLM facilities manager. COR and PI take photographs and prepare brief project summary, which includes project process, costs, and lessons learned.

PROJECT CLOSEOUT

COR recommends project be accepted after punchlist items are remedied. BLM assumes ownership of facility.

Responsibility: Contracting Officer's Technical Representative / Project Inspector

Approval: Contracting Officer (CO)

POST-CONSTRUCTION

DEDICATION

COR coordinates with Public Affairs Officer to announce opening of new visitor center and on-site dedication.

EVALUATE CONTRACTOR

COR and PI evaluate contractor performance.

GREEN PROGRAM SUBMITTALS

If applicable, final requirements are submitted for LEED or similar programs.

FACILITY ASSET MANAGEMENT SYSTEM

In coordination with COR, the FAMS Data Steward enters relevant asset attributes into FAMS.

MAINTENANCE

Ongoing maintenance and condition assessments are provided to ensure safety and comfort of users. COR coordinates with appropriate BLM staff regarding future maintenance needs. Regular maintenance extends the life of the facility. In order to protect the facility from possible future competing developments, pursuing appropriate lands actions is considered, such as self-issued rights-of-way, and/or withdrawal from mineral entry.

WARRANTY

COR and facility manager meet with contractor at end of warranty period to address any deficiencies.

Responsibility (FAMS): FAMS Data Steward

Responsibility (Maintenance): Field/District Office Staff

SAMPLE 4

BLM

CHAPTER 6

DESIGN GUIDELINES

INTRODUCTION

This chapter of the GQBE is presented as a quick reference for the various facilities BLM constructs. It is organized into design categories ranging from site considerations such as roads and parking to structures like offices and restrooms, and from recreation facilities like campgrounds and trailheads to site fixtures such as barriers and signs. The design guidelines are a resource for those involved in the planning, design, construction, and maintenance of BLM's built environment—including, but not limited to, architects and landscape architects, engineers, recreation planners, managers, and maintenance staff—and including BLM personnel as well as contractors, concessionaires, and volunteers.

DESIGN CATEGORIES

The design guidelines are divided into four design categories illustrated with the following title and associated graphic icon at the top right corner of every spread:

Site
SITE PLANNING | ROADS | PARKING | GRADING | DRAINAGE | VEGETATION | UTILITIES

Recreation Facilities
CAMPGROUNDS | PICNIC AREAS | BOATING FACILITIES | OVERLOOKS & WAYSIDES | TRAILHEADS | TRAILS

Structures & Associated Spaces
ADMINISTRATIVE OFFICES | VISITOR FACILITIES | FIRE FACILITIES | MAINTENANCE BUILDINGS & WAREYARDS | RESTROOMS | SHELTERS | KIOSKS & INTERPRETIVE STRUCTURES

Site Fixtures
BARRIERS | SITE FURNITURE | SIGNS | LIGHTING

PRIMARY PRINCIPLES

In developing the GQBE, it became evident that several design principles were important to be considered no matter what the type of facility. Those commonly applicable, overarching concepts became the PRIMARY principles and are detailed below. These primary principles are used to outline the appropriate level of design for the specific facility types and are indicated by a number within a brown square 0 . The first page in each facility type section uses these five overarching principles to outline the essential ideas and concepts central to each principle as they relate to the particular design problems of each facility type.

1 Plan for Use and Users
To a large extent, the people who will use BLM facilities determine what the design will be. What is to be built? Who will it serve? How many people will use it? How much space is needed? What is the season of use? Researching the needs of users and the requirements of proposed activities (including the level of maintenance) early on in any design process will greatly increase the quality of a facility.

2 Select Appropriate Site
Successful design considers the elements of a particular facility as well as the location of designed facilities within the context of their setting. Whether locating a fence or siting a large visitor center, appropriate site selection is one of the most important factors leading to a quality design. Overall site and facility character is influenced by careful consideration of relative proximity to necessary infrastructure (utilities, roads, transit, amenities, other facilities) as well as the spatial relationships within a natural setting (adjacent to natural features without causing resource degradation).

3 Prepare Site Analysis
Developing designs that are responsive to setting is critical. A detailed site inventory and analysis, including climatic conditions, topography, drainage, vegetation, soils, wildlife, solar angles, cultural context, and natural and built features, will greatly inform design concepts and appropriate context-sensitive solutions.

4 Implement Green Strategies
When designing for public lands creative solutions that balance protection of resources with accommodation of public uses must be sought. Protecting the site both during construction and afterwards will result in a more aesthetically pleasing facility, increased biodiversity, cleaner water and air, and enhanced visitor experience.

5 Design a Cohesive Environment
Sites are designed holistically and as a unified composition of buildings, spaces, and site elements that connect with one another and with natural features. Using a consistent family of materials, colors, textures, forms, and details creates a cohesive character, reduces visual clutter, contributes to an overall appearance of quality, while providing a sense of place.

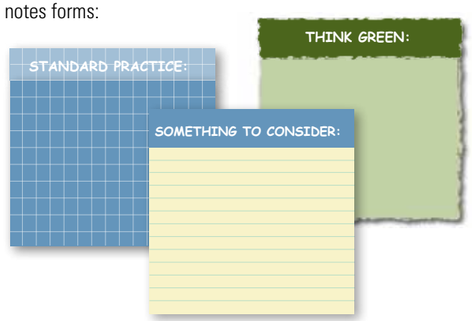
SECONDARY PRINCIPLES

In addition to the five primary principles in each section, the unique facility types and design challenges also necessitate a certain number of more specific principles. These specific principles, indicated by a number within a green circle 0 , are intended to emphasize particular design ideas that are not directly addressed by the five primary principles.

The design guidelines sections that follow illustrate how the primary and secondary design principles apply to particular facilities. Photographs, sketches, and annotated diagrams are used to identify where and how the principles were applied.

The digital version of the GQBE allows users to quickly move from one facility type to another via hyperlinks at the bottom of the first page of each section. This recognizes that most facility developments include many of the facility types in the GQBE. For example, when planning and designing a campground it would be useful to reference not only the campground section, but also the sections on roads, parking, restrooms, trails, vegetation, grading, etc.

Additional details, ideas, suggestions, and standards are provided in informational text boxes and in the following three notes forms:



SITE PLANNING

Site planning is the process during which site elements are combined into a cohesive arrangement on a given site. Site elements are located with respect to the opportunities and constraints of the site as well as to respond to user needs. Successful site planning integrates the needs of various users into a single plan to create a safe, functional, and attractive facility that allows for positive visitor experiences while also respecting the integrity of the natural and cultural character of the place. Whether designing a back-country trailhead or a visitor center, collaboration amongst a range of stakeholders and designers increases the likelihood of developing a quality facility.

1 Plan for Use and Users:

- Identify users, purpose, and function of facilities
- Consider long-term maintenance
- Identify the anticipated type and volume of traffic
- Separate uses as appropriate
- Select appropriate surface materials
- Determine space requirements for facilities and uses
- Plan for accessibility
- Provide protection from the elements (sun, rain, wind, snow) as needed
- Create an intuitive and recognizable entrance to site

2 Select Appropriate Site:

- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of facilities
- Locate facilities on gently sloping terrain to minimize grading
- Identify, weigh, and balance the attractiveness (environmental, cultural, accessibility) of a site against the inherent costs in its development (environmental, cultural, hazards, energy, operational)

3 Prepare Site Analysis:

- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views into and from site
- Identify areas with safety and resource protection concerns clearly
- Study sun angles to best provide shade
- Determine the carrying capacity of a site based on the sensitivity of site resources and the ability of the land to regenerate itself

4 Implement Green Strategies:

- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Utilize passive solar design techniques
- Rehabilitate/reuse/recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.)
- Use pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas
- Consider life cycle costs of project
- Consider on-site waste treatment

5 Design a Cohesive Environment:

- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to remoteness of setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

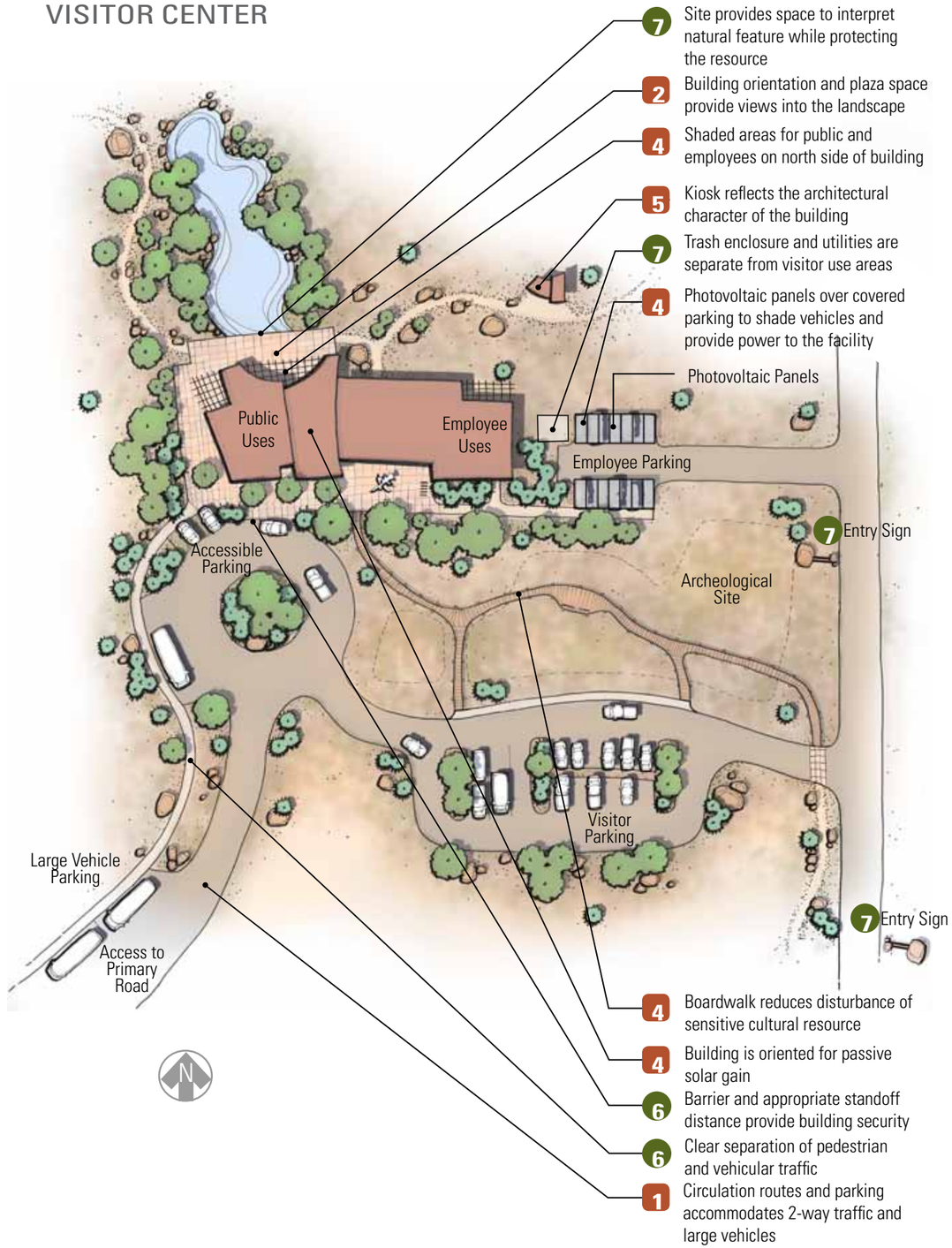
6 Design for Safety and Security:

- Provide accessibility to all buildings, amenities, and attractions
- Assess the potential for vandalism and design to reduce risk
- Design safe pedestrian and vehicular circulation patterns
- Provide security for site and building access
- Provide for safe storage and handling areas for potentially hazardous materials

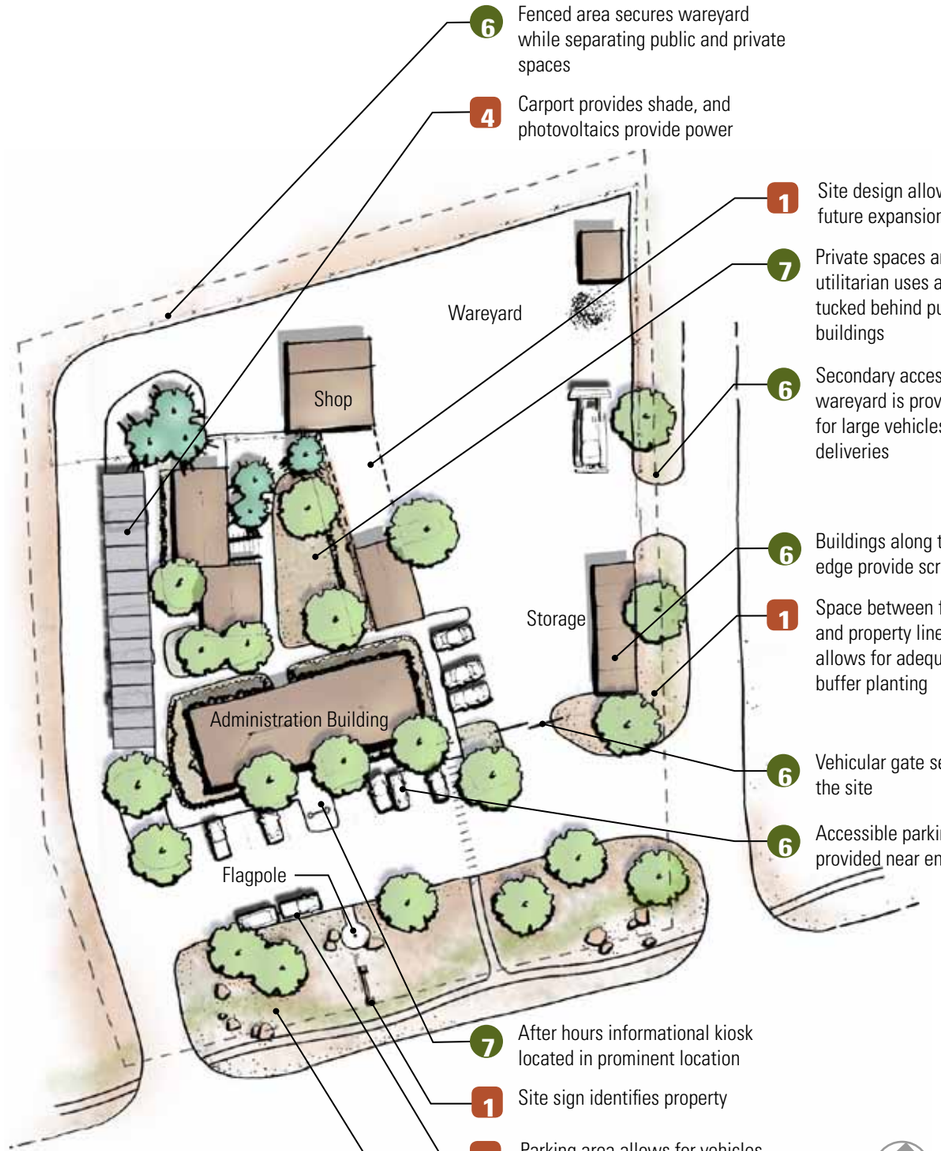
7 Design Visitor Experience:

- Plan arrival sequences carefully to give a positive first impression of facility
- Educate visitors about the unique features of the site

VISITOR CENTER



ADMINISTRATION & MAINTENANCE



6 Fenced area secures wareyard while separating public and private spaces

4 Carport provides shade, and photovoltaics provide power

1 Site design allows for future expansion

7 Private spaces and utilitarian uses are tucked behind public buildings

6 Secondary access to wareyard is provided for large vehicles and deliveries

6 Buildings along the edge provide screening

1 Space between fence and property line allows for adequate buffer planting

6 Vehicular gate secures the site

6 Accessible parking is provided near entry

7 After hours informational kiosk located in prominent location

1 Site sign identifies property

1 Parking area allows for vehicles of all sizes. Continuous pull-through layout allows easy navigation for larger vehicles

4 Vegetated swale infiltrates stormwater on site

5 Site elements are visually consistent

4 Boardwalks protect low-lying areas by keeping visitors in designated areas

6 Pedestrian and vehicular traffic is clearly separated

6 All amenities on site are accessible

SOMETHING TO CONSIDER:

- Consult geotechnical report for recommendations regarding unstable soils and buildable limitations
- When preparing site plan, use building floor plans to show relationships between indoor and outdoor spaces

Blackwell Island Recreation Site, Idaho

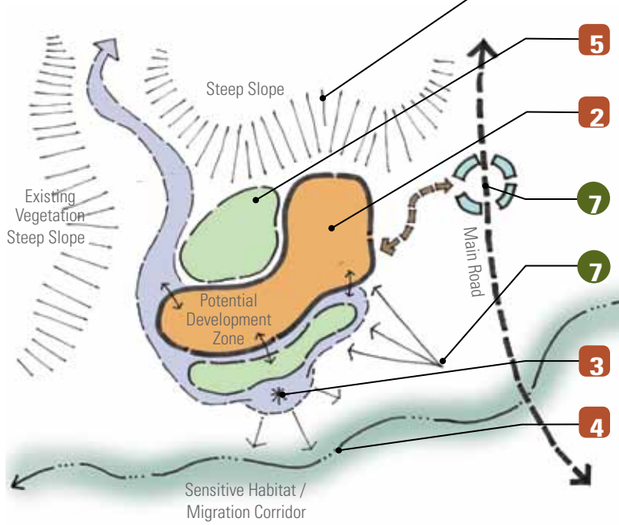
STANDARD PRACTICE:

- Understand and design to meet Visual Resource Management (VRM) objectives

4 Pervious areas are integrated into parking at base of planted islands; runoff from the paved surfaces is directed into some of these areas

2 3 4 Native trees are preserved and integrated into the parking layout to reduce visual impact of parking and to provide shade

PROJECT PLANNING



3 Steep slopes and unbuildable areas are identified

5 Key natural features (vegetation masses, rock formations) are integrated into site diagram

2 Relatively flat ground for parking and structures is identified

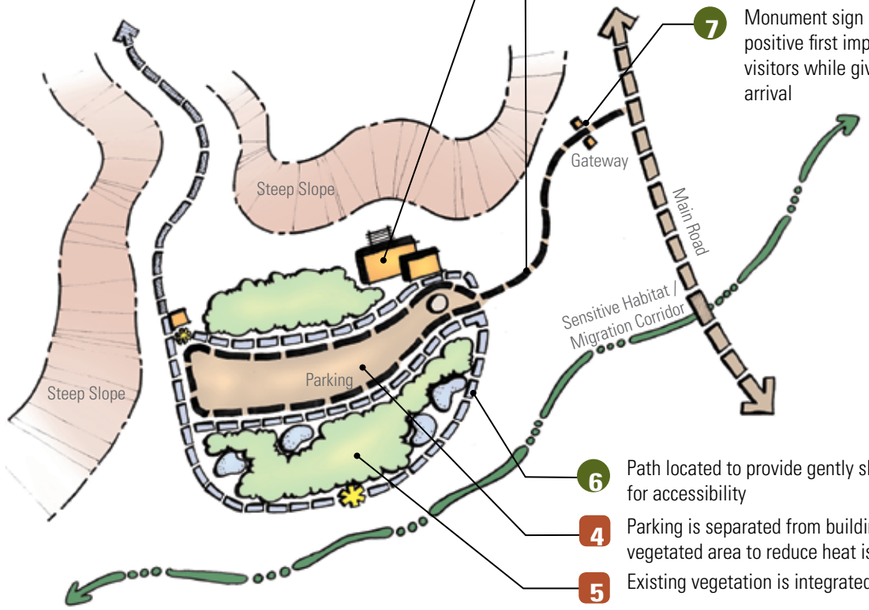
7 Location of potential access points ensures safe access and minimizes extension of utilities

7 Significant views into site are identified to orient visitors

3 Potential access areas to trails and overlooks are located

4 Use areas are set back to preserve sensitive habitat

CONCEPTUAL DESIGN



4 Building uses passive solar alignment by orienting long facades north to south. Shade structure connected to building provides usable outdoor space on north side

4 Entry road follows contours to minimize disturbance

7 Monument sign helps provide positive first impressions to visitors while giving a sense of arrival

6 Path located to provide gently sloping grades for accessibility

4 Parking is separated from building by vegetated area to reduce heat island effect

5 Existing vegetation is integrated into site plan

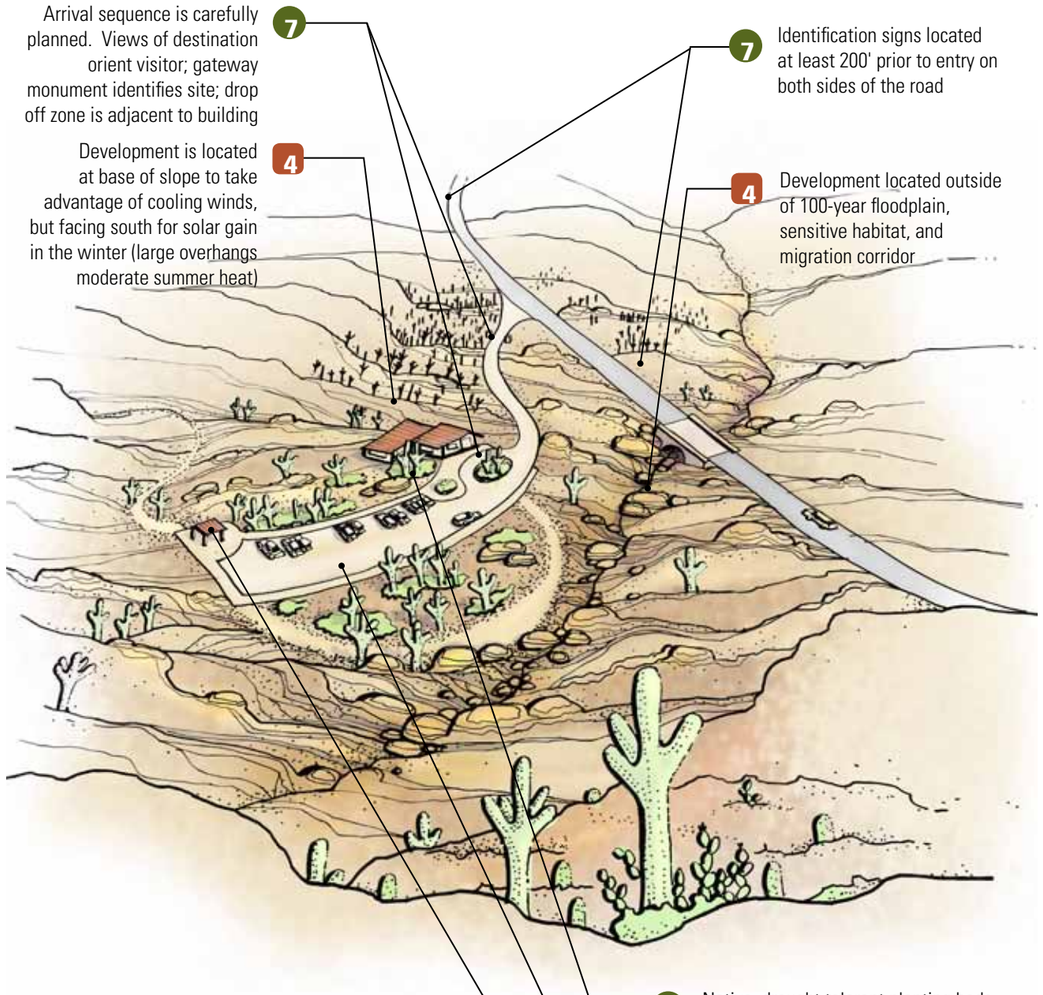
DESIGN DEVELOPMENT

Arrival sequence is carefully planned. Views of destination orient visitor; gateway monument identifies site; drop off zone is adjacent to building

7 Identification signs located at least 200' prior to entry on both sides of the road

Development is located at base of slope to take advantage of cooling winds, but facing south for solar gain in the winter (large overhangs moderate summer heat)

4 Development located outside of 100-year floodplain, sensitive habitat, and migration corridor



4 Native, drought tolerant planting beds are carefully sited to provide shade and an attractive entry

4 Light-colored paving is used to reduce heat island effect

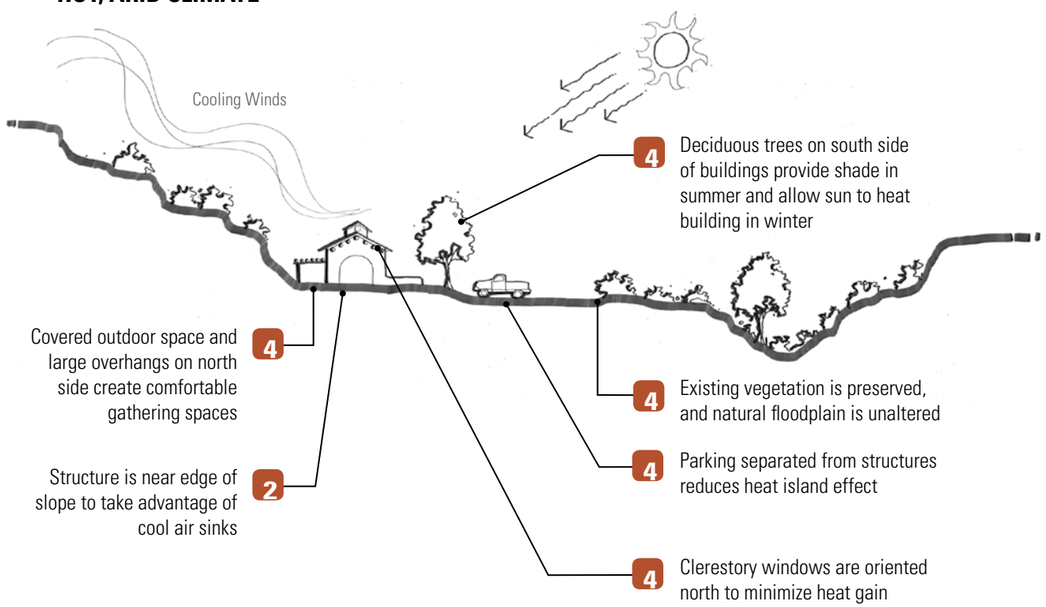
5 Site features match to form a cohesive family of elements

THINK GREEN:

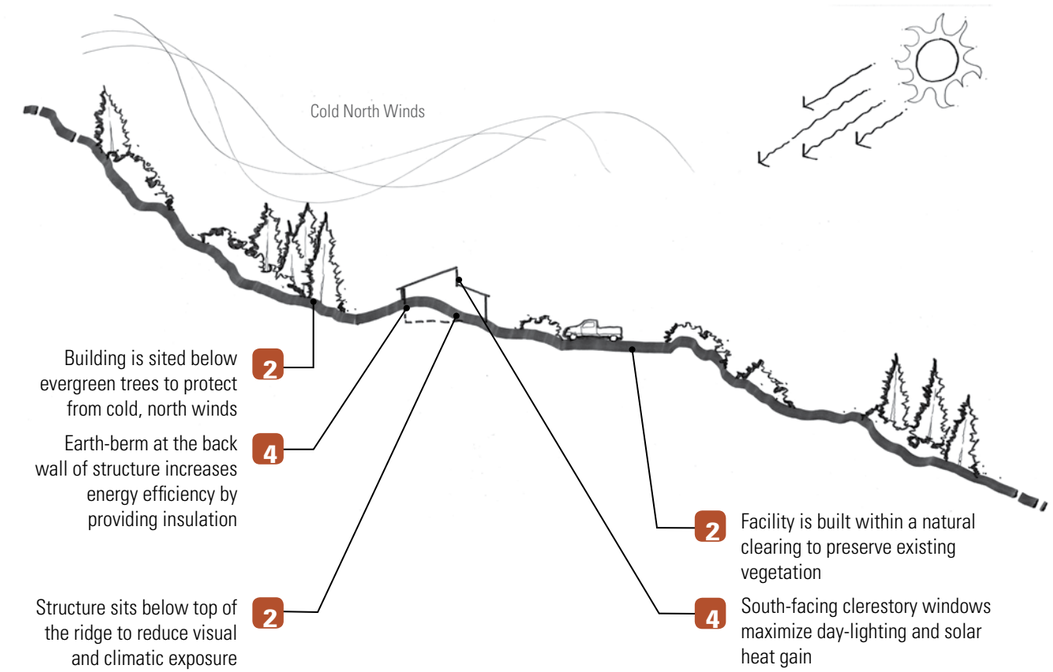
- Keep development footprint appropriate distance from bodies of water or wetlands
- Include a restoration/ reclamation plan in the design phase and be sure to save funds to implement it
- Use passive solar techniques to optimize energy usage

STRATEGIES FOR BIOCLIMATIC SITE DESIGN

HOT, ARID CLIMATE



COLD, NORTHERN CLIMATE



REGIONAL BIOCLIMATIC STRATEGIES FOR SITE PLANNING AND DESIGN

	CLIMATE ZONE			
	HOT AND ARID	HOT AND HUMID	TEMPERATE	COLD
SUN	• Avoid heat-absorbing materials; use thick walls or earth shelters • Use pergola and trellis structures for shade • Provide large overhangs on buildings • Avoid large areas of exposed glass • Shade use areas with low water requiring native trees and shrubs • Site buildings with east-to-west orientation to minimize western sun exposure	• Maximize shade through the use of plantings • Use pergola and trellis structures for shade • Use screened terraces to provide relief from direct heating of main structure • Provide large overhangs on buildings • Use high ceilings and vent roof systems	• Site structures on southerly slopes for solar gain in winter • Avoid northern entrances to buildings • Plant deciduous trees for afternoon shade	• Site structures on southerly slopes for solar gain in winter • Cold climate siting benefits from steeper slopes for better solar access • Avoid northern entrances to buildings • Plant deciduous trees for summer shade • Use earthshelters to protect from summer sun
WIND	• Site structures at toe of slopes for exposure to cool air flows at night • Deflect hot winds with vegetation walls and screens	• Site structures near top of slopes for exposure to breezes • Avoid excessive earth mounding that may trap moist air • Maximize breezes through the use of canopy trees with a loose, open pattern. • Avoid tall solid walls that block cooling breezes	• Site structure on middle to upper slope for access to light winds, but protection from high winds • Use landforms, plants, and structures to divert northerly winter winds while allowing cooling summer breezes • Use earthshelters to protect from winter winds	• Site structure on middle to lower slope for wind protection • Use coniferous plantings to block cold winds • Avoid topographic depressions that collect cold air • Use earthshelters to protect from winter winds
WATER	• Use drought-tolerant plants and xeriscape principles • Limit impervious surfaces to minimize runoff • Provide positive drainage and use runoff to water plants • Where legal, use water collection, cisterns, and gray water to irrigate establishing plants	• Avoid siting next to stagnant bodies of water • Maximize infiltration of stormwater runoff	• Use stormwater retention/detention ponds for evaporative cooling of the site • Use well-drained foundations to prevent damage from freeze/thaw cycles • Use visually integrated and creative stormwater management	• Foundations for structures and pavement must drain well to prevent damage from freeze/thaw cycles

ROADS

Roads provide the primary means of traveling through BLM lands. In some instances, they are a means to an end, allowing those using public lands to get from one destination to another. In other instances, traveling the road itself is the destination, as is the case with National Scenic Byways and BLM Backcountry Byways. Care should be taken to ensure that roads are designed to respond to the landscape character, protect the natural and cultural resources through which they pass, allow for safe passage, and provide an interesting driving experience.

1 Plan for Use and Users:
- Identify users, purpose, and function of vehicles
- Consider long-term maintenance
- Identify the anticipated type and volume of traffic
- Select appropriate surface materials
- Utilize appropriate design standards for use
- Plan for accessibility
- Plan for wildlife in sensitive migration corridors (e.g., below-grade crossings, fencing)

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Maximize views of natural features and minimize views of roads

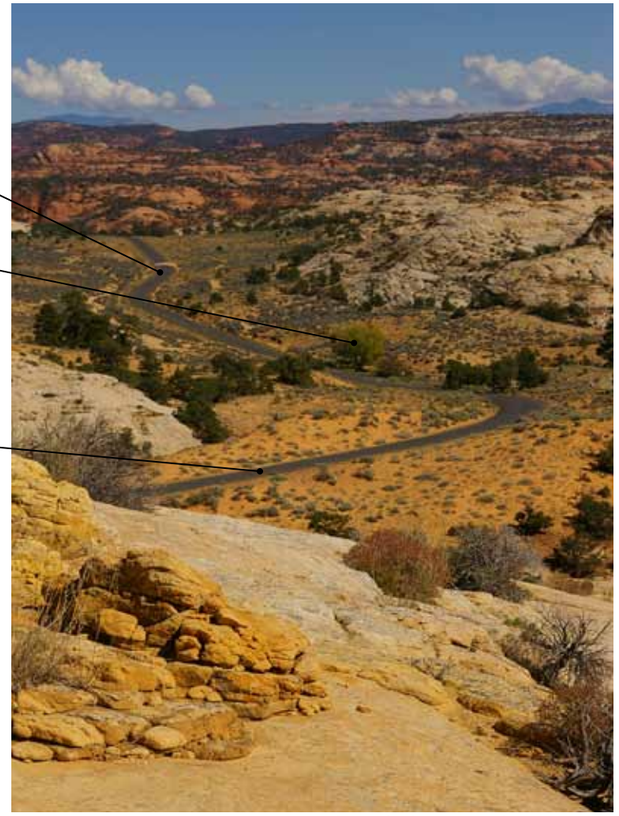
3 Prepare Site Analysis:
- Compile information about site conditions, including: natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for road construction
- Identify views from road
- Identify clearly any areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.)
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project
- Minimize vegetation clearing on roadway shoulders to reduce erosion and preserve habitat
- Use rockery walls for slope retention where appropriate

5 Design a Cohesive Environment:
- View the entire site as a whole and design the road to fit well with site features, facilities, and surrounding landscape character
- Create visual consistency between surfacing materials and surrounding landscape
- Correspond level of development to remoteness of setting
- Use materials that are durable
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter
- Sculpt cut slopes to achieve natural appearance

6 Design for Safety and Security:
- Design roads for appropriate speeds and width that meet the anticipated/planned usage
- Utilize traffic-calming measures to help slow traffic speeds
- Utilize ditches, swales, vegetation, and grade changes to clearly define road edge and manage vehicular routes
- Retain, revegetate, and manage roadside vegetation

7 Design Visitor Experience:
- Vary road alignment to take advantage of land forms and views
- Use changes in road materials, widths, and approach to provide interest
- Provide interest along road corridor by framing views and directing attention to landscape features
- Consider the road an access to viewing the landscape and scenic quality of the area



Road alignment curves naturally through landforms and focuses views on area scenery — 7

Context sensitive road alignment preserves trees adjacent to road — 4

Minimal grading integrates road into natural topography — 4

STANDARD PRACTICE:

- Refer to BLM Manual Section 9113-Roads
- AASHTO geometric standards for low-volume, low-speed, single-lane, and unpaved roads may not be applicable to BLM roads.

Burr Trail Road - Scenic Backway, Utah

2 Disturbance and earthwork is minimized by following existing terrain

6 7 Speeds are controlled and interest added by varying road alignment

6 Roadway is defined with vegetation up to road edge and change in grade

Valley of the Gods Road - Scenic Backway, Utah

5 Vertical wood barriers along road create a unifying site feature

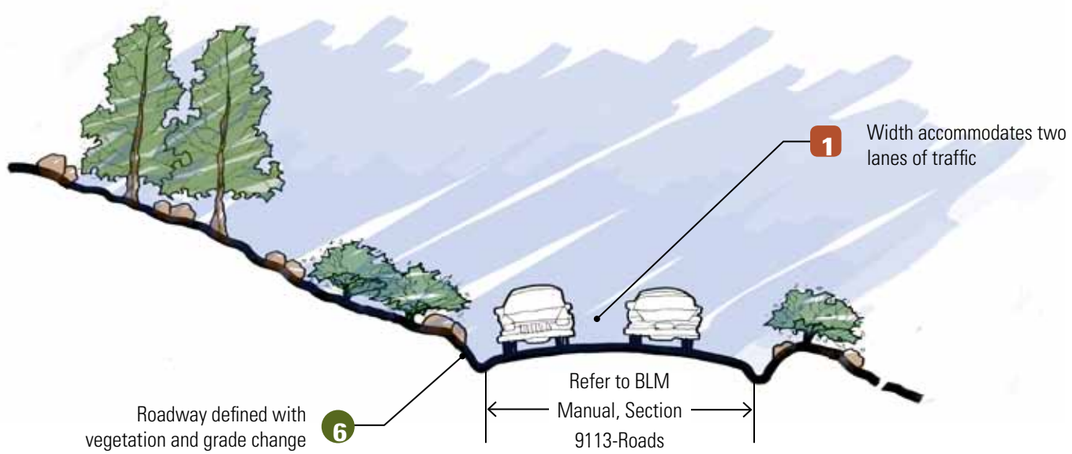
1 Turning radii and road widths are appropriate for trucks towing trailers

6 Subtle barriers and vegetation along roadside keep vehicles within corridor

1 Gentle curves and soft surface are appropriate for the low intended travel speeds into site

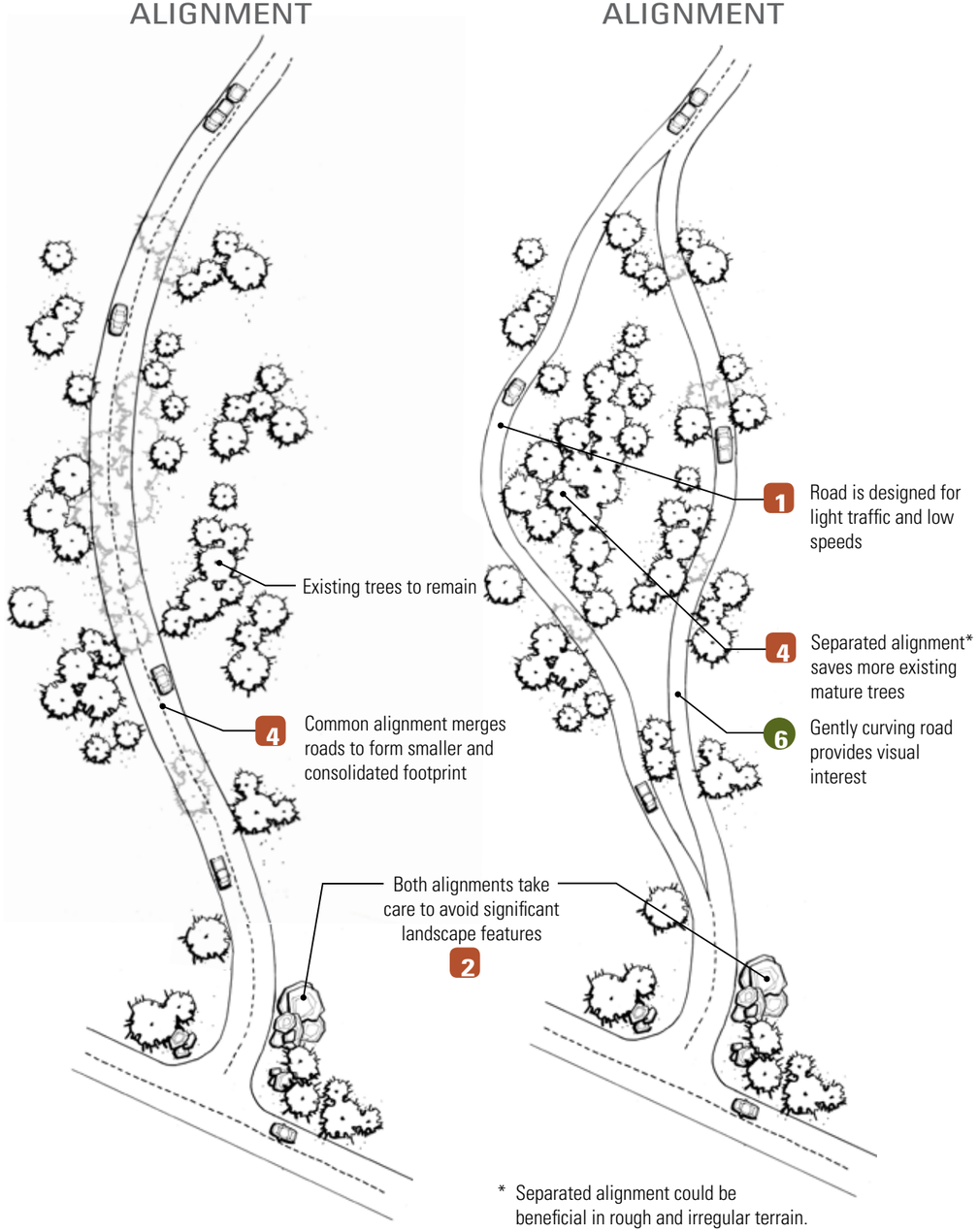
Jerry Creek Bridge Day Use Site, Montana

TYPICAL DOUBLE-LANE ROAD



COMMON ALIGNMENT

SEPARATED ALIGNMENT



* Separated alignment could be beneficial in rough and irregular terrain.

Red Rock Canyon National Conservation Area, Nevada

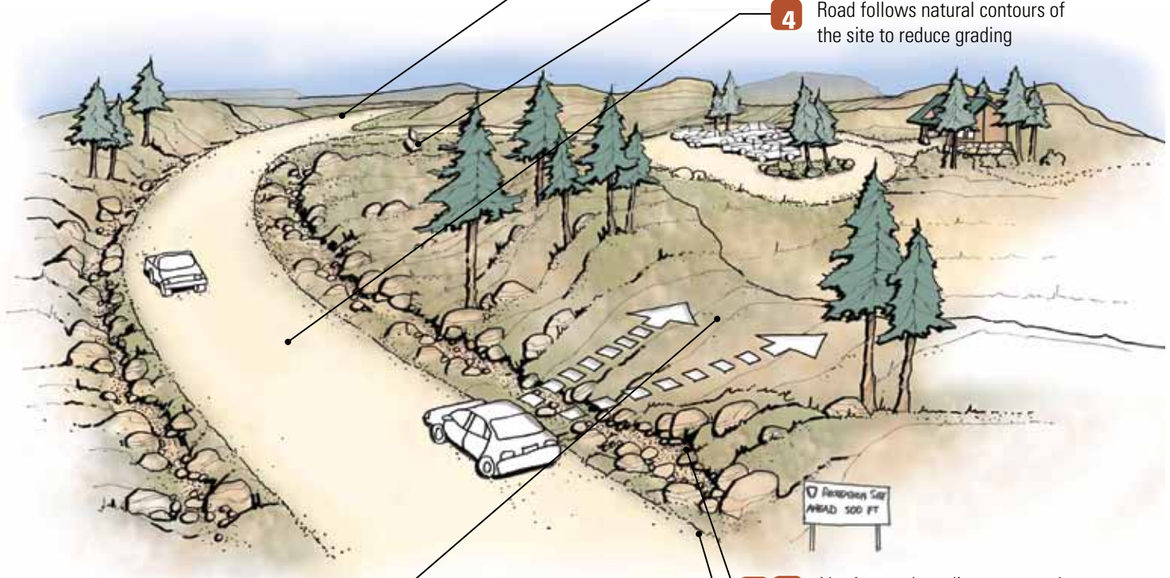
4 Low-water crossing is provided along perennial stream bed

5 Materials are durable

6 Change in materials serves as a traffic-calming device

SOMETHING TO CONSIDER:

- Use traffic-calming techniques to reduce speeds
- Reducing straight sections of road can help reduce speeds, enhance interest, and hold driver's attention to create safer driving conditions



7 Curves in road provide visual interest; as cars travel, visitors view the landscape from different angles

5 Identification sign is located along road corridor

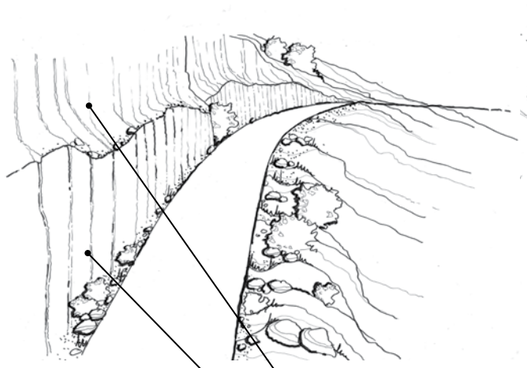
4 Road follows natural contours of the site to reduce grading

7 Road alignment and break in landform provide views to the destination, creating a legible arrival sequence

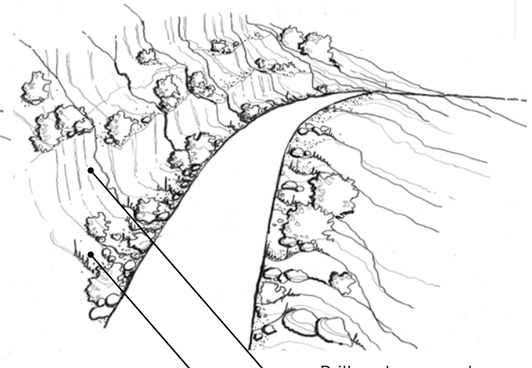
4 5 Varying grades adjacent to road mimics the natural landscape and reduces runoff

4 Vegetated swale collects water from roadway

CONVENTIONAL



CONTEXT-SENSITIVE



4 5 Rock sculpting follows fracture lines and bedding planes within bedrock, repeating the natural lines and textures of landscape

5 Benching and terracing provides natural rock massing and helps establish vegetation to blend the roadcut with its surroundings

6 Rock walls are offset from roadway for driver safety

Interstate 70 - Vail Pass, Colorado

STANDARD PRACTICE:

- Bridges, culverts, tunnels, cattle guards, and other structures must have a minimum curb-to-curb or rail-to-rail width of 14 feet for single-lane roads and 24 feet for double-lane roads

THINK GREEN:

- Use native vegetation to naturalize appearance of roadside and to stabilize slopes
- Consider using vegetated drainages or rock arrangements to dissipate water velocity and reduce erosion

PARKING

Parking areas are a necessary part of most BLM facilities. While providing an important function, they can also diminish natural scenery, degrade streams and wetlands, and present other environmental and aesthetic problems. If not well-defined, visitors may drive beyond acceptable parking area limits, harm native vegetation, and contribute to erosion. Designers should take care to create safe environments that serve pedestrians as well as vehicles by clearly defining vehicular routes.

1 Plan for Use and Users:

- Identify users, purpose, and function of vehicles
- Consider long-term maintenance
- Identify the anticipated type and volume of traffic
- Separate vehicular and pedestrian circulation and provide logical circulation routes to site amenities
- Select appropriate surface materials
- Utilize appropriate design standards to delineate parking areas
- Plan for accessibility
- Use materials that are durable
- Create an intuitive and recognizable entrance to parking areas that reinforces a sense of arrival for visitors
- Design parking to accommodate average usage, not peak usage
- Identify overflow parking
- Install barriers to contain parking

2 Select Appropriate Site:

- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Minimize views of parking
- Locate parking areas on gently sloping terrain to minimize grading
- Provide sufficient buffer widths between roads and parking areas
- Allow for future expansion

3 Prepare Site Analysis:

- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for parking
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade
- Assess drainage patterns that will be impacted, and plan for realignment

4 Implement Green Strategies:

- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g. bioswales, filter strips, raingardens, etc.)
- Consider pervious paving systems
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to parking areas and use light-colored paving materials where appropriate
- Consider life cycle costs of project

5 Design a Cohesive Environment:

- View the entire site as a whole and design the parking areas to fit well with site features, facilities, and surrounding landscape character
- Create visual consistency between surfacing materials and wheelstops and surrounding landscape
- Correspond level of development to remoteness of setting
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:

- Use separated walks, striped crosswalks. changes in color or texture, and barriers to create clearly defined, safe pedestrian zones
- Ensure adequate space for ingress and egress and maintain adequate site distance
- Provide clearly identified, accessible parking spaces that are sized according to standards
- Use traffic-calming techniques to help slow traffic speeds

Parking area is tucked along edge of forest and shaded by existing trees (2, 4)

Accessible parking is clearly identified and located near amenity (6)

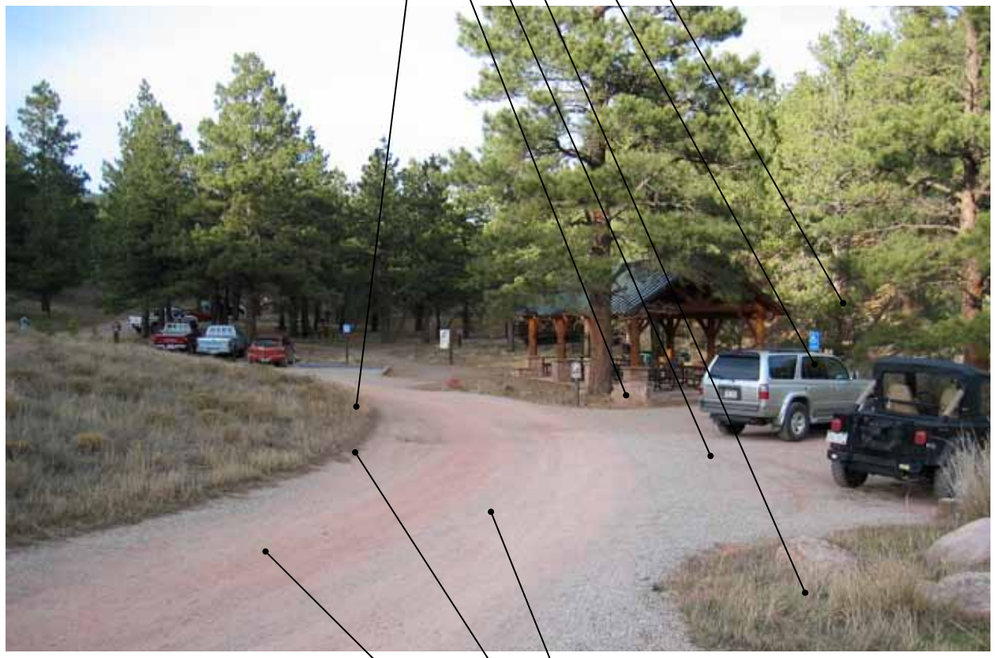
Parking is arranged in small clusters, separated by areas of native grass and boulders (5)

Generously sized parking stalls allow for pedestrian circulation around vehicles (6)

Edge is defined by irregular placement of boulders and toe of slope (5)

THINK GREEN:

- Develop an erosion and sediment control plan
- Direct drainage to vegetated areas
- Preserve existing vegetation
- Provide shade to parking areas
- Consider permeable paving
- Use local materials



Heil Ranch, Colorado

5 One-way drive reduces visual impact of paving surface

5 Road alignment at base of slope fits in to natural topography

4 Drainage is directed into adjacent vegetated areas by maintaining cross-slope

1 Pull-through parking for large vehicles and those towing trailers is separated from other parking areas

4 Vegetated islands reduce impervious surface area, lessening stormwater runoff

5 Parking stalls are tucked between vegetated islands, lessening visual impact

6 Accessible parking stalls are located near entry

6 Clearly defined pedestrian walkway increases safety for pedestrians

4 Planted islands provide shade to parking area

4 Wheel stops define individual parking stalls and prevent unintentional expansion

2 Parking configuration protects vegetation and topography

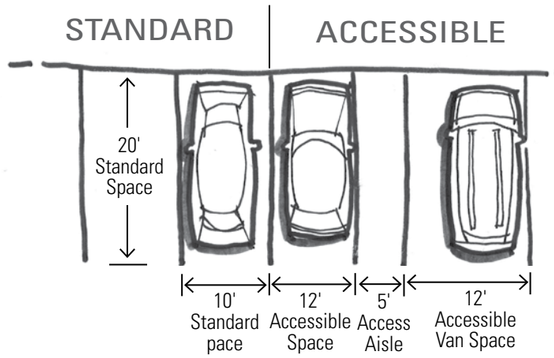
Wildwood Recreation Area, Oregon

4 Parking area is clearly defined and development footprint is minimized

5 Vegetation is allowed to re-establish itself up to edge of pavement

6 Wheel stops separate pedestrian zones from vehicular traffic

1 Though asphalt is impervious, it holds up well to high use and abundant rainfall in this climate



SOMETHING TO CONSIDER:

Common Traffic-Calming Techniques:

- Gentle curves
- Material changes
- Medians/parking islands
- Lane narrowing
- One-way lanes
- Speed bumps
- Raised pedestrian crossings

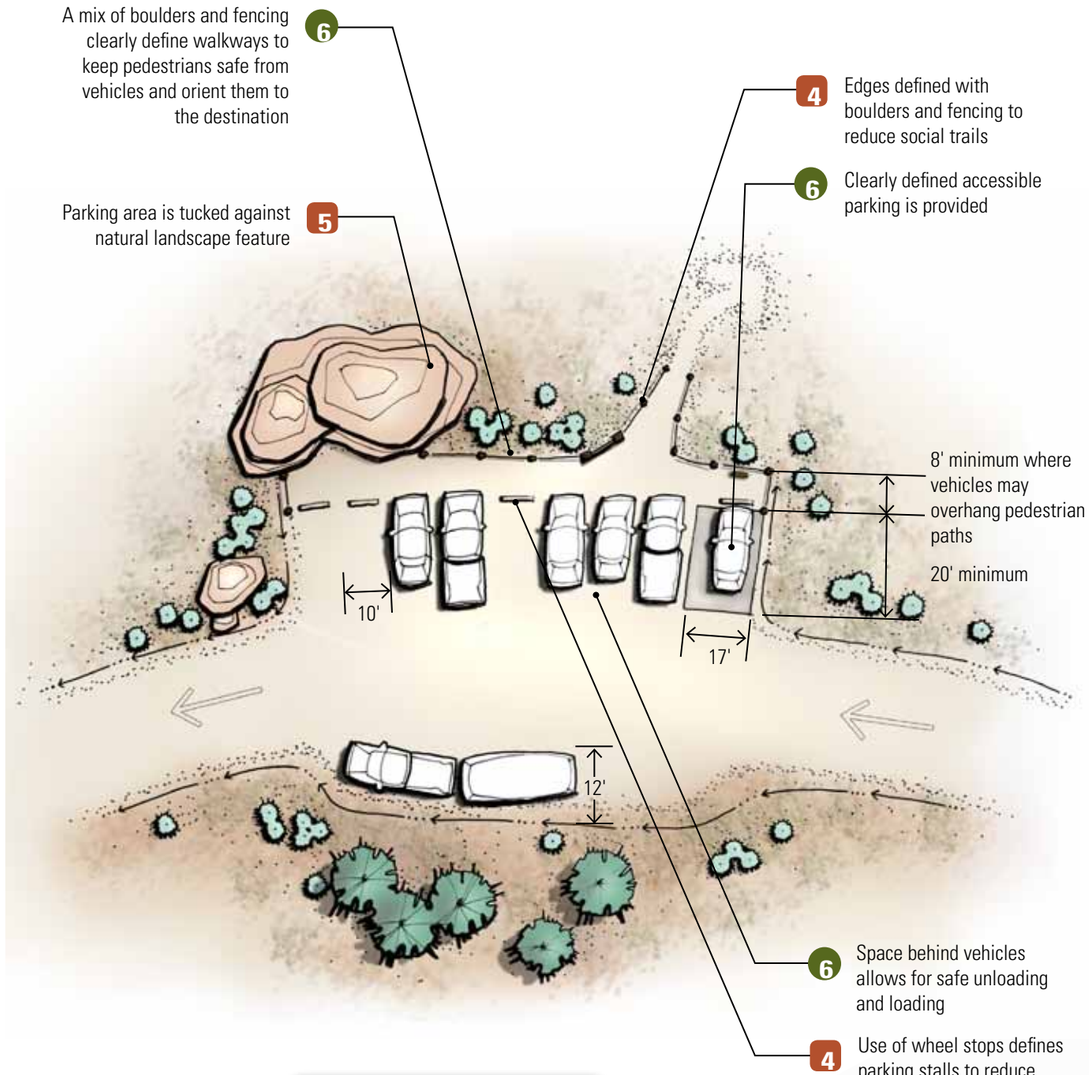
Irvine, California

4 When mature, trees will shade parking, creating a comfortable environment and reducing heat island effect

5 Planted islands visually break up parking areas

4 Native trees and grasses are drought-tolerant and appropriate to climate

1 Asphalt paving is appropriate for this urban park, which receives heavy visitation



STANDARD PRACTICE:

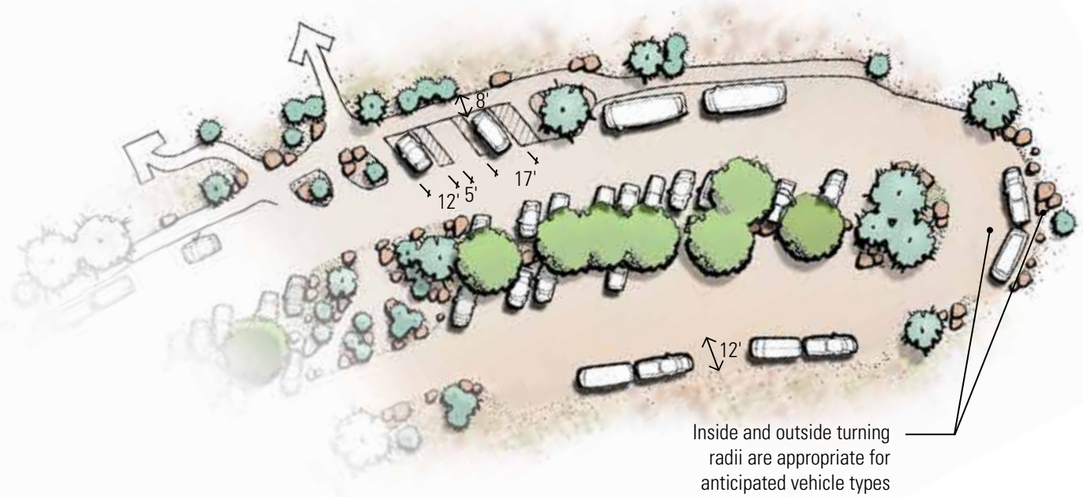
- Standard Stall:
  3,048 x 6,096 mm (10'x20')
- Standard Accessible Stall:
  3,657.6 x 6,096 mm (12'x20')
  + 1,500 mm (5') access aisle

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

STANDARD TURNING RADII

VEHICLE TYPE	AVERAGE DIMENSIONS*	MINIMUM INSIDE TURNING RADIUS	MINIMUM OUTSIDE TURNING RADIUS
1. Passenger vehicle	6' x 16'	13'-0"	23'-0"
2. Passenger vehicle with trailer	6' x 49'	18'-0"	35'-0"
3. Motorhome with trailer	8' x 53'	35'-0"	52'-0"
4. School bus	8' x 40'	26'-0"	44'-0"
5. City bus/Tour bus	8.5' x 40'	33'-0"	54'-0"
6. Garbage truck	8' x 28'	18'-0"	32'-0"
7. Fire truck	8' x 32'	35'-0"	48'-0"

*Dimensions are estimated



GRADING

Grading a site sensitively is crucial to maintaining its landscape character. Grading should be done to avoid leaving scars, which often create long-lasting negative impacts. This is especially true of grading activities that excessively disturb the highly mineralized soils of western lands. Stripping shallow surface soil away can create visual and ecological impacts that may take many years to recover. The overall objective is to re-create a site's natural topography while setting the facility into the landscape forms.

1 Plan for Use and Users:
- Identify uses and determine appropriate space and slope requirements
- Consider long-term maintenance
- Plan for accessibility

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values

3 Prepare Site Analysis:
- Compile information about site conditions, including: natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for grading
- Clearly identify areas with safety and resource protection concerns
- Determine slope criteria, roughness coefficient, erosion control, and revegetation requirements
- Identify areas that may require structural fill

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project
- Balance cut and fill
- Stockpile topsoil and rock for future use
- Reduce soil loss during construction by utilizing silt fencing, mulching, earth dikes, temporary retention systems, and/or sediment trap/basins, etc.
- Roughen ground surface and/or create depressions to allow infiltration and revegetation

5 Design a Cohesive Environment:
- View the entire site as a whole and design the grading to fit well with site features, facilities, and surrounding landscape character
- Create visual consistency between materials and surrounding landscape
- Utilize rock staining, retention of existing rock outcrops, slope-rounding, and blasting techniques to achieve natural appearances
- Prohibit spilling of excess material on downhill slopes

THINK GREEN:
- Preserve existing vegetation
- Develop an erosion and sediment control plan
- Roughen final grades to encourage water infiltration
- Clearly define project limits to reduce unnecessary disturbance

Walkway gradually drops below grade for access to fish viewing area **5**

Location was selected to interpret salmon spawning area **2**

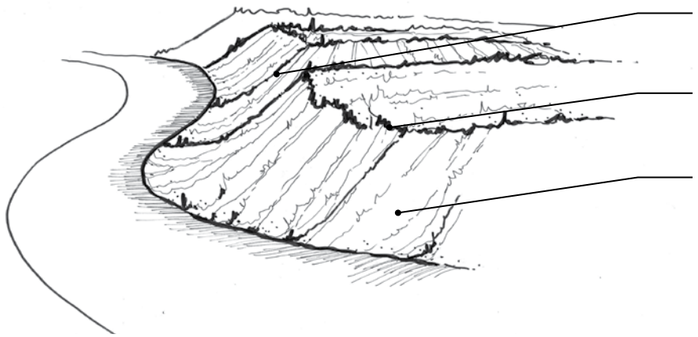
Site grading is well planned to facilitate the visitor use and program **1**

Cascade Streamwatch, Oregon

1 Walkway to featured viewing area is accessible and includes handrails

4 The use of retaining walls allows preservation of existing vegetation and reduces site disturbance

UNDESIRABLE SLOPE CUT METHOD

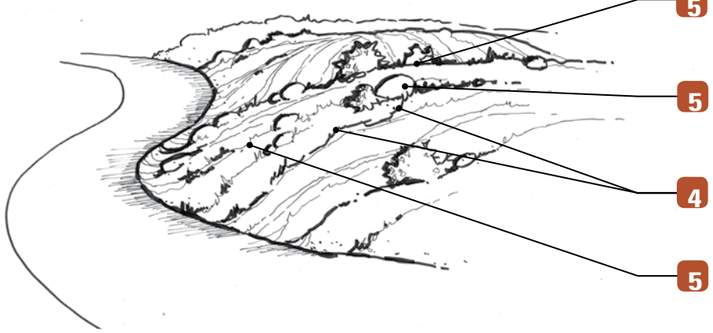


Un-natural terrain

Poor transition of slope

Highly erodible, difficult to revegetate, uniform slopes

PREFERRED SLOPE CUT METHOD



5 A rounded transition is provided to existing terrain at top and bottom of cut-slopes

5 Rock outcroppings and vegetation are incorporated into cut-slope, giving a more natural appearance

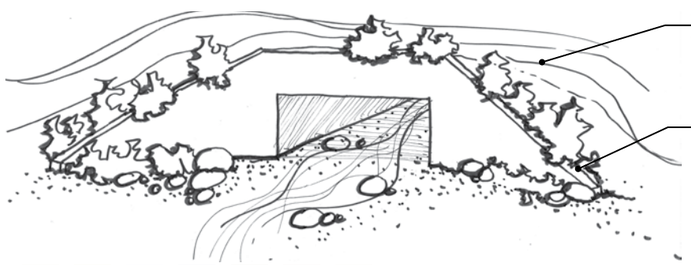
4 A variety of slopes are used to mimic natural terrain and reduce erosion

5 Surface grades are roughened to encourage water infiltration and reduce erosion

Grand Junction Interagency Air Center, Colorado

5 Architecture is designed to fit into the landscape

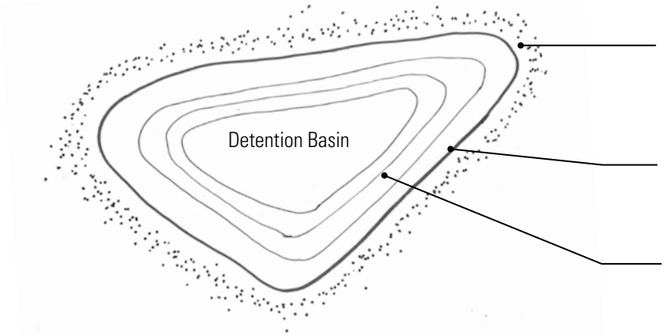
5 Surface is left rough to encourage water infiltration



5 Undulating berms and naturalized edges match landscape character of adjacent areas

5 Wing wall disappears into slope

UNDESIRABLE DETENTION BASIN

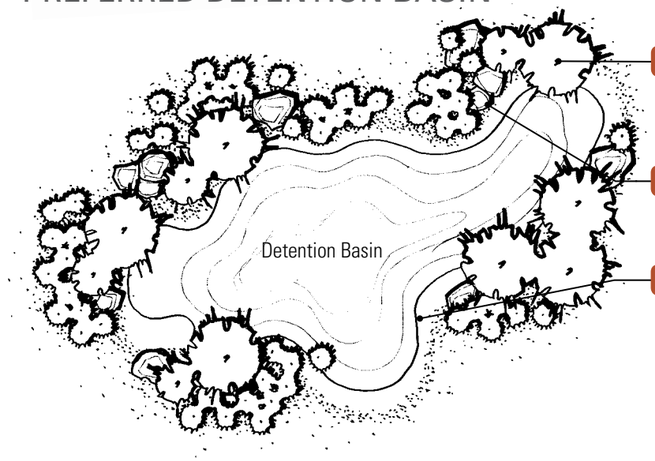


Lack of native vegetation

Design ignores features in the landscape, creating a highly visible and unnatural form

Sheer, unvaried slope and angular top and bottom slopes create an unnatural pond edge and increase erosion

PREFERRED DETENTION BASIN

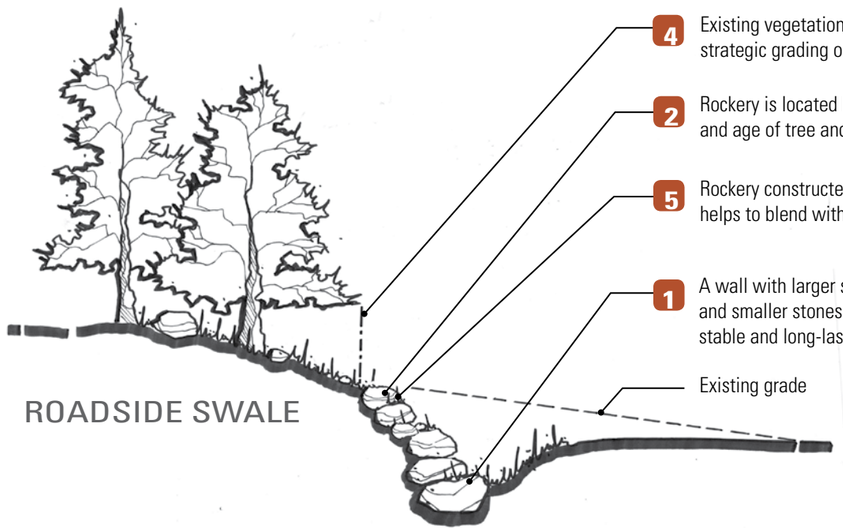


4 Native vegetation used to help clean water and create habitat

5 Features in the landscape are incorporated into the design to yield a more natural-looking landscape

5 Varied slopes, rounded tops and bottoms of slopes, undulated faces of slopes create a more naturalized pond edge and reduce erosion

ROADSIDE SWALE



4 Existing vegetation is preserved through strategic grading outside of drip-line

2 Rockery is located based upon species and age of tree and soil characteristics

5 Rockery constructed of local materials helps to blend with landscape setting

1 A wall with larger stones at the bottom and smaller stones on the top will be stable and long-lasting

Existing grade

DRAINAGE

Water is a powerful force in the landscape. Grading and drainage solutions that avoid the harmful effects of erosion will prevent scars on the landscape that will be difficult to restore. We are now aware of the cumulative effects of past approaches to stormwater management and must take special precaution to design more sensitively so as to protect BLM lands.

1 Plan for Use and Users:
- Identify uses and determine appropriate space and slope requirements
- Consider long-term maintenance

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Select a site where development can fit on the land with minimal disturbance to natural drainages and floodplains

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for stormwater management and drainage
- Clearly identify areas with safety and resource protection concerns

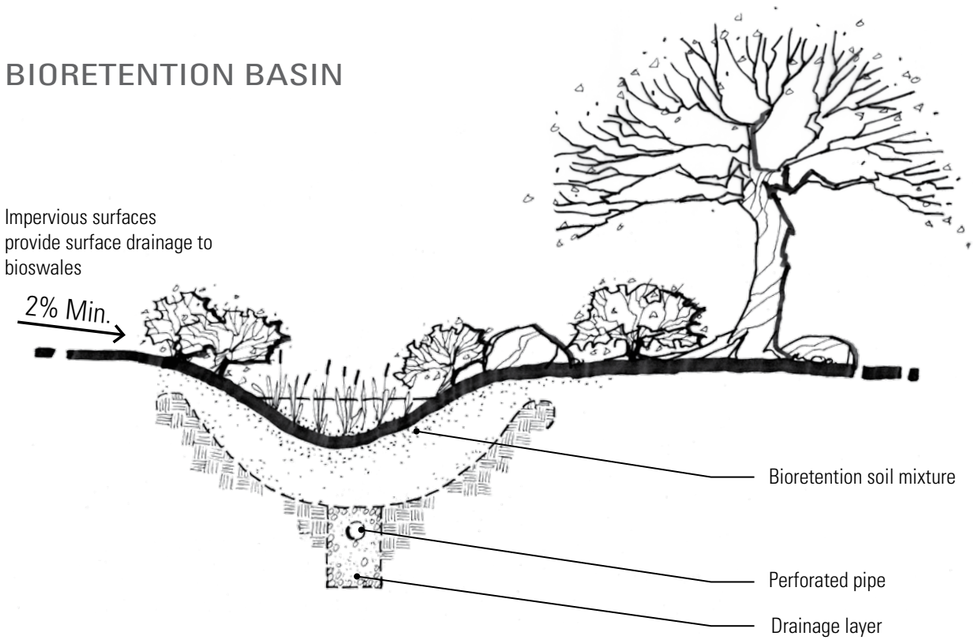
4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Infiltrate, collect, and reuse water on site
- Use renewable, local, and/or recycled content materials
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project
- Do not exceed historic runoff volumes when discharging into natural drainages

5 Design a Cohesive Environment:
- View the entire site as a whole and design the drainage to fit well with site features and facilities and minimally disrupt the natural site hydrology
- Create visual consistency between materials and surrounding landscape
- Design drainages, swales, and stream edges to achieve natural appearance

SOMETHING TO CONSIDER:
- Construct a bioretention facility
- Understand permeability of soils and percolation rates
- Direct water to landscaped areas

Red Rock Canyon National Conservation Area, Nevada

BIORETENTION BASIN



4 Impervious areas drain water to vegetated swale to facilitate water infiltration

5 Material is chosen from local sources, to ensure it matches landscape setting

Red Springs Day Use Area, Nevada

Corrugated metal pipe provides a solid form on which to build a cost effective, custom culvert

1

Use of natural stone on the face and matching boulders in the drainage provides a cohesive appearance to this structure

5

Intact stream bottom maintains health of aquatic ecosystem

4

Littleton, Colorado

1 Large stone located on top of culvert provides a stable end section

2 Stone is extended far enough to allow for gentle transition slopes to adjacent grades

4 Stones found or collected on or near the site reduce material and hauling costs

5 Local materials blend with local landscape setting

Eagle Preserve, Colorado

Surface drainage swales encourage water infiltration and sedimentation

4

Natural appearance of swale is provided through variety of stone sizes, meandering alignment, and altering grades on side-slopes

5

Eagle Preserve, Colorado

VEGETATION

When used correctly, plants serve a variety of purposes. Vegetation can provide shade, screen views, provide wildlife habitat, filter stormwater, clean air, restore damaged sites, and enhance the beauty of a site. Plants also have interpretive value and can be used to engage visitors and inspire connections to nature. The correct plants for the job can enhance and enrich the environment and minimize maintenance. Determining which existing plants to preserve, combined with thoughtful planting design for areas requiring new vegetation, should be considered an integral and critical component of facility development.

1 Plan for Use and Users:
- Identify the function and use of vegetation
- Consider having plantings serve interpretive purposes

2 Select Appropriate Site:
- Select plants and locate planting areas appropriate to microclimates and soils
- Avoid installing plants that will interfere with utility lines when mature
- Avoid obscuring views with vegetation

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for existing and proposed vegetation
- Analyze microclimates to be created by built features and select plants accordingly
- Identify existing plants to retain

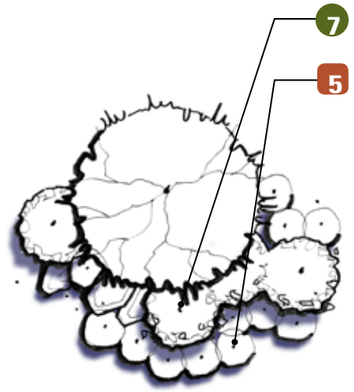
4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use native, drought-tolerant, and/or locally propogated plants
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project
- Use bioswales to channel water to vegetation
- Limit use of irrigation and/or use nonpotable water

5 Design a Cohesive Environment:
- View the entire site as a whole and develop a unified plant community and composition to fit well with site features, facilities, and existing landscape character
- Create visual consistency between plant materials and surrounding landscape

6 Design for Safety and Security:
- Use trees and shrubs as barriers or to buffer views into secure areas
- Use plants to guide access and vehicular and pedestrian circulation

7 Promote Biodiversity:
- Select a diverse mix of native species that reflects the natural environment of a site
- Consider plants that provide habitat for native wildlife
- Plant Federally listed or special status species to assist in restoring their numbers

8 Plan for Maintenance:
- Avoid plants prone to disease or stress and those otherwise difficult to establish
- Consider long-term maintenance
- Provide adequate separation between plants and adjacent paths, utilities, site furnishings, and paving
- Monitor newly planted native plants until established
- Establish an interim weed management plan to quickly and efficiently discourage weeds from establishing in newly planted areas

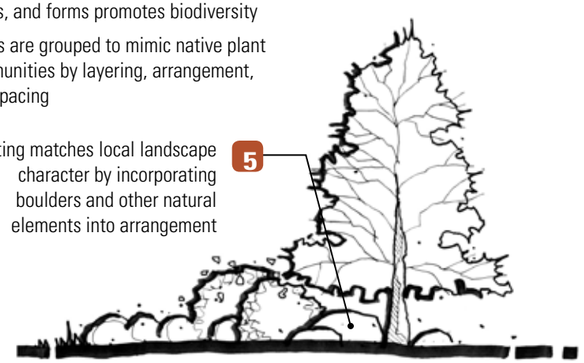


PLAN VIEW

7 Using a variety of species, sizes, textures, colors, and forms promotes biodiversity

5 Plants are grouped to mimic native plant communities by layering, arrangement, and spacing

Planting matches local landscape character by incorporating boulders and other natural elements into arrangement 5



SECTION VIEW

STANDARD PRACTICE:

- Wildlife protection barriers should be used until revegetation efforts are sufficiently established to withstand browsing and grazing

Revegetation utilizes native plants to provide food and cover for local fauna 7

Plantings soften impact of building and contribute to a sense that it grows out of the landscape 5

Designed landscape draws attention to the beauty and diversity of native plant communities 5

Irvine, California

2 Planting arrangement retains views to structures

4 Drought-tolerant plants respond to local climate and natural precipitation

- 4 — Planting bed reflects native plant communities; appears as if an island of natural vegetation has been preserved in place
- 7 — Native forbs, shrubs, and grasses support local wildlife
- 8 — Native plants are adapted to semi-arid climate and require low levels of maintenance and irrigation
- 1 — Planted berm is integrated with parking; discourages foot traffic and helps to define vehicular circulation

Grand Canyon National Park, Arizona

- 8 — Shrubs and trees are set back from paving to reduce long-term maintenance
- 6 — Plants are low and soft against walk, allowing safe passage
- 5 — Site provides a variety of textures, forms, and colors found in nature
- 7 — Native vegetation provides food and cover for wildlife
- 7 — Plants with similar water requirements are grouped together
- 1 — Landscape design and plantings reinforce sense of remembrance and allow for peaceful reflection

National Interagency Fire Center
Wildland Firefighters Monument, Idaho

SOMETHING TO CONSIDER:

- Place vegetation that is desirable to wildlife away from roadsides and in locations where human-wildlife contact is not intended
- Use temporary protection (fencing around vegetation)

THINK GREEN:

XERISCAPE PRINCIPLES:

- Plan and design landscape for low water use
- Choose appropriate plants
- Improve soil
- Use mulch
- Create practical turf areas
- Irrigate efficiently
- Maintain the landscape properly

- 4 — Canopy trees shade public areas and buildings
- 1 — Interpretive garden expresses the richness and interest of the native environment; inconspicuous labels identify plants
- 4 — Native plant species and drip irrigation reduces potable water consumption

Santa Rosa and San Jacinto Mountains National Monument, California

SOMETHING TO CONSIDER:

- Newly revegetated areas may attract wildlife, which can cause conflict with people and traffic
- Nursery grown plants are typically nitrogen enriched and are more desirable to wildlife

STANDARD PRACTICE:

- Executive Order 13112, Invasive Species, directs Federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause.

- 5 — Planted landscape emulates nature with spacing and variety
- 1 — Native vegetation is a part of the interpretive programming

Grand Staircase-Escalante National Monument - Cannonville Visitor Center, Utah

UTILITIES

Utilities, whether power lines, septic systems, or solar panels, are necessary at many BLM facilities, and their installation has the potential to diminish scenic quality, alter wildlife habitat, and create other negative environmental impacts. The locations of utility lines and structures have serious implications to project planning, design, and construction, and need be thoughtfully considered throughout all phases of project development. Devising utility system concepts initially that respond to project needs, as well as constraints of the site, will save considerable time and money while also protecting sensitive resources. Use foresight in planning utilities by taking into account the potential for future expansion as well as how to avoid issues related to the size and mature height of site vegetation.

1 Plan for Use and Users:
- Identify uses and determine appropriate space and slope requirements
- Consider long-term maintenance
- Develop site utility plan that allows for future expansion
- Consider interpretive opportunities of green utilities related to water, waste, and power

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Minimize views of utilities
- Locate site near existing utility corridors/connections
- Analyze the long-term costs and benefits of locating utility lines above or below ground

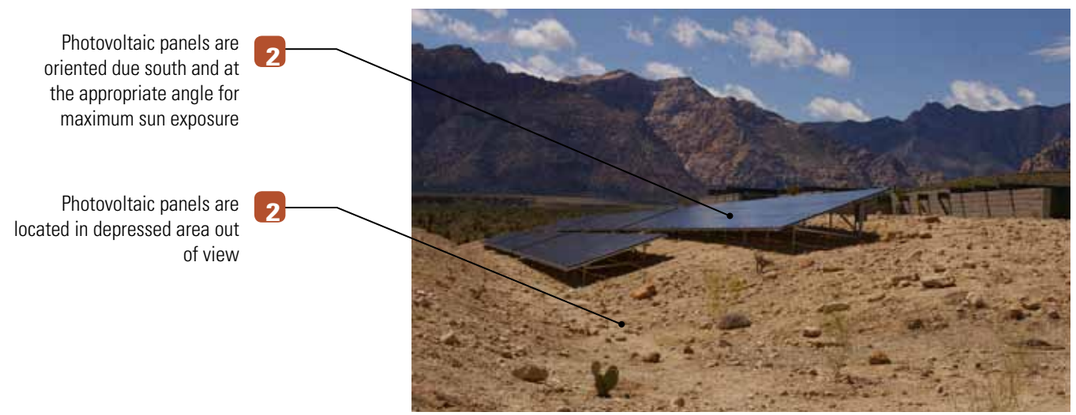
3 Prepare Site Analysis:
- Compile information about site conditions, including: natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for utilities
- Identify views toward utilities
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including: stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable energy
- Reduce energy load of development
- Consider using cisterns and other water-holding devices for reusing stormwater for nonpotable uses
- Utilize nonstructural and structural techniques to reduce pollutants and retain stormwater runoff
- Use surface draining swales and minimize the length of underground pipes
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and plan the utilities to fit well with site features, facilities, and minimally disrupt the existing landscape character
- Create visual consistency between utility structures and surrounding landscape
- Correspond level of service to remoteness of setting

6 Plan for Maintenance:
- Use locatable wire for ease of finding buried pipes and lines
- Provide as-built drawings for utilities
- Utilities being routed under roadways should be in conduit rather than direct burial to allow easy upgrading and repair

Sand Island Recreation Area, Utah



Red Rock Canyon National Conservation Area Visitor Center, Nevada

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

5 Straight line is avoided to reduce visual impact and shorten view corridors

Springs Preserve, Nevada

THINK GREEN:

- Day-lighting
- Passive solar
- Photovoltaic cells
- Wind turbines
- Hydro-power stations
- Geothermal systems
- Cogeneration systems
- Harnessing methane gas
- Biomass systems
- Solar hot water

5 6 Weathering steel is used to reduce maintenance and visual contrast

4 5 Photovoltaics are architecturally integrated into a shade port to provide shade for vehicles and renewable energy for the facility

5 Shade fabric is used to reduce weight of structure and screen photovoltaic panels

SOMETHING TO CONSIDER:

- Use non-specular wire and insulators to reduce visual impacts of power lines
- Sharp angles along electrical transmission lines require larger turning towers or guying of power poles, thus increasing costs

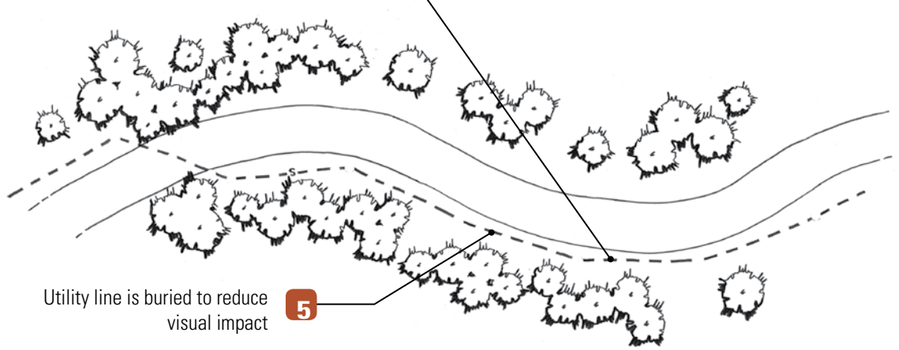
2 5 HVAC units are hidden from public view by walls incorporated with the architecture

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

Masonry wall constructed of same materials as visitor center; visually screens propane tank and trash receptacles while blending with site architecture and landscape setting 5 2

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

Utility lines follow road corridor and previously disturbed areas 2



Utility line is buried to reduce visual impact 5

CAMPGROUNDS

Demand for developed camping facilities on BLM lands ranges from semi-primitive settings where are area is designated with simple signage and little else, to higher levels of service that include sites with camp hosts, tent pads, picnic tables, restrooms, and water. Care should be taken to match the level of development to the setting and visitor experience objectives. Balancing resource protection with visitor preferences, privacy, and comfort, as well as with budgetary constraints is challenging and demands creative, site-specific solutions.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Be guided by visitor experience objectives
- Consider long-term maintenance
- Provide a variety of camping opportunities
- Separate camping types as appropriate
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) as needed
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Establish a sense of privacy by using buffers, varying site placement along the road, and providing appropriate distances between campsites

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of campground facilities
- Locate near recreational attractions
- Locate facilities on gently sloping terrain to minimize grading

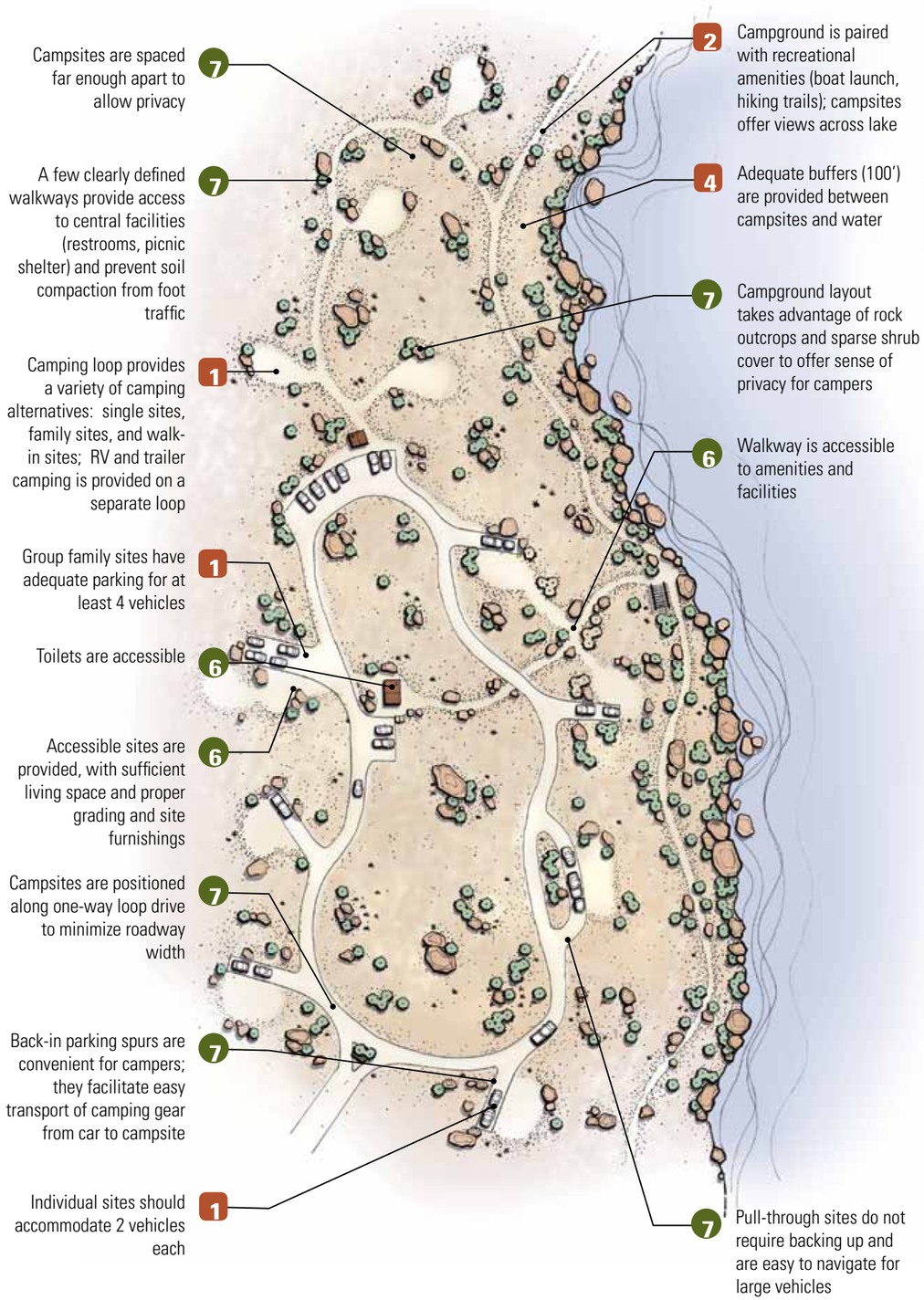
3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views into and from campground
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Consider renewable energy if needed
- Reduce water use via water-efficient landscaping, wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Rehabilitate/reuse/recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Consider pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas when practical
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Provide controlled points of entry
- Provide a well-drained, gently sloping, rock-free living space for each campsite
- Provide accessible sites
- When needed, provide low-level lighting that protects the night sky

7 Structure Circulation:
- Provide logical circulation networks that efficiently serve vehicles and pedestrians
- Cluster restrooms, potable water, and trash receptacles in common area
- Route vehicles on a one-way loop with back-in spurs or pull-through sites
- Provide accessible routes between campsites and amenities



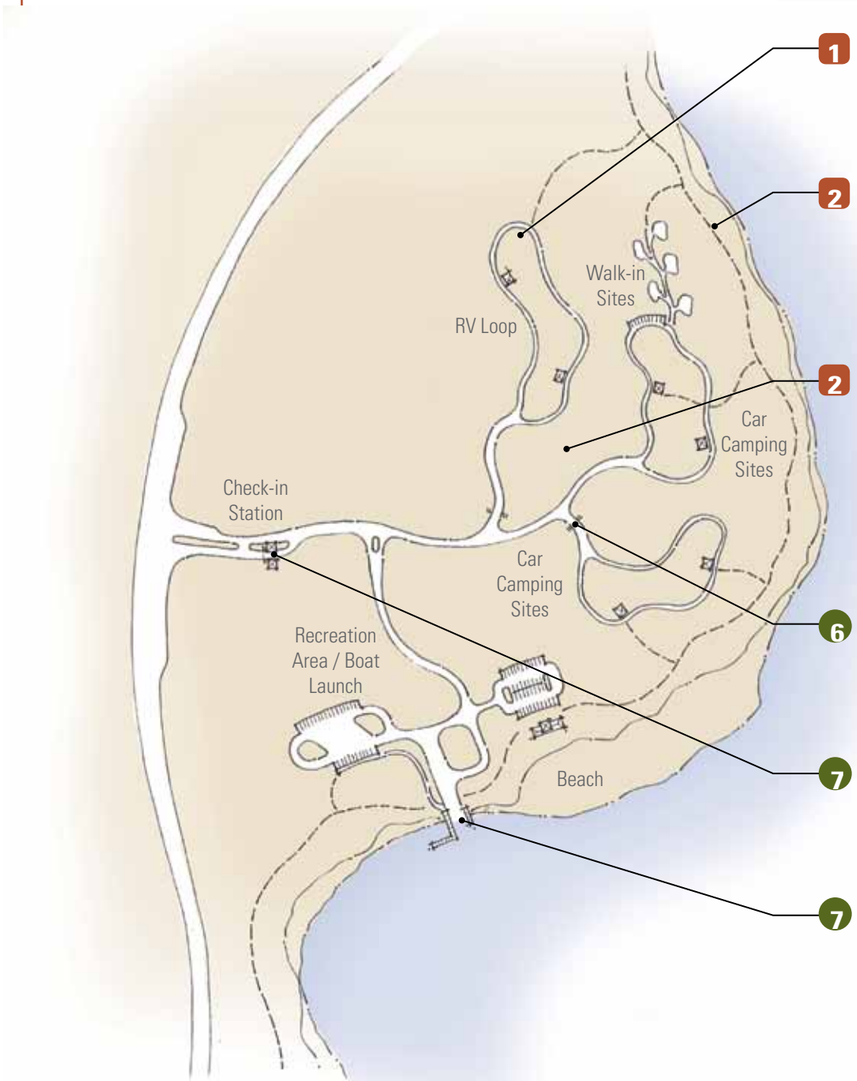
THINK GREEN:

Reduce potable water use with:

- Vault, compost, or low-flow toilets
- Aerators on faucets
- Drip irrigation
- Rainwater harvesting
- Gray-water use

STANDARD PRACTICE:

- Living Space: 30' X 30'
- Between sites: 70' - 100'
- RV Parking Stall: 16' X 52'
- Single Lane Road: 12'



1 Camping for RVs and trailers is best accommodated on a separate loop

2 Accessible trail connects all camping loops and links different amenities within the recreation site

2 Site with adequate space to provide multiple loops as well as room for future expansion

6 Includes gates to permit closure of camping loops

7 Gate and check-in station provides controlled point of entry for campground

7 Boat launch and beach area are on a road spur separate from camping loops

7 Vegetation and other natural features buffer campsites from road and neighbors

2 Gentle slope provides well-drained comfortable campsite

4 Clearly defined camp area reduces disturbance and limits erosion

7 Wheel stop limits vehicular access

Horse Thief Campground, Utah

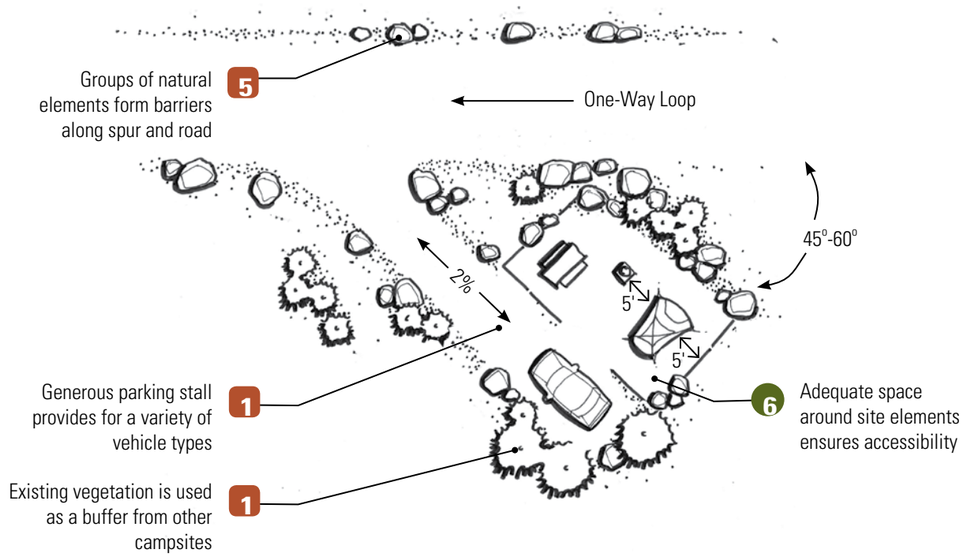
4 Parking area is generous to provide for a variety of vehicle sizes plus space to move around the vehicle

4 Retaining wall preserves adjacent vegetation

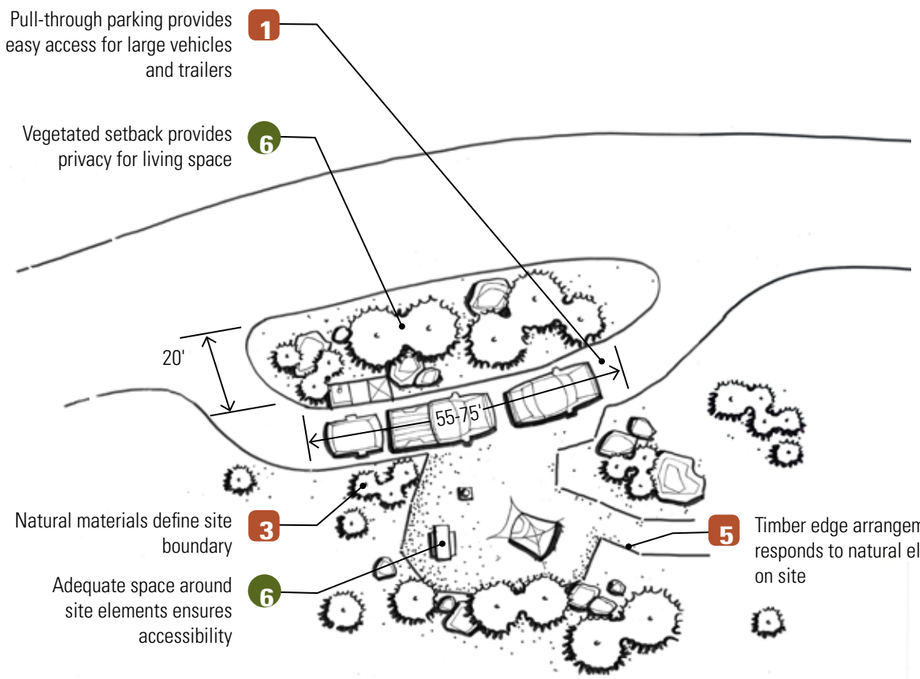
6 Surface and adequate space around site fixtures ensures accessibility

Loon Lake Campground, Oregon

BACK-IN CAMPSITE



PULL-THROUGH CAMPSITE



STANDARD PRACTICE:

- Refer to U.S. Access Board Accessibility Guidelines for Outdoor Developed Areas

King Range National Conservation Area, California

SOMETHING TO CONSIDER:

- Refer to Recreation Setting Characteristics Matrix in Appendix C, pgs. 204-205

PICNIC AREAS

Picnic areas provide a place for individuals and groups to relax, gather with family and friends, view nature, eat, rehydrate, and experience the natural character of our public lands. It is important for BLM to accommodate a wide range of uses within picnic units while minimizing resource and user conflicts. The overall objective is a comfortable picnic area—one that is durable, requires low maintenance, and is environmentally sensitive. Seek to design a cohesive family of site elements and shelters that combine to form a picnic area.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Provide a variety of picnic opportunities
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) as needed
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance

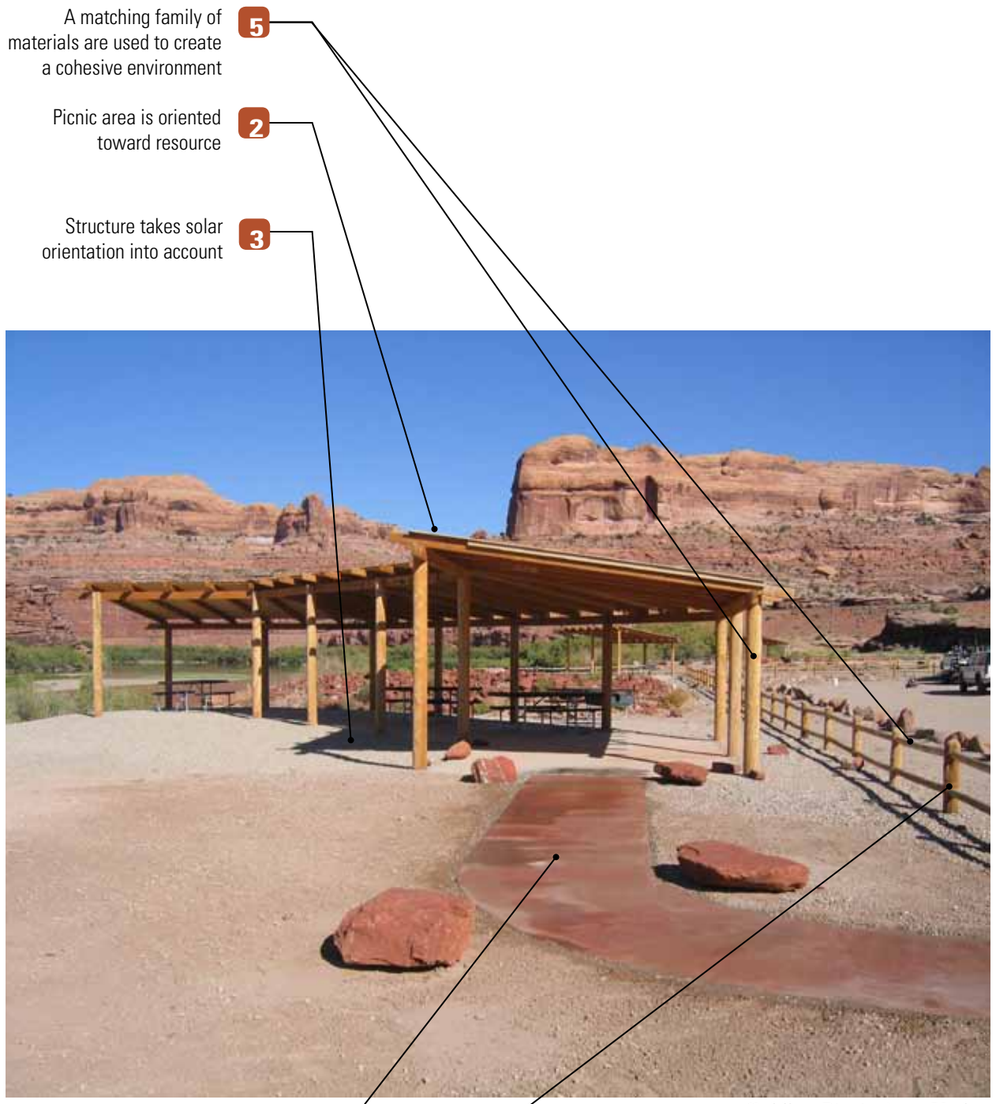
2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of picnic facilities
- Locate adjacent to existing natural features (e.g., rock outcrops, vegetation)
- Locate facilities on gently sloping terrain to minimize grading

3 Prepare Site Analysis:
- Compile information about site conditions, including: natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views into and from picnic area
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Utilize renewable energy
- Reduce water-use via water-efficient landscaping, waste-water technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Reuse/recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Use pervious paving to reduce runoff and increase infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project

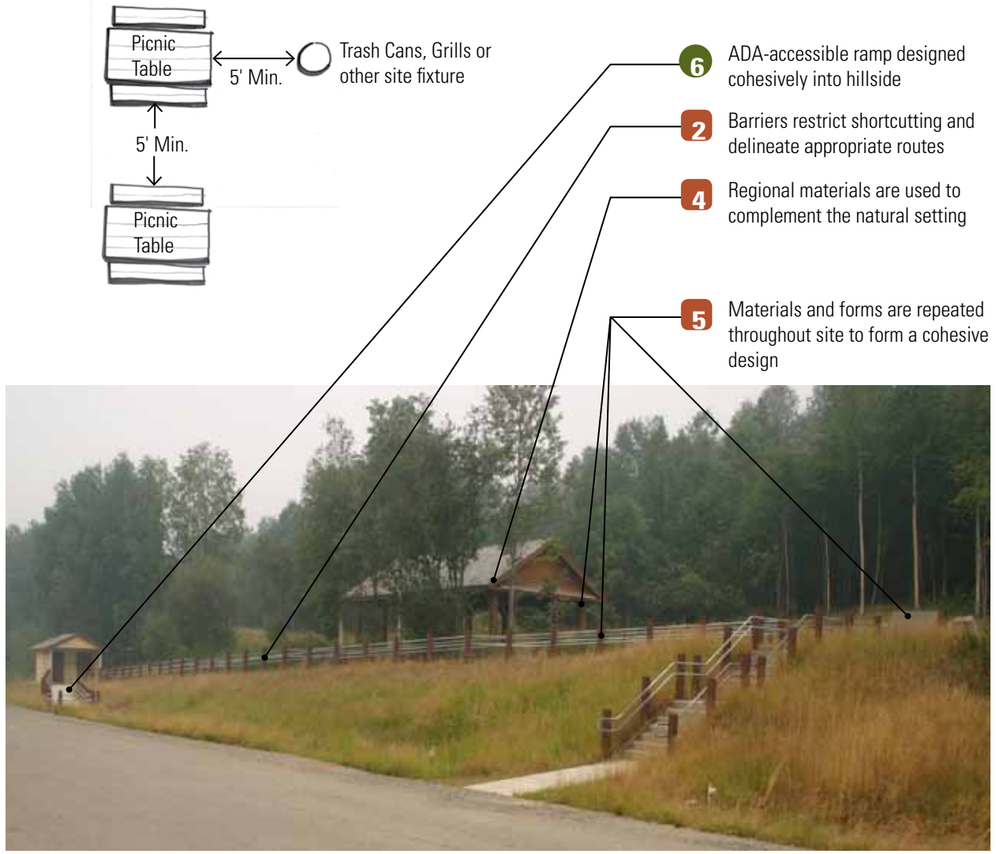
5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to remoteness of setting
- Use durable materials
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Ensure proper grades, surfaces, and adequate space around site furniture to allow for accessibility



Goldbar Picnic Area, Utah

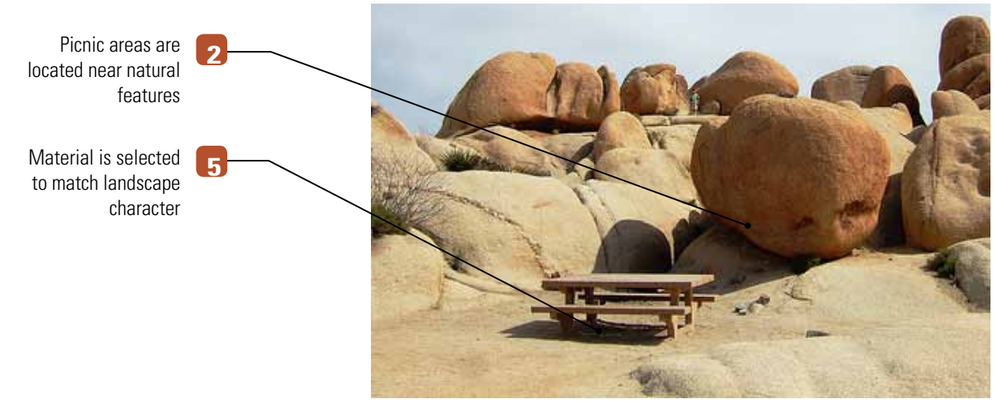
ACCESSIBLE PICNIC AREA



Seward Highway-Turnagain Arm Wayside, Alaska

Grand Staircase-Escalante National Monument
Glendale Contact Station, Utah

Cleveland-Lloyd Dinosaur Quarry Visitor Center, Utah



Joshua Tree National Park, California

Red Springs Day Use Area, Nevada

BOATING FACILITIES

Bodies of water managed by BLM provide a range of opportunities for the public, from social gatherings by lakes to challenging white water rafting trips through wild and remote landscapes. Whether fishing or kayaking, water skiing or swimming, boating facilities provide access to ocean waters, rivers and streams, and lakes and reservoirs. Care should be taken to match the level of development to the setting and visitor experience objectives while also balancing protection of the natural resources.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Be guided by visitor experience objectives
- Consider long-term maintenance
- Separate vehicle and trailer parking
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) as needed
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Ensure access to water at high and low water levels

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of boating facilities
- Locate facilities on gently sloping terrain to minimize grading
- Select a natural inlet or eddy that is large enough to accommodate users
- Provide sufficient separation of parking areas from shoreline for buffer strips
- Locate boat ramp with southern exposure and on the consistently deeper side of the river for ease of launch during low flows

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views into and from boating facilities
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Rehabilitate/reuse/recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Consider pervious paving to reduce runoff and increase infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas when practical
- Consider life cycle costs of project
- Install permanent anchor buoys to mitigate anchor damage to bottom environments

5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Use barriers, grade-separated walks, striped crosswalks, and/or other means to create clearly defined, safe pedestrian zones in the vehicular area
- Provide adequate travel lane width, rigging and derigging areas, stall width and depth, sight lines, and turning radii for vehicles with trailers
- Ensure accessibility to piers, floats, ramps, walkways, and parking areas
- Separate traffic flow between commercial and private boaters
- For white water access ramps where rafts will be carried down to the river, provide a clear zone from vehicles for staging the rafts at launch point

SOMETHING TO CONSIDER:
- Drain parking and drive areas away from water resource for sedimentation and pollution control
- Construct rock jetty to provide still water at ramp
- In rivers, angling boat ramps downstream reduces sideward push on boat as it is being loaded/unloaded

Blackwell Island Recreation Area, Idaho

STANDARD PRACTICE:
- Motorized boat ramp: 12-15% slope
- Nonmotorized boat ramp: 5-10% slope
- Boat ramp width: 14' min. / 16' preferred

SOMETHING TO CONSIDER:
- Ramp slopes greater than 15% may result in vehicle slippage and the inability of driver to see trailer in rearview mirror
- Slopes less than 12% may require backing the vehicle into the water to reach a water depth sufficient for loading/unloading

1 Various launch options are provided for different users, allowing safe separation and ample space on site

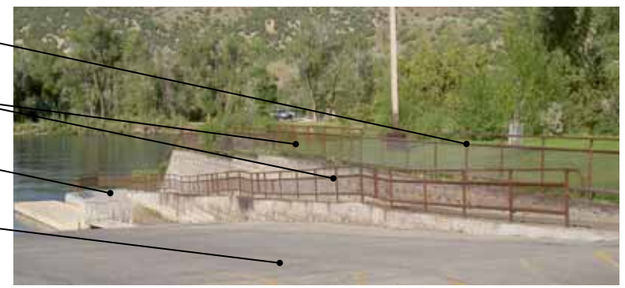
2 Ramp creates eddy for still-water access

2 Surface swales accept water from parking prior to draining to resource

County Line Recreation Site, New Mexico

STANDARD PRACTICE:

- Refer to U.S. Access Board Accessibility Guidelines for Outdoor Developed Areas



Space provided adjacent to ramp for safe gathering — 6

Consistent materials are used — 5

Dock is accessible — 6

Clearly defined pedestrian and vehicular routes — 6

Byington Boat Access, Idaho

4 Preserved vegetation provides shade at access point

4 Light-colored paving reduces heat buildup while creating a long-lasting, low-maintenance ramp surface

2 Access provides natural eddy to allow safe access to resource

1 Commercial access requires larger ramp for boat launch and landing

County Line Recreation Site, New Mexico

6 Lights provide safe access to ramp areas at night

5 Site fixtures are consistent throughout facility

6 Surfacing provides safe pedestrian access

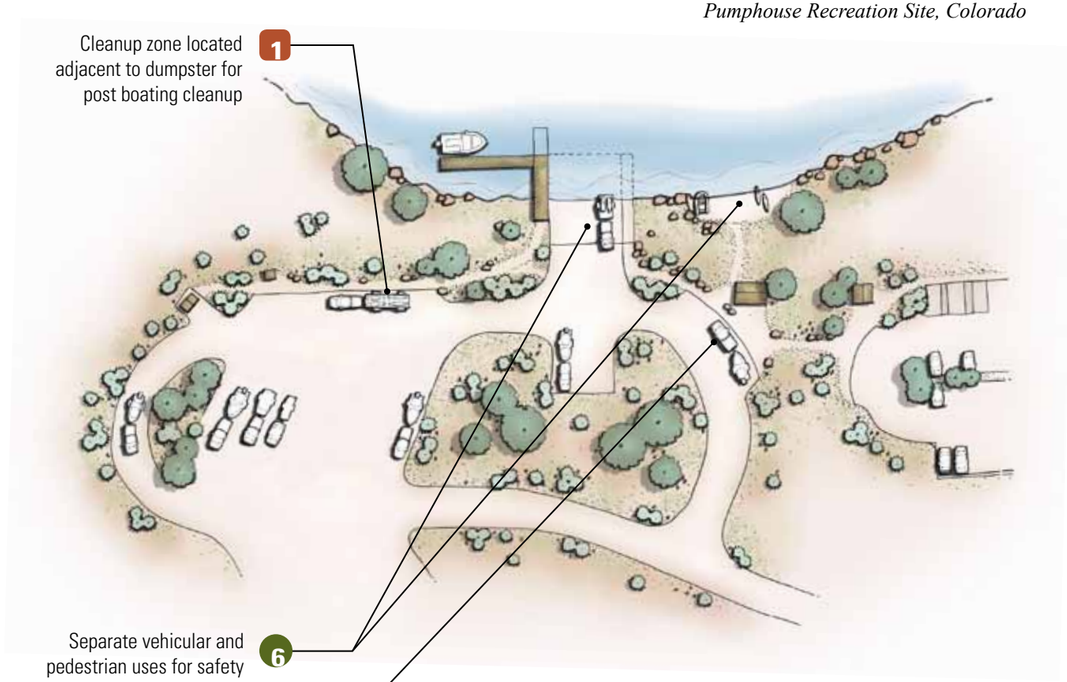
Blackwell Island Recreation Area, Idaho

Adequate space is provided for multiple kayaks and rafts — 1

Flat site allows for large vehicles with trailers to maneuver — 2

Multiple ramps serve a variety of users — 1

Pumphouse Recreation Site, Colorado



OVERLOOKS & WAYSIDES

Overlooks and waysides provide outstanding opportunities to share stories about the natural and cultural history of public lands. Many times, visitors travel through BLM lands by automobile, and their only interaction with the landscape may be at a scenic overlook. While at overlooks and waysides, visitors can develop a deeper connection to public lands, an important step in strengthening the image of BLM.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Separate vehicular and pedestrian circulation
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) as needed
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Locate viewpoints to capture prime views of attraction to reduce social trailing to alternative viewpoints
- Utilize natural ridgelines, promontories, and cliffs to extend overlook into viewing space

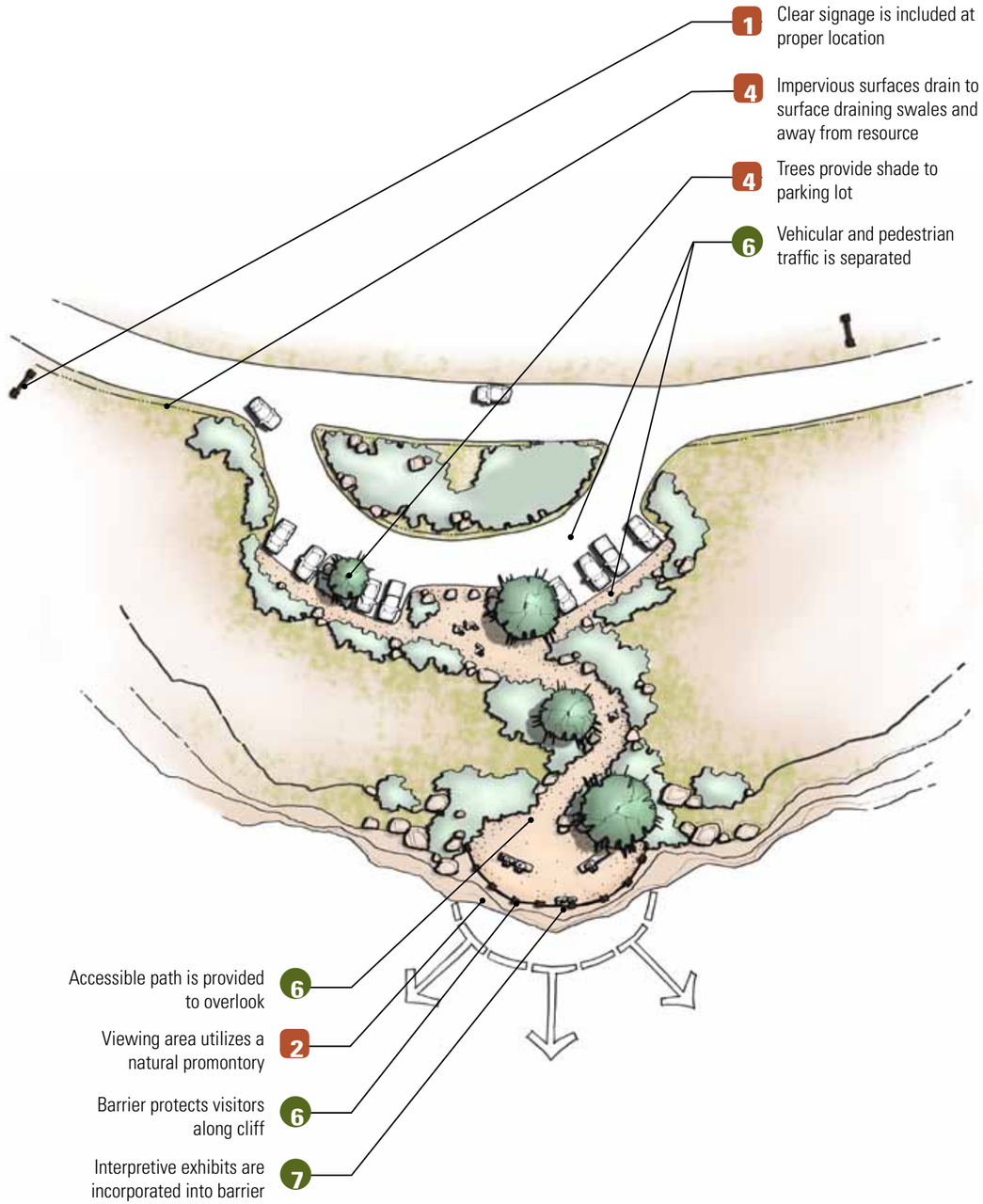
3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify key views
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Consider pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas when possible
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Maintain safe viewing distances and construct barriers near steep slopes and cliffs
- Provide accessibility

7 Provide Information and Interpretation:
- Educate visitors about the unique features at the overlook or point of interest
- Provide interpretation of natural and cultural history
- Ensure interpretive information, structures, and panels are accessible and do not obstruct the view



2 Solid barriers guide visitors to amenity and information

7 Interpretive panels educate visitors about the unique qualities of the resource

2 Platform is extended into viewing area to enhance experience

4 Pavers infiltrate water, are attractive, and afford low maintenance

Pacific Coast Scenic Byway, Oregon

5 Overlook barrier blends seamlessly into existing rock formations

6 Appropriate heights and viewing angles for interpretive panels ensure accessibility

All-American Road - Scenic Byway 12, Utah

2 Projecting or extending the viewing platform into the amenity creates a dramatic panoramic

4 Vegetation and railing protect adjacent areas from erosion

Dean Creek Elk Viewing Area, Oregon

2 Overlook is located on natural promontory for expansive views

4 5 Regionally available materials are sustainable and respond to landscape setting

2 6 Materials provide a durable, sturdy and safe overlook that does not obscure the view

Black Canyon of the Gunnison, Colorado

2 Overlook is sited to take advantage of panoramic views

5 Overlook surfacing is used to tell an interpretive story

6 Materials provide a durable, sturdy, and safe overlook

7 Interpretive panels educate visitors about the unique qualities of the site

Red Rock Canyon National Conservation Area Visitor Center, Nevada

TRAILHEADS

A well-functioning and attractive trailhead combines various site and architectural elements into one cohesive design. The sheer number of assets make this a challenge. Often, trailheads include many amenities, including shelters, kiosks, barriers, restrooms, signs, interpretive panels, and site furniture. To further complicate trailhead design, a variety of trail users come together in one place in anticipation of leaving their vehicles behind and exploring BLM lands. Clear circulation and direction is critical. Separation of pedestrians and vehicles is optimal. Information at the trailhead increases safety and pride of stewardship.

1 Plan for Use and Users:

- Identify the users and their needs, and types and intensities of use
- Be guided by visitor experience objectives
- Consider long-term maintenance
- Separate vehicular and pedestrian circulation
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) as needed
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance

2 Select Appropriate Site:

- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of trailhead
- Locate facilities on gently sloping terrain to minimize grading

3 Prepare Site Analysis:

- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views into and from trailheads
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:

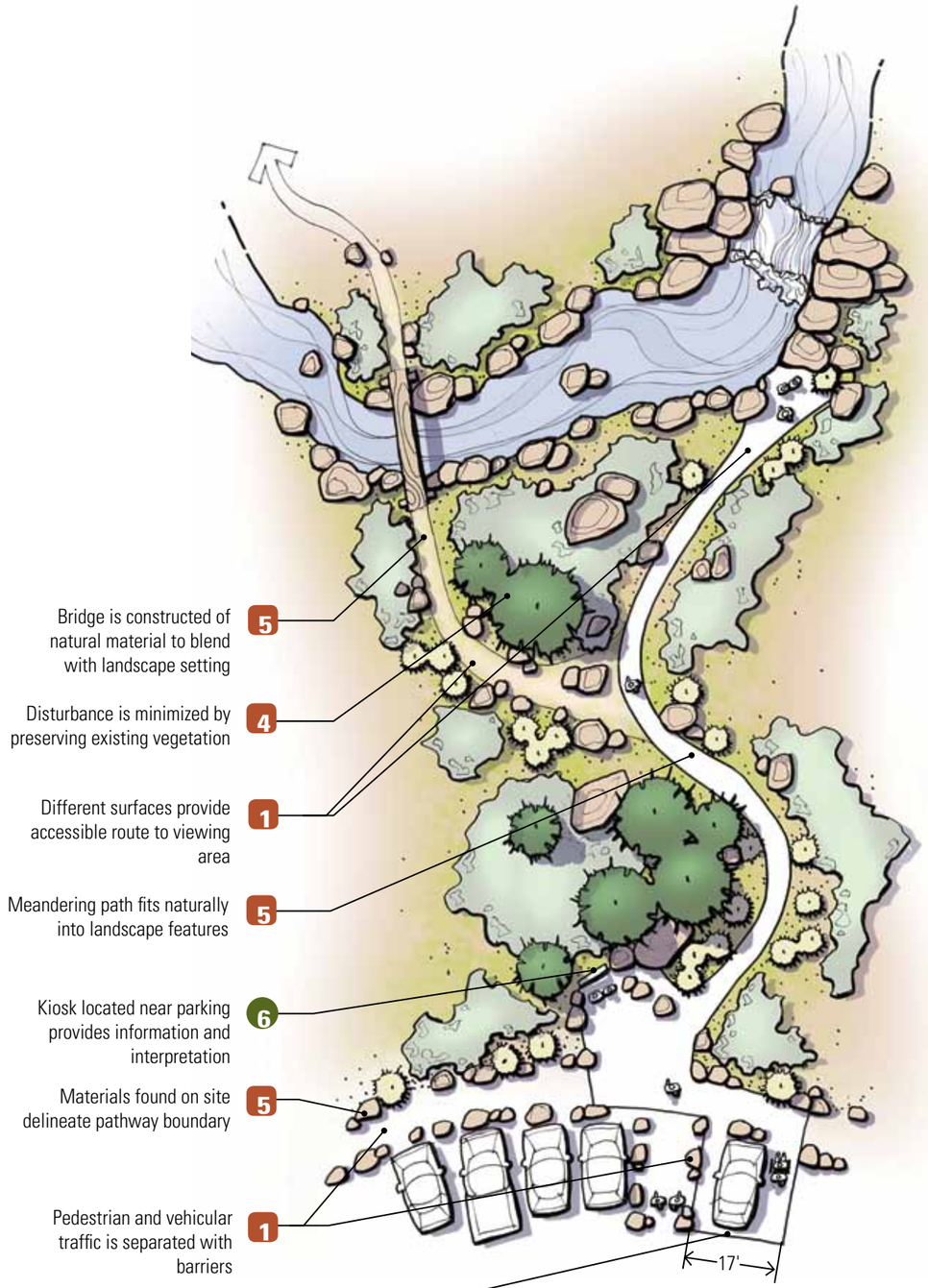
- Protect sensitive areas, including: stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Consider pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas when possible
- Consider life cycle costs of project

5 Design a Cohesive Environment:

- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Provide Information and Interpretation:

- Inform visitors about trail system use, safety, climate, and the local environment
- Inform visitors of the importance of preserving the resource they have come to enjoy
- Ensure information, interpretive structures, and panels are accessible



Common materials and design present a consistent architectural character (5)

Kiosk provides interpretive and orientation information (6)

Local masonry ensures structure blends with the landscape setting (5)

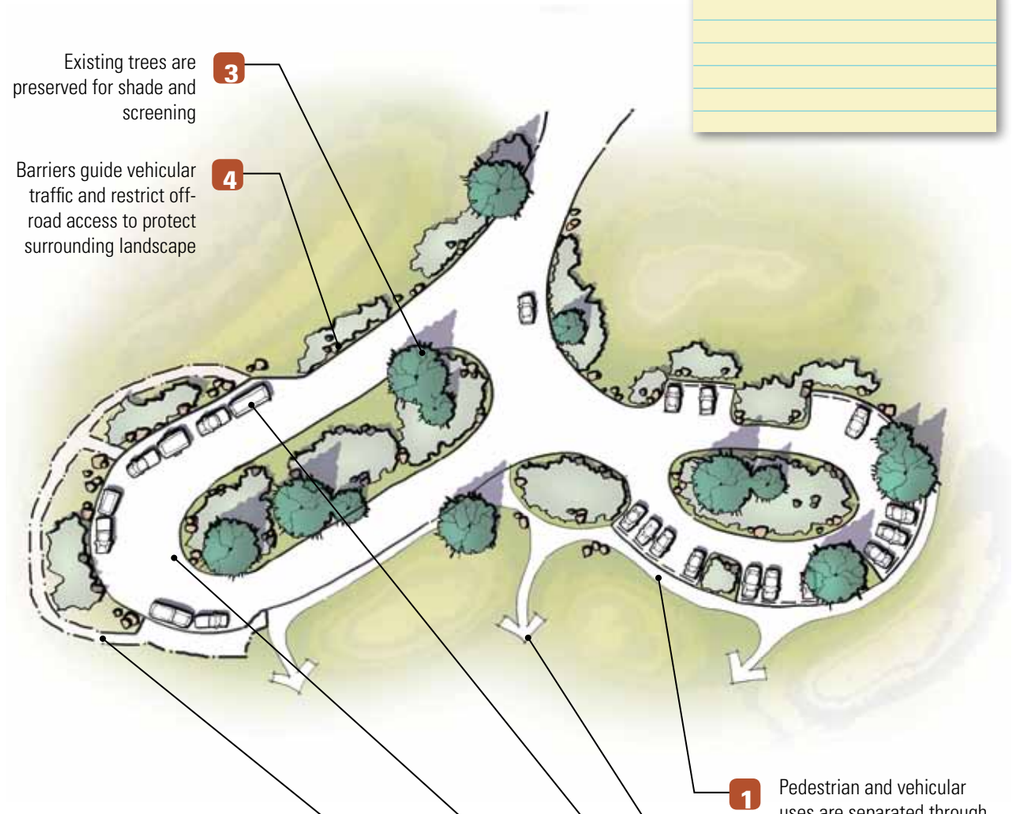
A variety of user groups are accommodated with surfacing and trail width (1)

Deciduous trees provide seasonal shade to rest and entry points (4)

Hall Ranch, Colorado

SOMETHING TO CONSIDER:

- Refer to Recreation Setting Characteristics Matrix in Appendix C, pgs. 204-205



Existing trees are preserved for shade and screening (3)

Barriers guide vehicular traffic and restrict off-road access to protect surrounding landscape (4)

Pedestrian and vehicular uses are separated through a change in materials (1)

Multiple connections to trail minimize social trails (4)

Equestrian parking is separated from other uses (1)

Large turning radius and space is provided for larger vehicles (1)

Separate soft surface trail is provided for equestrians (1)

STANDARD PRACTICE:

- Refer to U.S. Access Board Accessibility Guidelines for Outdoor Developed Areas

TRAILS

Trails are one of the primary means by which the public connects to and enjoys BLM lands. They provide opportunities for recreationalists to explore nature, view inspiring scenery, experience solitude or spend time with family and friends, improve fitness, and challenge technical and physical abilities. Creating trails that provide these opportunities while minimizing conflicts among various types of users, as well as preventing damage to the resources that make the trail desirable to use, requires careful planning, design, construction, and maintenance.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Be guided by visitor experience objectives
- Separate trail types as appropriate, and design for preferred use
- Select appropriate surface materials
- Plan for accessibility
- Create an intuitive and recognizable entrance
- Plan trails to connect recreational attractions and amenities

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features along trail
- Locate on existing corridors only if they provide quality recreational experience and meet management strategies
- Fit trail to contours to minimize grading and reduce erosion

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for trail construction
- Identify key views to highlight along trail
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Consider pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project
- Use elevated boardwalks or other protective measures when routing trails through sensitive areas as necessary

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Correspond level of development to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter
- Define trail edges with grade changes, vegetation, and natural obstacles

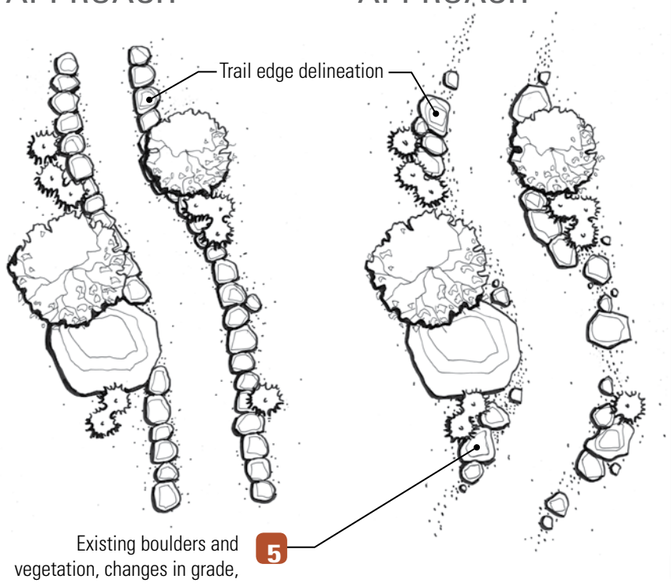
6 Design For Safety and Security:
- Trails with deliberate obstacles and technical trail features should include a less technical, alternative route
- Use grade-separated crossings when crossing high-speed roads
- All road crossings should be well-marked and located in areas of good sight distance

7 Consider Long-term Maintenance:
- Use "full bench" construction whenever possible
- Locate trail switchbacks at control points, anchor points, or natural features to reduce shortcutting

8 Provide Information and Interpretation:
- Educate visitors on the sensitivity of the landscape and how they can help maintain trails in the area
- Consider providing interpretive media along the trail that connects users to the area's natural and cultural history

UNDESIRABLE APPROACH

PREFERRED APPROACH



Existing boulders and vegetation, changes in grade, and subtle use of small rocks delineate the trail edge and define the trail path; avoid unnatural linear arrangement of rocks

TRAIL STANDARDS

*Consult with BLM's accessibility coordinator for recommendations and guidance.

SHARED MULTI USE:
Tread Width 8' – 12'
Grades < 5%

SHARED NON-MOTORIZED:
Tread Width 48"
Grade < 10%

SINGLE TRACK HIKING/BIKING TRAIL:
Tread Width 30"
Grade +/- 10%

FOOT ONLY:
Tread Width 24"
Grade < 15%

Trail varies in grade and alignment to fit natural contours and create interest — 5

Crusher fines trail and width provides recreational access to a variety of trail users in both directions — 1

Trail corridor is defined with grade changes and local stones — 5

Trail displays balance of cut and fill construction — 4

Foothills Community Park, Colorado

Red Springs Day Use Area, Nevada

3 Site analysis identified wet meadow to be avoided

6 Accessibility is provided for the length of the trail

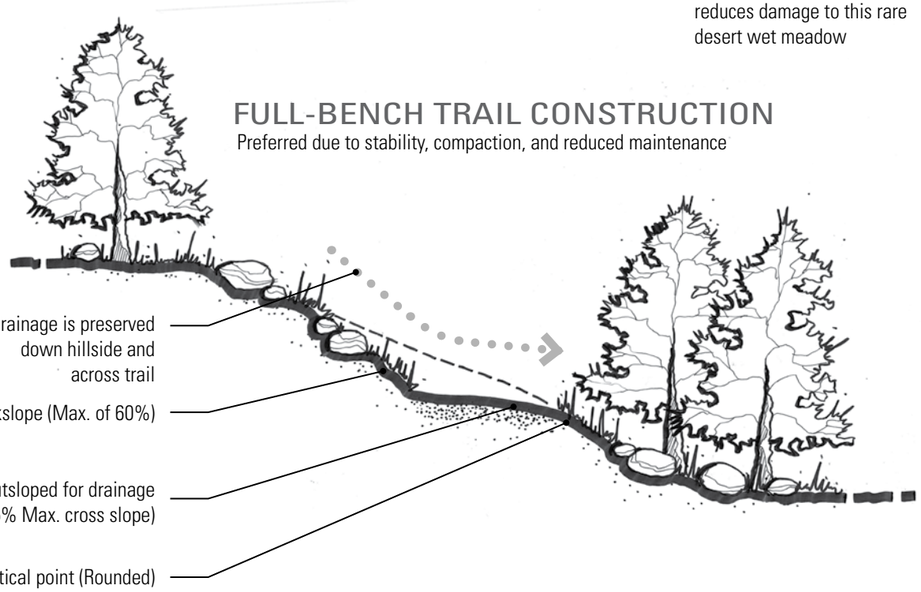
2 Boardwalk zigs and zags, creating a fun, interesting experience for user; provides a diversity of views and points of interpretation

6 Edge of boardwalk is defined with barrier

4 Elevated boardwalk eliminates social trails and reduces damage to this rare desert wet meadow

FULL-BENCH TRAIL CONSTRUCTION

Preferred due to stability, compaction, and reduced maintenance



Rogue River Trail, Oregon

3 Rocky outcrop and narrow ledge provide control point for trail planning and layout

5 Native materials used to maintain landscape character

Sandstone steps are made from on-site materials; steps blend seamlessly with the natural environment — 5

Erosion is minimized by using steps rather than steep section of trail — 4

Trail meets accessibility exception due to steep, rugged terrain — 6

Red Rock Canyon National Conservation Area Visitor Center, Nevada

TRAIL SURFACING ALTERNATIVES

SURFACING MATERIAL	USE COMPATIBILITY	MAINTENANCE REQUIREMENTS	SERVICE LIFE
Natural Surface	Natural surfacing is compatible with: • pedestrians • equestrians • wide-tire bikes • OHVs	**Minimal - High** • Trailside erosion control • Vegetation control	Indefinite with ongoing maintenance
Crusher Fines (Decomposed Granite)	Crusher fines surfacing is compatible with: • pedestrians • baby strollers • wheelchairs • wide-tire bikes	**High** • Replacement of dislodged fines • Trailside erosion control • Vegetation control	5 to 10 years
Asphalt	Asphalt surfacing is compatible with: • pedestrians • baby strollers • wheelchairs • all types of bikes • inline skates and skateboards	**Moderate** • Sweeping • Pothole patching • Crack filling • Trailside erosion control • Vegetation control	Up to 15 years
Concrete	Concrete surfacing is compatible with: • pedestrians • baby strollers • wheelchairs • all types of bikes • inline skates and skateboards	**Moderate** • Sweeping • Crack filling • Trailside erosion control • Vegetation control • Spall repairing	Up to 30 years

3 Existing vegetation was preserved

7 In an area that receives substantial rainfall, asphalt trail reduces long-term maintenance

6 Asphalt trail provides accessibility to nearby overlook and amenities

5 Trail edge is defined by boulders and trees

Wildwood Recreation Site, Oregon

STANDARD PRACTICE:

- Refer to U.S. Access Board Accessibility Guidelines for Outdoor Developed Areas

SOMETHING TO CONSIDER:

- Refer to Recreation Setting Characteristics Matrix in Appendix C, pgs. 204-205

4 Boardwalk protects adjacent vegetation and slope from erosion and habitat destruction

6 Boardwalk ramp is accessible

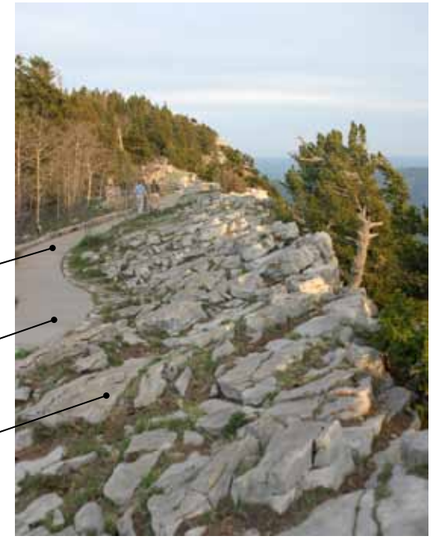
Red Springs Day Use Area, Nevada

3 Bridge is located above 100-year floodplain

3 Bridge provides unique viewing opportunities

5 Materials match architectural and landscape character of a place

Wolf Creek Falls Trail, Oregon



4 Trail follows natural contours of landscape

5 Concrete color matches natural rock outcrop

3 Existing rock feature is integrated into the trail design

Sandia Peak Trail, New Mexico

5 Integrally colored concrete and stamped concrete walls match the landscape setting

1 Equestrian trail, recreational trail, and drainage are separated

Whisper Creek, Colorado

ADMINISTRATIVE OFFICES

BLM administrative offices are typically located in cities and towns in close proximity to public lands. They are where BLM employees perform much of their day-to-day work, and they are also where the public comes to interact with staff when face-to-face meetings are needed. The quality of these facilities affects the health and well-being of the employees who spend many hours a week inside them. Quality facilities also contribute to the pride the workforce has in working for BLM as well as to the image the agency projects to the communities in which they are located.

1 Plan for Use and Users:

- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Develop a site plan that permits flexibility and allows for future expansion
- Separate public and employee uses
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Provide comfortable interior and exterior spaces for employee use

2 Select Appropriate Site:

- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views
- Locate near existing utilities, services, and transportation networks
- Locate facilities on gently sloping terrain to minimize grading
- Buffer entries and gathering spaces from prevailing winds

3 Prepare Site Analysis:

- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views to and from administrative facility
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:

- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Utilize renewable energy
- Site building to optimize natural lighting and solar gain during the winter
- Optimize energy performance through use of increased insulation, window glazing, installation of Energy Star rated products, etc.
- Reduce water use via water-efficient landscaping, wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Ensure indoor environmental quality via use of low-emitting materials, ventilation, controllability of systems, day-lighting, views, etc.
- Reuse and recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.)
- Use pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Consider life cycle costs of project

5 Design a Cohesive Environment:

- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Install flagpole near facility entrance
- Use durable materials
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:

- Provide accessibility to all areas
- Include proper traffic and regulatory signage
- Provide for safe storage and handling areas for potentially hazardous materials

1 Sign is prominent and legible

4 Deciduous trees shade building and parking in summer and allow passive solar heating in winter

5 Colors and materials of facade respond to urban landscape context

6 Accessible parking spaces are near entry to building and ramp

San Juan Public Land Center, Colorado

1 5 Flag helps to identify building as a Federal facility and shows where entrance is located

4 Large, operable windows increase indoor environmental quality

4 Light shelf shades window from direct summer sun and reflects indirect light into the building

6 Bollards help secure access to building

Craig Field Office, Colorado

Full cut-off fixture protects night sky — 4

Identification sign guides visitors — 1

Building responds to architectural character of the region — 5

Building mass is divided and creates accentuated entry — 5

Low water use landscape — 4

Socorro Field Office, New Mexico

New Mexico State Office, New Mexico

SOMETHING TO CONSIDER:

- Provide private spaces that allow for meeting with members of the public as well as working together in small groups
- Provide secure mail room
- Sign-in/sign-out area should be visible from the reception/phone operator desk

1 Reception area provides ample gathering space

Waiting room outside manager's office allows for staff/visitor comfort — 1

Grand Staircase-Escalante Headquarters, Utah

Small conference room is used often and for a variety of tasks — 1

Grand Staircase-Escalante Headquarters, Utah

Craig Field Office, Colorado

THINK GREEN:

- Reuse doors and ceiling tiles
- Recycle fluorescent bulbs
- Reuse electrical equipment, wiring, ceiling grid pieces, and duct work
- Recycle carpets, glass, cardboard boxes, and packing materials
- Recycle construction and demolition debris

4 Clerestory windows provide natural day-lighting while light shield reflects light deep into space

4 Large, operable windows increase indoor environmental quality

All doors are secure — 6

Occupied spaces and offices on perimeter of floor plan — 4

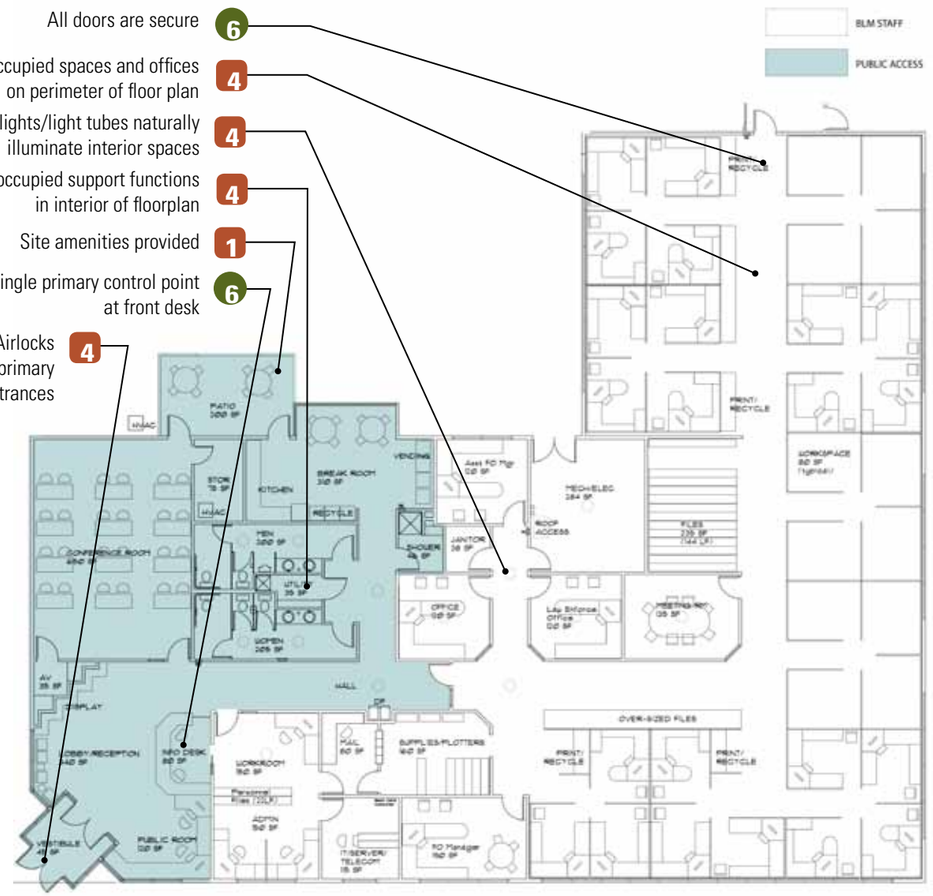
Skylights/light tubes naturally illuminate interior spaces — 4

Unoccupied support functions in interior of floorplan — 4

Site amenities provided — 1

Single primary control point at front desk — 6

Airlocks at primary entrances — 4



Preliminary Floor Plan - Fillmore Field Office, Utah

VISITOR FACILITIES

BLM visitor centers and contact stations are among some of the more highly visible and recognizable facilities constructed to provide information, interpretation, and visitor amenities to the general public. In many instances, the public's first impression of BLM may be shaped by the experience they have at one of these facilities. Interacting with friendly, knowledgeable staff coupled with visiting a well-maintained facility that includes high-quality exhibits and programs reinforces the image of BLM as an agency focused on providing a high level of customer service and dedicated to fostering a connection with the natural and cultural heritage treasures it has been entrusted to oversee.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Develop a site plan that permits flexibility and allows for future expansion
- Separate public and employee uses
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Provide comfortable interior and exterior spaces for employee use
- Provide visitor information and interpretation inside and outside

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features
- Minimize views of utilities
- Locate near existing utilities, services, and transportation networks
- Locate facilities on gently sloping terrain to minimize grading
- Buffer entries and gathering spaces from prevailing winds

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views to and from visitor center
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including: stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable energy
- Utilize passive solar design techniques
- Optimize energy performance through use of increased insulation, window glazing, installation of Energy Star-rated products, etc.
- Reduce water use via water-efficient landscaping, wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Ensure indoor environmental quality via use of low-emitting materials, ventilation, controllability of systems, day-lighting, views, etc.
- Reuse and recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.)
- Use pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place and correspond to interpretive themes
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Use durable materials
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Provide for safe storage and handling areas for potentially hazardous materials
- Provide accessibility throughout the site
- Clearly define safe pedestrian zone

5 Building entry is accented with stone masonry matching local geology

4 Photovoltaic panels are incorporated into structure and provide 100% of building power

2 Building is cradled by topography at base of slope; responds to natural setting

Cleveland-Lloyd Dinosaur Quarry Visitor Center, Utah

4 Clerestory and windows provide natural light

5 Colors and materials of the building and outdoor plaza are in harmony by use of natural materials

1 Outdoor spaces are inviting, shaded, include numerous options for seating

4 Trees provide shade and comfort

6 Plaza space is accessible

5 Colored concrete blends with landscape setting

THINK GREEN:

Alternative building materials:
- Adobe
- Cobb
- Light clay
- Straw-bale
- Bamboo
- Wheat-board
- Rubber
- Cork

Articulation of building mass provides visual interest — 5

Large windows welcome visitors and create a sense of openness, allowing natural light into the facility — 1 4

Arbor provides transition from indoor to outdoor space and provides shaded area — 1 4

Native vegetation and stone respond to landscape setting — 5

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

Large horizontal window connects indoor space to surrounding landscape — 2 5

Red Rock Canyon National Conservation Area Visitor Center, Nevada

5 Materials (wood shingles, sandstone masonry) are appropriate to natural and cultural context; they are attractive and long lasting

5 Building reflects local vernacular architecture

4 Porch overhang shades facade to provide both energy savings and visitor comfort

Grand Staircase-Escalante National Monument
Cannonville Visitor Center, Utah

1 Proper identification through prominent location of flag and sign

5 Variation in roof heights breaks up building mass

5 Roof pitch reflects slope of surrounding mountains

1 Entry is clearly defined and inviting to visitors with windows and overhang

5 Materials are coordinated and appropriate to setting

4 Small windows conserve heat in cold climate

Arctic Interagency Visitor Center, Alaska

Renewable energy sources provide energy and are sited so that they do not detract from architecture of building — 4

Colors and materials blend seamlessly with surrounding landscape — 5

Structure blends seamlessly with natural setting — 5

Articulation of building mass and coursing draws attention to and celebrates local landform — 5

Clerestory windows provide day-lighting — 4

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

5 Artistic replicas of petroglyphs celebrate Paleo-Indian culture

4 Building is constructed with earth bag architecture and natural plaster

4 Cedar posts obtained from an area with a recent fire

2 5 Fence provides visual screen of photovoltaic panels

Sand Island Contact Station, Utah

- 1 Entry is accentuated and welcoming to visitors
- 5 Color of building exterior matches landscape setting
- 2 Entry walkway winds around slope, preserving natural feature
- 6 Wide walkway is accessible

Oregon Trail Interpretive Center, Oregon

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

- 1 Visitors are welcomed through large outdoor plazas
- 5 Sculptures and exhibits may be used outdoors to draw attention and inspire connections to resources

- 5 Art piece incorporates natural elements from the landscape

Wildwood Recreation Site, Oregon

- 4 Natural day-lighting helps reduce the need for artificial lighting
- 1 Combination of art and educational media provides interest for a diversity of visitors
- 1 Large open interior space allows for flexible interpretive design

California National Historic Trail Interpretive Center, Nevada

- 4 Natural day-lighting helps reduce the need for artificial lighting
- 1 Educational media and interpretation is incorporated throughout
- 6 Accessible route
- 1 Stained concrete forms a durable, long-lasting, and easy to maintain surface

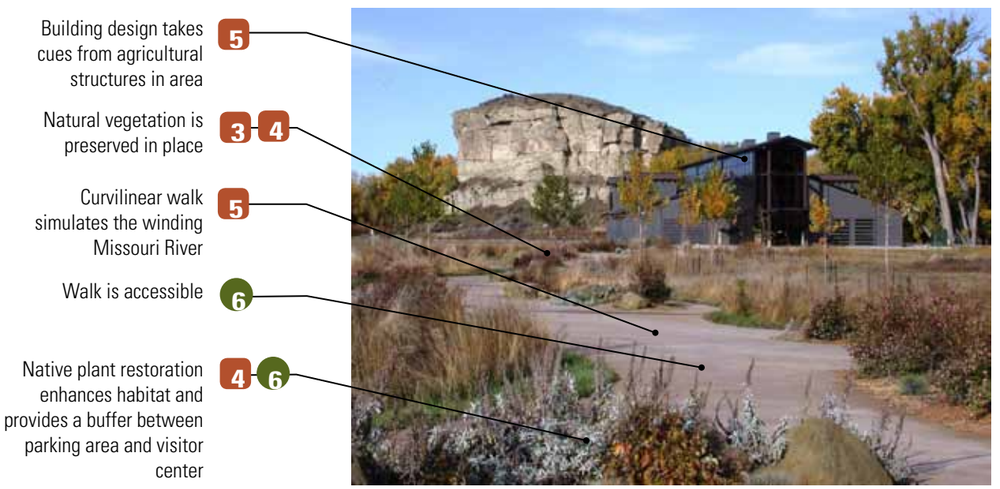
Cleveland-Lloyd Dinosaur Quarry Visitor Center, Utah

Upper Missouri Breaks National Monument
Fort Benton Visitor Center, Montana

Upper Missouri Breaks National Monument
Fort Benton Visitor Center, Montana

Pre-construction Site Visit - Future Location of
Red Rock National Conservation Area Visitor Center, Nevada

Computer Visualization of Red Rock Canyon National Conservation Area Visitor Center, Nevada



Pompeys Pillar National Monument Interpretive Center, Montana

FIRE FACILITIES

Fire facilities are often combined with other facilities and should be designed to provide a unified campus of structures that accommodate large vehicle use. Designs that address architectural character while considering potential expansion will be successful. Don't forget the additional amenities that should be included when these facilities provide housing for fire crew members.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Develop a site plan that permits flexibility and allows for future expansion
- Consider large open areas for training opportunities
- Protect facilities from theft and vandalism by providing barriers, security lighting, and authorized access
- Plan for accessibility
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Provide comfortable interior and exterior spaces for employee use

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of facility
- Locate near existing utilities, services, and transportation networks
- Locate facilities on gently sloping terrain to minimize grading
- Locate away from residential areas where screening is difficult
- Buffer entries and gathering spaces from prevailing winds

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views to and from fire facilities
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable energy
- Utilize passive solar design techniques
- Optimize energy performance through use of increased insulation, window glazing, installation of Energy Star-rated products, etc.
- Reduce water use via water-efficient landscaping, wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Ensure indoor environmental quality via use of low-emitting materials, ventilation, controllability of systems, day-lighting, views, etc.
- Rehabilitate, reuse, and recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Use pervious paving to reduce runoff and increase infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Use materials that are durable and long lasting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Provide for safe storage and handling areas for potentially hazardous materials
- Provide accessibility to building and site
- Use fencing to secure equipment and materials

Moab Fire Crew Quarters, Utah

SOMETHING TO CONSIDER:

- Provide electronic gates requiring entry cards at both entry and exit points
- Provide OSHA-compliant fall protection systems on PV panels that are mounted more than 48" above grade

THINK GREEN:

- Architecturally integrate photovoltaics into fire facilities and parking shade supports

4 Full-cutoff light fixtures reduce light pollution

4 Large overhangs offer passive solar benefits, shading windows and interior spaces

4 Operable windows allow personal comfort and ventilation

4 Shade to parking will be provided by canopy trees

5 Building finishes and plantings respond to landscape context

Rogerson Fire Crew Quarters, Idaho

6 Fence provides secure space and protects equipment

4 Passive solar shading is provided with large overhangs

5 Building color and material match the architectural and landscape character

1 Sign provides proper identification of Federal facility

1 Site is clearly defined and well organized

2 Site is located close to highway

Jordan Fire Station, Montana

6 Safe enclosure for fire equipment

Kanab Field Office, Utah

STANDARD PRACTICE:

- Purchase and specification of Energy Star-rated products is required per FAR Sections 23.203 and 52.223.15

STANDARD PRACTICE:

- Mezzanines and storage lofts must be structurally designed to support calculated load limits
- Load rating of mezzanine and storage loft must be clearly posted (lbs/sq ft)
- Properly designed guard rails must be installed to provide fall protection

MAINTENANCE BUILDINGS & WAREYARDS

Maintenance buildings and wareyards are essential to the day-to-day operations performed by BLM employees. Government vehicles, equipment, and materials need to be protected from theft, vandalism, and deterioration. Even though these utilitarian storage facilities are not utilized by the public and are often screened from view, they should be designed to optimize functionality as well as to respond to the architectural and landscape character of the area where they are located.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Develop a site plan that permits flexibility and allows for future expansion
- Protect facilities from theft and vandalism by providing barriers, security lighting, and authorized access
- Plan for accessibility
- Provide parking for a range of vehicle sizes
- Create an intuitive and recognizable entrance
- Provide comfortable interior and exterior spaces for employee use
- Provide buffers so that maintenance areas do not disturb neighbors

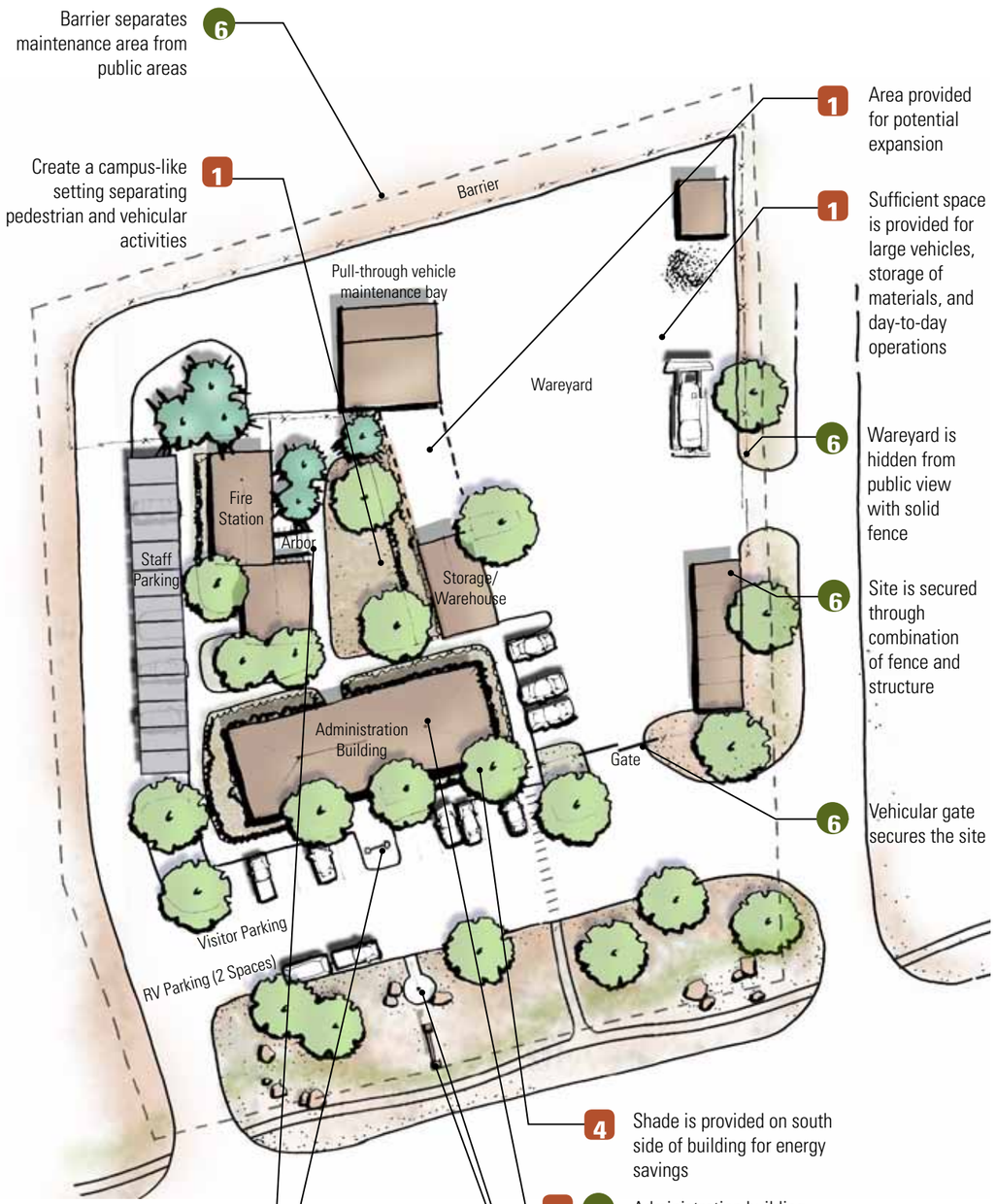
2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Minimize views of facility
- Locate near existing utilities, services, and transportation networks
- Locate facilities on gently sloping terrain to minimize grading
- Locate away from residential areas where screening is difficult
- Buffer entries and gathering spaces from prevailing winds

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define clear construction limits and construct temporary fencing to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable energy
- Utilize passive solar design techniques
- Optimize energy performance through use of on-site renewable energy, increased insulation, window glazing, and installation of Energy Star-rated products
- Reduce water use via water-efficient landscaping, wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Ensure indoor environmental quality via use of low-emitting materials, ventilation, controllability of systems, day-lighting, views, etc.
- Rehabilitate, reuse, and recycle where feasible and practical
- Use renewable, local, and/or recycled content materials
- Utilize above-ground stormwater management techniques (e.g., bioswales, filter strips, raingardens, etc.) adjacent to parking areas
- Use pervious paving to reduce runoff and increase water infiltration
- Prevent, control, and/or remove noxious/invasive weed species
- Provide shade to structures and paved areas
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between site materials and surrounding landscape
- Use materials that are durable and long lasting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter

6 Design for Safety and Security:
- Provide for safe storage and handling areas for potentially hazardous materials
- Provide accessibility to building and site
- Clearly define spaces and separation of uses
- Use fencing to secure equipment and materials



All buildings on site share similar materials, colors, and architectural character — 5

Site is clearly defined and well organized — 1

Caliente Maintenance Wareyard, Nevada

1 Buildings are functional, with clean lines and similar forms

4 Passive solar strategies include large overhangs and proper building orientation

6 Electric gate requires access card to exit as well as enter to prevent unauthorized exit

6 Fence secures government property

6 Hazardous materials are stored in appropriate structure

Kanab Field Office, Utah

Caliente Maintenance Wareyard, Nevada

2 Wareyard is sited behind administration building to screen maintenance operations from public view

Flat roof reduces height of structure and echoes horizontal lines of surrounding terrain — 5

Building color blends with surrounding landscape — 5

Kanab Field Office, Utah

SOMETHING TO CONSIDER:

- Provide ASHA-compliant fall protection systems on PV panels mounted more than 48" above grade
- Include mezzanine storage in wareyard

STANDARD PRACTICE:

- Mezzanines and storage lofts must be structurally designed to support calculated load limits
- Load rating of mezzanine and storage loft must be clearly posted (lbs/sq ft)
- Properly designed guard rails must be installed to provide fall protection

1 Mezzanine in warehouse provides additional storage and office space

Kanab Field Office, Utah

THINK GREEN:

- Architecturally integrate photovoltaics into wareyard buildings and parking shade supports

6 Simple enclosures in warehouse provide additional secure storage

Kanab Field Office, Utah

RESTROOMS

The most important parameters to be considered in designing a restroom are location, visitor comfort, and sanitation. The cleanliness and practicality of the facility must remain first and foremost. However, restrooms should also fit in aesthetically with other site structures as well as complement the natural setting. Restrooms provide good opportunities to employ green technologies to express BLM's land stewardship ethic.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- View architectural design as an opportunity to enhance the sense of place

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of restrooms
- Locate restrooms in relation to other facilities and circulation patterns to reduce social trailing
- Locate restrooms on gently sloping terrain to minimize grading
- Buffer entry from prevailing winds
- Locate vault toilet-style restrooms down wind of other site amenities

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views to restrooms
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Reduce water use via innovative wastewater technologies, high-efficiency fixtures, use of nonpotable water, etc.
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project
- Include windows/skylights for day-lighting; if artificial lighting is needed, consider solar PV
- Utilize windows or openings above eye level for natural light and ventilation

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

6 Design for Safety and Security:
- Provide accessibility to restrooms and associated spaces
- Eliminate visibility into restrooms by including visual barriers
- Specify self-closing doors
- Erect barriers to protect investment
- If lighting is necessary, mount shielded and downward-focused fixtures to structure to minimize light pollution

7 Plan For Maintenance:
- Consider long-term maintenance
- Locate restrooms to allow for easy access for cleaning/ maintenance
- Make provisions to properly drain all pipes and fixtures based upon climate
- Use materials that are durable
- Slope concrete slab at 2% toward entrance door to facilitate drainage out of restroom

Red Rock Canyon National Conservation Area, Nevada

Wild Rivers Recreation Area, New Mexico

Hall Ranch, Colorado

4 Clerestory windows provide light and ventilation to rest room

5 Restroom has architectural character similar to other site structures

4 Roof is appropriately pitched for climate

6 Light increases safety and security in a dark rainforest environment

5 Architectural style matches character of local vernacular

5 Use of local river rock on base is appropriate for setting

6 Grade is maintained so that concrete pad is accessible

Wildwood Recreation Site, Oregon

5 Architectural style matches character of local vernacular

6 Views into restroom entries are screened

4 Barriers protect surrounding vegetation

6 Lockable vault cover reduces likelihood of vandalism

Seward Highway-Turnagain Arm Wayside, Alaska

7 Durable materials are used

5 Building colors and materials blend with landscape setting

1 6 Restroom is accessible

Grand Staircase-Escalante National Monument, Utah

SHELTERS

Shelters on public lands provide a place for people to gather that is protected from the elements, whether it be wind, sun, rain, or snow. When sensitively designed and constructed, users feel safe and protected, but still connected to the natural environment they are visiting. As outdoor living spaces, shelters should be accessible, constructed of durable materials that require low maintenance, and be placed in the setting so as to complement the architectural and landscape character of the place.

1 Plan for Use and Users:
- Identify the users and their needs, and types and intensities of use
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Allow sufficient space within shelter for users, furniture, and circulation

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Maximize views of natural features and minimize views of facility
- Locate shelters in relation to other facilities and circulation patterns to reduce social trailing
- Locate shelter on gently sloping terrain to minimize grading
- Buffer from prevailing winds

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for development
- Identify views to and from shelter
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of facility to setting
- Use materials that are durable and long lasting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

6 Design for Safety and Security:
- Ensure proper grades, surfaces, and adequate space for accessibility
- Ensure the structural design accounts for calculated maximum wind and snow loads

5 Beams are sized to give a feeling of permanence

1 5 Steel posts ensure long-lasting pergola with limited opportunity for vandalism

Zion National Park, Utah

5 Stone matches the landscape character of the region

4 Stone is locally available

Steep pitched roof is appropriate for rainforest climate 4

Material colors blend with landscape setting 5

Massing of timbers reflects local architectural vernacular 5

Post detail mimics carving art of Northwest Native Americans 5

Local stone 4

Cascade Streamwatch, Oregon

5 Rounded wood posts and rails are used throughout site

1 Shelter provides large gathering area with expansive views

Goldbar Picnic Area, Utah

Timbers, stone, and metal are regionally available 4

Shelter is sized to accommodate large events 1

Large timber reflects the character of the forest 5

Heil Ranch, Colorado

4 5 Structure uses native stone to reflect local landscape character

6 Ramp provides accessibility

Great Basin National Park, Nevada

KIOSKS & INTERPRETIVE STRUCTURES

Kiosks and interpretive structures are commonly used to share both the cultural and environmental public lands stories, as well as the regulatory and safety information that must be communicated to help ensure a quality visitor experience and resource protection. Opportunities to convey those special stories of place are held not only in the interpretive panel's text and graphics, but also in the architectural design of the structures that support them. When combined with interpretive panels, these structures provide great opportunities to design subtle forms that grow from the landscape, celebrate the local vernacular, and apply innovative green building techniques to express BLM's commitment to quality design and land stewardship.

1 Plan for Use and Users:
- Identify the function and use of kiosk/interpretive structure
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Provide protection from the elements (i.e., sun, rain, wind, snow) if needed

2 Select Appropriate Site:
- Avoid sensitive habitat, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Locate kiosk near entry to site and in relation to other facilities and circulation patterns to reduce social trailing
- Locate interpretive structure with direct view to feature being interpreted
- Locate on level to gently sloping terrain to minimize grading

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for kiosk installation
- Identify views to and from kiosk
- Clearly identify areas with safety and resource protection concerns
- Study sun angles to best provide shade

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View architectural design as an opportunity to enhance the sense of place
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of facility to setting
- Use durable materials
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

6 Design for Safety and Security:
- Build kiosks and interpretive structures to withstand calculated maximum wind loads

Custom detail across top of kiosk mimics Monument logo graphic — 5

Grand Staircase-Escalante National Monument, Utah

Steel posts ensure long-lasting, vandal-resistant structure — 1

Interpretive panels are easily replaced by removing top bar — 1

McInnis Canyons National Conservation Area, Colorado

Shelter incorporated into kiosk gives protection to both visitors and panels — 1

Native stone columns reflect landscape character — 5

Crusher fines provides accessibility — 1

1 Roof provides cover from elements

1 Three panels provide varying levels of detailed information

McInnis Canyons National Conservation Area, Colorado

Large timbers reflect local architectural vernacular — 5

Panels are large and highly visible — 1

Rogue-Umpqua Scenic Byway, Oregon

1 Panel height and angle is accessible

4 Base is constructed of local stone

Matheson Wetlands Preserve, Utah

Natural wood structure is appropriate for setting — 5

Post anchors make replacement more manageable — 1

Sand Flats Recreation Area, Utah

5 Durable materials are used

2 Located on edge of path, this kiosk also serves as a barrier

Swan Falls Wayside, Idaho

Repeated use of wood forms on site creates consistent architectural elements — 5

Surface mounted for easy, quick repairs — 1

Use of traditional "rip-gut" fence reflects ranching culture of the region — 5

Grand Staircase-Escalante National Monument
Cannonville Visitor Facility, Utah

Incorporation of three-dimensional elements creates unique exhibit that interprets local wildlife — 5

Red Rock Canyon National Conservation Area Visitor Center, Nevada

BARRIERS

Whether a fence, wall, bollard, post, or boulder, physical barriers serve a similar purpose: protection. They can protect property, human safety, or natural or cultural resources. Careful selection of barriers can create a subtle yet clear boundary. The integration of barriers into the landscape is critical to reducing their visual impact.

1 Plan for Use and Users:
- Identify function and use of barriers
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening
- Minimize use of constructed barriers by using natural barriers (i.e., topography, boulders/rock outcrops, vegetation) to degree possible

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for barrier installation
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Restore disturbed areas after construction
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of barriers to setting
- Use materials that are durable
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

Grand Canyon National Park, Arizona

Coos Bay, Oregon

Barrier is also an interpretive feature 1

Wood fence materials are available locally 4

Use of "rip-gut" fence style reflects the regional character of the place 5

Grand Staircase-Escalante National Monument
Cannonville Visitor Center, Utah

1 5 Minimal barrier allows a very open feel while effectively creating a barrier to vehicular access

4 Low-profile barrier is a subtle way to protect an area

4 1 Materials are readily available; barrier is a cost-effective solution

Rock Springs, Wyoming

Simple, natural timber barrier is appropriate for setting 5

Red Rock Canyon National Conservation Area, Nevada

Barbed wire fence provides a nearly invisible barrier at low cost and is low maintenance 1 5

BLM

4 Buck and rail fence construction leaves minimal disturbance

4 5 Fence is constructed with local materials and responds to character of place

4 Fence allows wildlife to pass through while protecting property and resources

Winter Park, Colorado

Barrier uses local river stone 4 5

Barrier incorporates artistic elements that reflect local ecosystem 5

Wildwood Recreation Site, Oregon

5 Details in the fence reflect local architectural vernacular

1 Gate provides secure vehicular access

4 Wood is locally available

Headwaters Forest Reserve, California

SITE FURNITURE

We take for granted the careful thought involved in proper selection of site furniture. Facilities with an organized and unified family of site furniture will function more efficiently and relieve visual clutter. Equally important to the location and material of the furniture is the manufacturing process from which it came. Look for durable products made from materials that are recycled and recyclable.

1 Plan for Use and Users:
- Identify the function and use of site furniture
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Locate trash receptacles to allow for easy access for cleaning and maintenance

2 Select Appropriate Site:
- Utilize vegetation, topography, or other natural features for screening
- Locate site furniture in relation to facilities and circulation patterns to reduce social trailing
- Locate site furniture on level to gently sloping terrain to minimize grading

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for site furniture placement
- Clearly identify areas with safety and resource protection concerns
- Select furnishings that are flexible and will accommodate future changes in program

4 Implement Green Strategies:
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of site furniture to setting
- Use materials that are durable and long lasting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

6 Design for Safety and Security:
- Provide accessible site furniture
- Select sturdy, well-anchored furniture
- Avoid furniture with sharp corners or that are tripping hazards

Trash receptacle is animal proof (6)

Trash receptacle is appropriately placed for maintenance personnel and user convenience (1 2)

Red Rock Canyon Campground, Nevada

Water fountain is integrated into building facade (5)

Bench is constructed of native stone to match building facade and landscape setting (5 4)

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

Recycled materials (4)

Furniture is sturdy and well anchored (6)

Site fixtures are located in a high-use area (2)

Cleveland-Lloyd Dinosaur Quarry, Utah

Site materials complement each other with similar colors — 5

Cleveland-Lloyd Dinosaur Quarry, Utah

2 6 Site fixtures are placed to allow accessible routes around various elements

2 3 Site furniture is placed in a shaded area

Joe T. Fallini Campground, Idaho

Water fountain matches architectural style of site and region — 5

Wildwood Recreation Site, Oregon

4 Local stone material is cost effective and requires little maintenance

2 3 Bench is located in the shade of the building

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

2 5 Bike rack is constructed out of durable, long-lasing materials

1 Adequate space is provided around bike rack

Grand Staircase-Escalante National Monument
Escalante Interagency Visitor Center, Utah

Site furniture is placed in a shaded area — 3

Wood is locally available — 4

Accessible space located on side of table rather than end — 6

North Umpqua Wild and Scenic River Trailhead, Oregon

2 Bench located at convergence of trails

5 Simple bench and muted color does not detract from surrounding environment

Scott Matheson Wetlands Preserve, Moab, Utah

SIGNS

Effective communication requires clear, concise delivery of an understandable message through a powerful medium. Signs are one of BLM's primary avenues of communicating with the public. They provide the most recognizable method of identifying BLM lands and facilities, and they play a major role in conveying a positive image of the agency. The BLM Sign Guidebook should be utilized to ensure signs are simple and uniform, are sized and located appropriately, and enhance the visitor experience. Preparing a Sign Plan is of utmost important to determine whether signs are the best way to share messages and information. BLM signs are our "silent employees" and should be respected and carefully considered for the valuable roles they play.

1 Plan for Use and Users:
- Identify the function and use of signs
- Include signs in a communication strategy that dovetails with Resource Management Plans
- Determine whether signs are best method of communicating information
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility
- Identify viewer distance, location, and travel speed to determine effective sign and lettering size

2 Select Appropriate Site:
- Avoid sensitive habitat, wildlife corridors, steep slopes, and unstable soils
- Protect scenic, cultural, and historic values
- Ensure clear visibility to sign face
- Locate signs strategically to reduce number needed
- Align large site signs 87-93 degrees to roadway
- When adjacent to highways, locate according to DOT standards
- Locate signs on right-hand side of roadway
- Place site signs on approach at least 200 feet prior to site entrance

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for sign placement
- Identify views to signs
- Clearly identify areas with safety and resource protection concerns

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Use signs and posts containing post-consumer recycled content or biobased materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- Maintain consistency with BLM Sign Standards following BLM Sign Guidebook
- Use a coordinated system of identification, orientation, traffic control, and regulatory signs to reduce sign clutter
- Ground large site signs to the landscape using bases that respond to setting
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of signs to setting
- Use materials that are durable and long lasting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

Grand Staircase-Escalante National Monument
Glendale Contact Station, Utah

Sign materials match architectural and landscape character of area and other site structures — 5

Sign is located where it is highly visible — 2 5

Sign follows BLM-NLCS Standard — 5

STANDARD PRACTICE:
- Refer to BLM Sign Guidebook
- Consult National Sign Center for guidance on policy and purchasing
- Use post-consumer recycled content signs and posts per Executive Order 13423 and FAR Section 23.401 (b)(1)

Red Rock Canyon National Conservation Area Visitor Center, Nevada

1 Logo is large and reads well

5 Materials are consistent with contemporary style of facility

5 Sign is integrated into architecture

5 Sign follows BLM-NLCS Standard

5 Custom graphic is National Monument logo

5 Sign is integrated into planting design

Upper Missouri River Breaks National Monument, Montana

Sign is located immediately adjacent to the road, ensuring visibility — 2

Base is constructed of local stone — 4

Agua Fria National Monument, Arizona

5 Simple wood sign blends with forested setting

Smith River Falls Recreation Site, Oregon

Sign is located immediately adjacent to the road, ensuring visibility — 2

Simple base creates minimal disturbance in landscape — 4

Wood post base is cost effective — 1

Carlin Canyon Historical Wayside, Nevada

4 Sign contains post-consumer, recycled content materials

5 Timber sign base attached to rock reflects adjacent trees

Grand Staircase-Escalante National Monument, Utah

SOMETHING TO CONSIDER:

- Do not rely on signs to improve poor site design

5 Weathering steel sign is low maintenance and appropriate to landscape setting

Red Gulch Tracksite, Wyoming

2 Sign notifies driver of viewpoint an adequate distance from turn-off

5 Natural timber post is indicative of landscape setting

Blue Mesa Viewpoint, Utah

THINK GREEN:

- Signs from the National Sign Center contain post-consumer recycled and/or biobased materials
- Signs containing post-consumer recycled content are more resistant to vandalism than traditional wood signs

Sign is at proper angle and is highly visible from roadway — 2

Simple base creates minimal disturbance in landscape — 4

San Pedro Riparian National Conservation Area, Arizona

LIGHTING

One of the most outstanding sights we experience on our public lands is a dark night sky full of stars. Protecting this night sky is extremely important for both visitor enjoyment and to protect sensitive ecosystems from light pollution. It is critical to determine whether lighting is truly warranted in a given situation because "more light" does not translate to "increased safety." If it is deemed that lighting is necessary, identify where and when it is needed. Using a cohesive family of quality lighting fixtures and taking a sensitive approach to a lighting design will create safe and enjoyable spaces.

1 Plan for Use and Users:
- Identify the function and use of lighting
- Lighting should be carefully designed with regard to placement, intensity, timing, duration, and color
- Consider long-term maintenance
- Assess the potential for vandalism and use fixtures and materials that are resistant to damage
- Plan for accessibility

2 Select Appropriate Site:
- Avoid sensitive habitat and wildlife corridors
- Protect scenic, cultural, and historic values
- Utilize vegetation, topography, or other natural features for screening

3 Prepare Site Analysis:
- Compile information about site conditions, including natural and built features, existing vegetation, soils, hydrology, topography, sun aspect, wind patterns, and precipitation
- Analyze site information to identify opportunities and constraints for lighting installation
- Identify views to lighting
- Clearly identify areas with safety concerns where lighting is warranted

4 Implement Green Strategies:
- Protect sensitive areas, including stream channels, floodplains, wetlands, erodible slopes, and existing vegetation
- Define and flag clear construction limits to minimize soil compaction and damage to existing vegetation during construction
- Minimize light trespass from development through optimal placement of fixtures to reduce impact on nocturnal environments
- Consider use of timers and motion or light sensors, and use of full cutoff fixtures, low-angle spotlights, and low-reflectance surfaces
- Use renewable energy sources and off-grid lighting such as photovoltaics
- Use high-efficient fixtures and the lowest wattage lamp required
- Use renewable, local, and/or recycled content materials
- Consider life cycle costs of project

5 Design a Cohesive Environment:
- View the entire site as a whole and design the facility to respond to the architectural and landscape character of the place
- Create visual consistency between materials and surrounding landscape
- Correspond scale, style, and durability of lighting to setting
- Select and consistently utilize a limited palette of materials, styles, colors, and textures

6 Design for Safety and Security:
- Select sturdy, well-anchored light fixtures
- Avoid light fixtures with sharp edges or that are tripping hazards

Grand Staircase-Escalante National Monument
Big Water Visitor Center, Utah

The mission of the International Dark-Sky Association is to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting. Information regarding the effects of light pollution and possible solutions is available at http://www.darksky.org

4 Light spill is reduced by use of down lights, directing light only where needed

5 Sight lighting is integrated into architecture

Red Rock Canyon National Conservation Area Visitor Center, Nevada

Light spill is reduced by use of down lights, directing light only where needed 4

THINK GREEN:

Consider using:

- Photocells
- Timers
- Motion sensors
- Full cutoff fixtures
- LED bulbs
- Compact fluorescent bulbs
- Low-level lighting

Red Rock Canyon National Conservation Area Visitor Center, Nevada

6 Bollard lights increase safety of accessible path

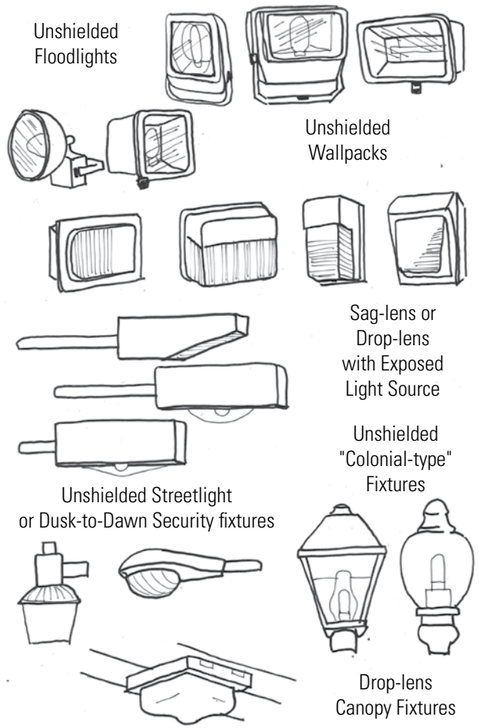
4 Low-level path lighting reduces light spill

California Trail Visitor Center, California

UNSHIELDED FIXTURES

DISCOURAGED

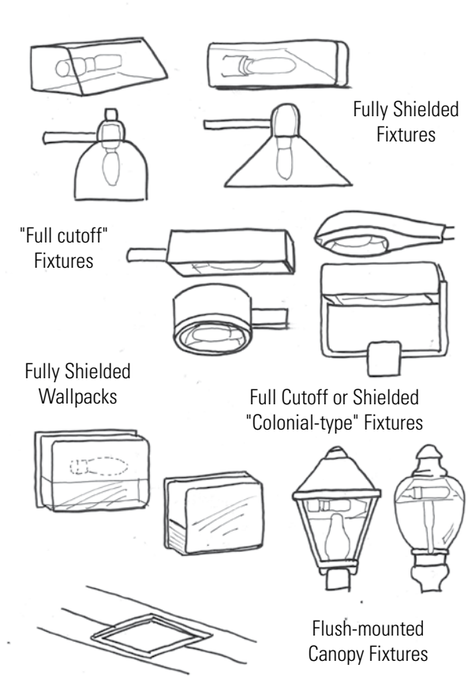
Fixtures that produce glare and light trespass



FULL CUTOFF AND FULLY SHIELDED FIXTURES

ENCOURAGED

Fixtures that shield the light source to reduce glare and light trespass and to facilitate better vision at night



APPENDICES

APPENDIX A - SUMMARY OF SUSTAINABLE DESIGN, CONSTRUCTION, OPERATIONS, AND MAINTENANCE MANDATES FOR BLM-OWNED AND LEASED FACILITIES

The summary of sustainable mandates is intended to provide BLM personnel with a quick reference tool on requirements related to the following topics:

1. Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings
2. Use of Recovered/Recycled Content and Biobased Products
3. Energy Conservation
4. Renewable Energy
5. Water Conservation
6. Construction and Demolition Debris
7. Sustainable Operations and Maintenance

Specific references to the legislative, executive, Federal Acquisition Regulation (FAR), or BLM mandates are provided in brackets and italics.

1. ***GUIDING PRINCIPLES FOR FEDERAL LEADERSHIP IN HIGH PERFORMANCE AND SUSTAINABLE BUILDINGS (GUIDING PRINCIPLES)***

a. All BLM construction, including build-to-suit leasing projects, new direct leases, and renovation projects over $2M, must incorporate the Guiding Principles.

All construction projects initiated in FY 2008 and beyond must meet Guiding Principle's requirements. *[Executive Order 13514, Section 2(g)(ii) and (iii)]*

Those requirements include the following mandatory design/construction sustainable features:

- Integrated Design, including Integrated Project Team, Performance Goals, and Life Cycle Cost Analysis
- Commissioning of electrical and mechanical systems
- Energy conservation and measured performance *[EPAct 2005, Executive Order 13423, Executive Order 13514 and EISA 2007]*
- Water conservation *[Executive Order 13423, Executive Order 13514, and EISA 2007]*
- Ventilation and thermal comfort
- Moisture control
- Day-lighting
- Use of low-emitting materials
- Protect indoor air quality during construction
- Use of recyclable content products
- Use of biobased content products
- Divert (i.e., reuse or recycle) construction and demolition debris
- Use of non-ozone depleting compounds

The BLM Sustainable Building Implementation Plan issued via Washington Office Instruction Memorandum 2010-026 provides details on each of the above requirements. The BLM Sustainable Building Implementation Plan and Guiding Principles requirements are summary legislative and executive order mandates. A checklist of Guiding Principle's mandates to be used during the planning, design, and construction of new construction projects and build-to-suit leases is provided as Appendix 2.B.1 of the BLM Sustainable Building Implementation Plan. (Note: A build-to-suit lease is defined as new construction.)

b. Construction, renovation, and build-to-suit leasing projects over 5,000 square feet must achieve third-party certification that they meet the Guiding Principles.

Construction, renovation, and build-to-suit leasing projects will achieve third-party certification that the project meets and/or exceeds the Guiding Principles. *[BLM Sustainable Building Implementation Plan, Section 1.B.2.a (construction), Section 1.B.2.b (renovation), and Section 1.B.2.c (built-to-suit lease)]*

c. 15% of BLM's existing buildings and leases over 5,000 square feet must incorporate the Guiding Principles by FY 2015 with annual progress to towards 100% conformance.

Existing buildings built prior to FY 2007 must also incorporate the Guiding Principles. BLM Sustainable Building Implementation Plan, Appendix 2.C.1, includes a checklist to be used to determine if an existing building conforms to the Guiding Principles. A checklist to determine if a new direct lease conforms to the Guiding Principles is provided as Appendix 2.B.2 of the BLM Sustainable Building Implementation Plan. Leases issued prior to FY 2008 must incorporate the Guiding Principles.

The Guiding Principles requirements for existing buildings are slightly different than for new construction. The primary differences are as follows:

- Guiding Principle I - requires recommissioning of existing Federal buildings, tailored to the size and complexity of each building and its system components. Building recommissioning must have been performed within four years prior to reporting a building as meeting the Guiding Principles.
- Guiding Principle II - requires a 20% reduction in energy consumption or a minimum Energy Star rating of 75 for existing Federal buildings.
- Guiding Principle III - requires a 20% reduction in indoor water use compared to a baseline conforming to EPAct 1992 fixture performance requirements. Water-efficient landscape and irrigation strategies are also required (including water reuse, water recycling, xeriscaping, etc.) to reduce outdoor potable water consumption by 50% over that consumed by conventional means.

2. *USE OF RECOVERED/RECYCLED CONTENT AND BIOBASED PRODUCTS*

EPA-designated recovered/recycled content and Department of Agriculture-designated biobased products must be specified and/or purchased unless the item cannot be acquired [FAR Section 23.404(b)(1)]:

(i) Competitively within a reasonable time frame;
(ii) Meeting reasonable performance standards; or
(iii) At a reasonable price.

The above criteria describing when an EPA or Department of Agriculture environmentally preferable product must be purchased is taken from the FAR Section 23.404(b). The FAR does not define "reasonable time frame", "reasonable performance standard," or "reasonable price."

FAR Section 23.400(a) states that EPA-designated recovered/recycled content products and Department of Agriculture-designated biobased products must be specified and/or purchased if $10,000 or more of the designated product is purchased by the agency (i.e., the Department of the Interior). Since the Department of the Interior's collective purchases exceeds the threshold, BLM is required to purchase EPA-designated and Department of Agriculture-designated products.

a. Contractors can be required to provide recovered/recycled content and biobased products.

The FAR includes clauses that, when inserted into a contract, require offers to certify that the biobased or recovered materials products delivered or used in the contract meet the minimum percentages set by Department of Agriculture or EPA for those products. Clauses also exist that direct a contractor to make maximum use of biobased and EPA recovered/recycled content products. *[FAR Subparts 52.223-1, 52.223-2, 52.223-4, 52.223-17 – "Contract Clauses for Biobased and CPG Products"]*

b. Written justification must be prepared if EPA recovered/recycled content product is not specified or purchased.

A written justification must be prepared when an EPA-designated recovered/recycled content product is not purchased. *[FAR Section 23.405(c) and BLM Green Purchasing Plan Sections 7.1, 7.2, and 9.4.2]* The form on which the justification is to be documented is provided in Appendix 2 of BLM's Green Purchasing Plan.

BLM contracting officers, requisitioners, or credit card holders are required to complete the written justification, depending on the type of purchase or acquisition. Section 7.1 of the Green Purchasing Plan addresses the acquisition staff's responsibilities in regard to preparation of the written justification. Section 7.2 of the plan addresses the requisitioners' and credit card holders' responsibilities.

c. The types of recovered/recycled content, biobased products, Energy Star, and WaterSense products that must be purchased or specified.

A compilation of green products has been prepared by the Office of the Federal Environmental Executive. This compilation can be downloaded at: http://www.fedcenter.gov/programs/buygreen/ by clicking on the Excel spreadsheet icon titled "Green Products Compilation," or email BLM's CASHE Program Lead to request a copy.

The compilation is organized by product use not by type of product (i.e., whether it is a recovered/recycled content, biobased, Energy Star, or WaterSense designated product). There are 18 general categories including, but not limited to, the following:

- Building Construction
- Building Finishes
- Building Interior
- Non-paper Office Products
- Office Electronics
- Parks and Recreation
- Roadway Construction
- Traffic Design

BLM's Green Purchasing Plan also has a summary of the agency's most commonly used, environmentally preferable products (Appendix 1). The appendix has numerous hyperlinks that provide specifics on the mandated recovered/recycled or biobased content or how much energy or water is saved by the product to meet the designation. The plan also provides information on where to purchase these environmentally preferable products. *[BLM Green Purchasing Plan, Appendix 1 issued via Washington Office Instruction Memorandum 2009-166]*

3. *ENERGY CONSERVATION*

a. Existing buildings energy use intensity must be reduced by 30% from FY 2003 baseline.

Each Federal agency is required to apply energy conservation measures to new and existing Federal buildings so that the energy consumption per gross square foot of floor area in fiscal years 2006-2015 is reduced by 3% each fiscal year starting in 2006 through 2016, for a total reduction of 30% based on energy consumption for fiscal year 2003. *[Energy Independence and Security Act of 2007, Section 431]* BLM will achieve compliance with this requirement with the completion of the third phase of the Energy Savings Performance Contract issued by the National Operations Center.

b. BLM buildings built after FY 2007 must consume 30% less energy.

Federal buildings (commercial or residential) must be designed so they consume 30% less energy (20% less for renovations) than buildings that meet the requirements of ASHRAE 90.1-2004 or the 2004 IECC (International Energy Conservation Code), where life-cycle cost effective. *[Energy Policy Act of 2005, Section 109, Building Performance Standards]*

c. Energy Star products must be purchased and specified regardless of cost.

Energy-consuming products that are Energy Star rated (e.g., office equipment, home electronics, heating and cooling equipment, building construction products, appliances, and lighting) must always be specified and/or purchased regardless of cost. *[FAR Section 23.203 and Executive Order 13514, Section 2(i)(iv)]*

A list of Energy Star-designated products commonly purchased by BLM is provided in Appendix 1 of the BLM Green Purchasing Plan [issued via Washington Office Instruction Memorandum 2009-166].

FAR Section 23.204 – "Procurement Exemption" does provide two exemptions under which a BLM office would not have to purchase Energy Star products, but it is highly unlikely that the facility would quality for either of them. The FAR states that the Secretary of the Interior must determine in writing that there is no Energy Star product that is reasonably available that meets the functional requirements of the agency or that no Energy Star product is cost effective over the life of the product. Therefore, this plan simply states that Energy Star products must be specified and/or purchased because it is highly unlikely that BLM would pursue having an exemption determination made by the Secretary.

d. Energy Star products must be provided by contractors.

Construction contractors are to ensure that energy-consuming products specified in the contract be Energy Star rated if those products are listed in the Energy Star Program if the appropriate FAR clauses are inserted into the contract. *[FAR Section 52.223.15, Energy Efficiency in Energy-Consuming Products]*

e. Energy conservation audits must be completed every four years.

Comprehensive energy audits at facilities that comprise 75% of BLM's energy usage must be performed every four years. The National Operations Center Architecture and Engineering Branch plans to perform these energy audits through the use of an Energy Management Information System that will be in operation by FY 2012, and through the CASHE Program. *[Energy Independence and Security Act of 2007, Section 432, paragraph 3(A)]*

f. Fossil fuel consumption must be reduced.

New Federal buildings and Federal buildings undergoing major renovations must be designed such that fossil fuel-generated energy consumption is reduced (as compared with such energy consumption by a similar building in fiscal year 2003) by the percentages shown in the following table: *[Energy Independence and Security Act of 2007, Section 433]*

Fiscal Year	Percent Reduction in Fossil Fuel Consumption
2010	55
2015	65
2020	80
2025	90
2030	100

g. Advanced metering is required on all BLM-owned facilities that use more than $20,000 of electricity annually.

Electrical energy use in Federal buildings must be metered with advanced meters "for the purposes of efficient energy use and reduction in the cost of electricity used in such buildings "by October 1, 2012. Advanced meters or metering devices must upload stored data at least daily and measure the consumption of electricity at least hourly. Current BLM policy is to install advanced meters on all BLM-owned facilities that use more than $20,000 of electricity per year. *[Energy Policy Act of 2005 Section 103]* Advance meters have been installed at all BLM-owned buildings that were in operation by 2010 by the Energy Savings Performance Contracts awarded by the National Operations Center.

h. Data Centers must implement best practices.

Federal agencies are required to implement best management practices for the energy-efficient management of data servers and Federal data centers (this includes server virtualization and energy-efficient HVAC system implementation). Virtualization consists of a software solution that allows a single server processor to act as if it were multiple server processors. Typical processor utilization is in the range of 5% to 15%; virtualization enables processor utilization to be raised into the 85% to 90% range. This allows fewer physical processors to do the same work, reducing overall energy consumption – ratios of reductions in physical servers can be from 7:1 to as much as 30:1. See http://www.bchydro.com/powersmart/commercial/data_centre_and_server.html for more information. *[Executive Order 13514, Section 2(i)(v)]*

4. ***RENEWABLE ENERGY***

a. Renewable energy must provide at least 7.5% of BLM's energy requirements by FY 2013

The Federal Government's renewable electricity production must meet or exceed 3% of total electrical energy consumption for fiscal years 2007-2009, with increases to at least 5% in fiscal years 2010-2012 and 7.5% in 2013 and thereafter. This legislation also establishes a double credit bonus for Federal agencies if the renewable electricity is produced onsite at a Federal facility, on Federal lands, or on Native American lands. *[Energy Policy Action of 2005, Section 203]* BLM will exceed this requirement with the completion of the renewable energy projects constructed by the Energy Savings Performance Contract awarded by the National Operations Center in FY 2010.

b. Domestic hot water is to be offset with solar domestic hot water.

Domestic hot water heating energy use in new Federal buildings and Federal buildings undergoing major renovations are to be offset with solar water heating equipment, where life-cycle cost effective. [Energy Independence and Security Act of 2007, Section 523]

c. Energy use must be net zero for new buildings by FY 2030.

Federal agencies must ensure that all new Federal buildings entering the design phase in 2020 or later are designed to achieve zero net energy by 2030. *[Executive Order 13514 Section 2(d)(i)]*

5. ***WATER CONSERVATION***

a. Reduce building water use intensity by 26% by FY 2020

Water use intensity (gallons per gross square foot of floor area) must be reduced by 2% each year through fiscal year 2020 for a total of 26%, based on water consumption for fiscal year 2007 (this is an extension of the E.O. 13423 requirements for reducing potable water use from 2015 to 2020). *[Executive Order 13514 Section 2(d)(i)]*

b. Industrial, landscaping, and agricultural water consumption must be reduced by 20% by FY 2020.

Water consumption must be reduced by 2 percent annually or 20 percent by the end of fiscal year 2020 relative to a baseline of the agency's industrial, landscaping, and agricultural water consumption in fiscal year 2010. *[Executive Order 13514 Section 2(d)(ii)]*

c. WaterSense plumbing fixtures and irrigation control systems must be purchased and specified.

Plumbing fixtures (e.g., sink faucets, toilets, urinals, shower heads) and irrigation control systems must be WaterSense-rated products that comply with the EPA's standards for water-efficient products and must be specified and purchased. *[Executive Order 13423, Section 2(d)]*

d. Water conservation audits must be completed every 4 years.

Comprehensive water audits at facilities that comprise 75% of BLM's water usage must be performed every four years. The National Operations Center Architecture and Engineering Branch plans to perform these energy audits through the use of an Energy Management Information System that will be in operation by FY 2012 and through the CASHE Program. *[Energy Independence and Security Act of 2007, Section 432, paragraph 3(A)]*

6. ***CONSTRUCTION AND DEMOLITION DEBRIS***

a. At least 50% of construction and demolition debris must be recycled by FY 2015.

Construction and demolition materials and debris means materials and debris generated during construction, renovation, demolition, or dismantling of all structures and buildings and associated infrastructure. At least 50% of construction and demolition materials and debris must be recycled by the end of FY 2015. *[Executive Order 13514, Section 2(e)(ii)]* The National Operations Center Architecture and Engineering Group has already revised MasterSpec and incorporated this requirement into Section 01524 - Construction Waste Management specification.

7. ***SUSTAINABLE OPERATIONS AND MAINTENANCE***

a. Green janitorial services and lighting maintenance must be specified.

Green preferable janitorial services and lighting maintenance must be specified. The requirements in this specification are to be used by all organizational units in leased or owned space when a new contract is awarded or when an option is picked up, whichever occurs first. *[BLM Green Purchasing Plan, Section 9.2.3. issued via Washington Office Instruction Memorandum 2009-166]* These requirements have already been incorporated into BLM's standard space leasing contract. A sample specification for green janitorial services and lighting maintenance is provided in Appendix 4 of BLM's Green Purchasing Plan. The specification has the following green requirements:

- Use of green cleaning products;
- Stocking and use of paper products and trash can liners that are compliant with EPA's CPG requirements for recovered/recycled content;
- Use of energy-efficient low-mercury fluorescent lamps and compact fluorescent bulbs; and
- Recycling of spent and broken fluorescent lamps and compact fluorescent bulbs.

b. Building operations and maintenance must be sustainable.

BLM will have invested more than $25M in energy conservation measures and renewable energy generation at BLM-owned facilities when the third phase of the Energy Savings Performance Contract is completed in FY 2011. Executive Order 13514 and the BLM Sustainable Building Implementation Plan require that BLM manage new and previously installed building systems to reduce the consumption of energy, water, and materials, and identify alternatives to renovation that reduce existing assets' deferred maintenance costs. *[Executive Order 13514, Section 2(g)(v) and the BLM Sustainable Building Implementation Plan, Section 3A]*

The sustainable operations and maintenance practices that BLM facilities are required to implement include, but are not limited to, the following: *[BLM Sustainable Building Implementation Plan, Appendix 3.A.1]*

- Use integrated design principles
- Commissioning
- Optimize energy performance
- Perform energy audits
- Protect and conserve water
- Enhance indoor air quality
- Use recycled and biobased products

Appendix 3.A.1 of the Sustainable Building Implementation Plan is a checklist that identifies dozens of sustainable practices related to the operation and maintenance of BLM-owned and leased facilities.

c. Greenhouse gas management must be implemented.

Federal agencies must establish a fiscal year 2020 target for their greenhouse gas (GHG) reduction percentage relative to a fiscal year 2008 baseline and must establish a comprehensive inventory of GHGs for fiscal year 2010. Since GHG emissions are intimately tied to building energy use efficiency, it is essential that BLM owned and leased facilities be efficiently operated and maintained.

APPENDIX B - GQBE PROJECT WORKSHEET

This worksheet allows for tracking and documenting a project through all phases of development, from land use planning reviews through to operations and maintenance. Its utilization **ensures that necessary information has been considered during project planning and design**, and management, as well as that details and contacts needed for facility operation and maintenance are readily accessible. Refer to page 196 for a completed sample worksheet.

PROJECT INFORMATION

Project Name	Project Location
Project Lead	**Project Initiation Date**
Project Description/ Narrative	

1 LAND USE PLANNING

Name of Management Plan (MP)	Date MP Approved
List MP decisions relevant to proposed project	
List other planning documents relevant to project (e.g., County General Plans, Corridor Management Plans, etc.) and direction they provide.	
What are the primary land uses in the vicinity of the proposed project?	
What is preliminary cost estimate for the proposed project?	

Identify potential funding sources.

2 ACTIVITY LEVEL PLANNING

Name of Activity Level Plan	Date Plan Approved
List Activity Level Plan decisions relevant to proposed project.	
List Management Constraints (e.g., VRM Class, Special Designations, etc.) of project area.	

3 PROJECT PLANNING

Project Lead/Project Manager	Date Project Planning Initiated
Project Planning Team Members	NEPA Lead
How will public scoping be provided?	
PREPARE SITE ANALYSIS. Describe the project area's NATURAL ENVIRONMENT.	
Elevation	
Fire Danger	
Geology	
Paleontology	
Prevailing Winds	
Soils	
Temperature/Precipitation	

Topography
Vegetation (including special status species and invasive species concerns)
Water Resources/Hydrology (including wetlands, riparian, floodplains, water quality, etc.)
Wildlife (including birds and fish)
Other
Describe the LANDSCAPE CHARACTER (form, line, color, texture).
Form
Line
Color
Texture
Describe the project area's BUILT ENVIRONMENT.
Access (Vehicular and Pedestrian)
Existing Structures
Utility Connections
Heritage Resources (archaeology, historic sites, etc.)
Other
Describe the ARCHITECTURAL CHARACTER.
Prepare USER ANALYSIS. Describe the SOCIOECONOMICS.
Use and Users

Permitted Activities (Recreation, Grazing, etc.)

Economic Profile

Other

Describe the DESIGN PROGRAM.

What is the PRELIMINARY BUDGET?

What are the GREEN BUILDING goals and requirements of the project?

What are the proposed PROJECT SCHEDULE milestones?

Who will prepare the Project Data Sheet and submit it for funding?

4 CONCEPTUAL DESIGN

Design Lead	Date Conceptual Design Initiated

Project Design Team Members

Detail the FINAL DESIGN PROGRAM for the FINAL CONCEPTUAL DESIGN.

What is the COST from the Class C Cost Estimate?

Is the project registered for any GREEN PROGRAMS? If so, which one(s)?

If needed, has NEPA been finalized and provided to Design Lead? If so, when and by whom?

How will the project be constructed?

Conceptual Design Approved by	Date FINAL CONCEPTUAL DESIGN Approved

5 DESIGN DEVELOPMENT

Design Lead	Date DESIGN DEVELOPMENT PLAN Initiated

Note when DESIGN REVIEWS are conducted.

Were GQBE PRINCIPLES and other design parameters incorporated into design?

If needed, has VALUE ENGINEERING been completed?

If project is to be constructed via contract, what type and bid method?

What is the COST from the Class B Cost Estimate?

List any LOCAL PLANNING / ZONING / PERMITTING COORDINATION needed.

DESIGN DEVELOPMENT PLAN Approved by	Date DESIGN DEVELOPMENT PLAN Approved

6 CONSTRUCTION DOCUMENTS (CDs)

CDs Prepared by	Date CDs Completed

What is the COST from the FINAL Cost Estimate?

Are GREEN PROGRAM submittals needed? If so, which ones and when submitted?

CDs Approved by	Date CDs Approved

7 PROCUREMENT / CONSTRUCTION

What are the FUNDING CODES?	
CONTRACTING OFFICER (CO)	Date PURCHASE REQUEST (PR) submitted
CONTRACTING OFFICER REPRESENTATIVE (COR)	PROJECT INSPECTOR (PI)
Bid Dates:	Date for Pre-Bid Meeting
Construction Contract Awarded to?	
What is the final BID AMOUNT with CONTINGENCIES?	
Date for Pre-Work Meeting?	Contract schedule dates?
Date facility COMPLETED	
Walk-through/Punch list items	
What were the results of FINAL COMMISSIONING/TESTING?	
Were AS-BUILT DRAWINGS and Operations and Maintenance Manuals provided up completion? To Whom?	

8 POST-CONSTRUCTION / MAINTENANCE

Date facility ACCEPTED by Government	Facility accepted and approved by

Date FACILITY open for use	Date of CELEBRATION EVENT
Provide a brief PERFORMANCE REVIEW of project construction.	
List SPECIAL MAINTENANCE REQUIREMENTS for the life of project.	
List the WARRANTIES and their expiration dates associated with project.	
Was project submitted for USGBC LEED or other green building rating programs? If so, what level did it achieve?	
Was project entered into Facilities Asset Management System (FAMS)? By whom?	
What was the final construction PROJECT COST (Design, Construction, and Project Management)?.	

APPENDIX B - GQBE PROJECT WORKSHEET **(SAMPLE)**

PROJECT INFORMATION

Project Name	Project Location
Greendale Contact Station	270 N Main
Project Lead	Project Initiation Date
Susan Jones	February 2004

Project Description/ Narrative

Develop a non-staffed contact station to provide traveler comfort facilities and visitor information about the Big Sage National Monument (BSNM) and surrounding areas in Greendale, Utah. Project to provide places to picnic, information/interpretative opportunities, and restrooms. Project site is located along HWY 98 in the Town of Greendale.

1 LAND USE PLANNING

Name of Management Plan (MP)	Date MP Approved
Big Sage National Monument (BSNM) Management Plan	February 2000

List MP decisions relevant to proposed project

Decision FACILITIES-1 which states:
In an effort to protect Monument resources and provide economic opportunities in the local communities, major facilities and the services associated with them will be located in the communities outside the Monument. These include … visitor contact stations in Stoneville, Greendale, and Floodwater.

List other planning documents relevant to project (e.g., County General Plans, Corridor Management Plans, etc.) and direction they provide.

The *Lane County, Utah General Plan*, adopted June 1998, calls for placing a visitor contact station in Greendale (page 58).

What are the primary land uses in the vicinity of the proposed project?

Residential, commercial, and agricultural. The project site is located on property in the heart of the community where an apple orchard once was. Portions of the orchard still exist to the south and a field used to graze livestock is to the west. Residences and small businesses are located in close proximity to the property. HWY 98, a primary State Highway, runs along the eastern side of the property.

What is preliminary cost estimate for the proposed project?

$250K

Identify potential funding sources.

- BLM Capital Improvement funds
- National Scenic Byway grants
- National/Utah Heritage Area grants

2 ACTIVITY LEVEL PLANNING

Name of Activity Level Plan	Date Plan Approved
Scenic HWY 98 Corridor Management Plan	April 2002

List Activity Level Plan decisions relevant to proposed project.

Locate a visitor contact station in Greendale, Utah, along HWY 98 that provides restrooms, interpretation about local history, orientation and visitor information about BSNM and other area attractions, and spaces for both the community to gather as well as visitors to picnic.

List Management Constraints e.g., VRM Class, Special Designations, etc.) of project area.

This segment of HWY 98 is designated as the Sandstone State Scenic Byway, and it is included in the nationally designated Utah Mormon Pioneer Heritage Area.

3 PROJECT PLANNING

Project Lead/Project Manager	Date Project Planning Initiated
Susan Jones, Landscape Architect	July 2003
Project Planning Team Members	**NEPA Lead**
Nancy Grassley – DO Engineer Jeff Black – Outdoor Recreation Planner Steve Diller – Interpretive Specialist	Jeff Black – Outdoor Recreation Planner

How will public scoping be provided?

A public design workshop, letters to interested publics, and city council meetings.

PREPARE SITE ANALYSIS.
Describe the project area's NATURAL ENVIRONMENT.

Elevation- ~5800'

Fire Danger - Danger is low, site has access to City Fire Protection (hydrants).

Geology - site is located in an old farm field…few to no geologic concerns.

Paleontology - site is located on highly disturbed soils, thus potential for paleontology is insignificant.

Prevailing Winds - From the north

Soils - Heavy clay

Temperature/Precipitation - Average high temps-low 90s. Average low temps – high teens. Most of the precipitation comes in the winter as snow.

Topography - Site slopes from east to west at about 5% grade.

Vegetation (including special status species and invasive species concerns)

Water Resources/Hydrology (including wetlands, riparian, floodplains, water quality, etc.) - Site can connect to City Culinary Water System. Old irrigation ditch runs along edge of property between property line and highway. Virgin River is located several hundred yards to the west of property. Sanitary sewer connection is available.

Wildlife (including birds and fish) - Nothing of concern to note.

Other

Describe the LANDSCAPE CHARACTER (form, line, color, texture).

This project is located adjacent to an apple orchard on a gently sloping site along HWY 98 in the center of a small Southern Utah community. The Sandy River corridor runs through this narrow valley and is to the east of the project site. The community is enclosed by low golden gray cliffs to the west and rounded gray shale hills to the east. The valley floor is filled with residential development, farm fields, and orchards. Predominant vegetation includes shade trees and grasses (lawns and fields) in the developed areas, and pinyon/juniper and sagebrush stands in the periphery where development has not occurred. The color palette of the area is primarily a range of greens (based on seasonal changes) and tans/grays associated with soils and geology of the Straight Cliffs Formation.

Form - Predominant forms are a valley floor surrounded by rounded hills to the west and flat-topped plateaus to the east with isolated rocky outcrops.

Line – Predominant lines in this landscape are rounded horizontal and slightly diagonal. Built structures and trees planted for shade or fruit add elements of verticality.

Color – Primary colors present include a range of dark to medium greens associated with native vegetation (pinyon/juniper) and cultivated vegetation (agriculture fields of grass/alfalfa, shade and fruit trees) and browns, tans, and grays associated with landform colors of the hillsides, cliffs, and soil.

Texture – Overall, the texture of this landscape is moderate, based on the landform and vegetation variety as well as the many structures.

Describe the project area's BUILT ENVIRONMENT.

Access (Vehicular and Pedestrian) - HWY 98 runs along eastern edge of property. Parking to be provided within site as well as within highway ROW. City sidewalks are located on the opposite side of the street.

Existing Structures - Irrigation ditch and post/wire fence.

Utility Connections - Utility connections are available as follows:
- Electrical – KG Power
- Telephone – Middle South Communications
- Sewer – Narrow Valley Sewer District
- Water – Greendale City

Heritage Resources (archaeology, historic sites, etc.) - None found when surveyed but site is located adjacent to an apple orchard that was planted more than 50 years ago.

Other

Describe the ARCHITECTURAL CHARACTER.

A variety of residential housing styles are present in Greendale, though none provides a style to emulate. A historic rock church in nearby Mt. Carmel provides an interesting architectural style to note. See attached image.

Prepare USER ANALYSIS.
Describe the SOCIOECONOMICS.

Use and Users – Site to be utilized by highway travelers as well as local residents. Local residents will likely use the site for longer periods of time (community/scout picnics, etc.), as opposed to the highway travelers who will stop to use the restrooms and have a quick picnic.

Permitted Activities (Recreation, Grazing, etc.) - N/A

Population - ~350 ppl. In Greendale, 100Ks of travelers on highway annually.

Economics – Local area: Median household income - ~$50K/year. Per capita income - ~$24K/year (2008 data). Construction, service, and agriculture are primary industries.

Other – Travelers from across U.S. and internationally utilize this stretch of highway, primarily when traveling the "Full Circle of National Parks." It connects several national parks and monuments in the Four Corners region. It is also a primary travel corridor for heavy truck traffic between SLC and Phoenix.

Describe the DESIGN PROGRAM.

- Shade shelter with picnic tables
- Interpretive exhibits appropriate for location
- Information kiosk
- Public restrooms
- Lawn area
- Parking
- Landscaping

What is the PRELIMINARY BUDGET?

$250K - BLM Capital Improvements funds.

What are the GREEN BUILDING goals and requirements of the project?

- Utilize native plants to conserve water.
- Utilize water-efficient restroom fixtures.
- Minimize lighting to protect night skies.

What are the proposed PROJECT SCHEDULE milestones?

- Complete site specific NEPA – Fall 2004
- Complete Final Design – Fall 2005
- Procurement – Winter 2005
- Construction – Summer 2006
- Open for public use – Fall 2006

Who will prepare the Project Data Sheet and submit it for funding?

George Richards, DO Engineer

4 CONCEPTUAL DESIGN

Design Lead	Date Conceptual Design Initiated
Ben Smith, Architect, National Operations Center (NOC)	November 2004

Project Design Team Members

Susan Jones, Landscape Architect
George Richards, DO Engineer
Jeff Black – Outdoor Recreation Planner
Nancy Grassley – Interpretive Specialist

Detail the PROJECT PROGRAM for the FINAL CONCEPTUAL DESIGN.

- Large shade shelter with picnic tables
- Historic grinding wheel and associated interpretive panel
- BSNM-provided 4-panel interpretive kiosk
- Double-stall flush toilet building
- Small lawn area
- Display gardens and fruit trees around perimeter
- Interior site parking
- Dutch oven pit
- Picnic sites outside shelter

What is the COST from the Class C Cost Estimate?

$310K

Is the project registered for any GREEN PROGRAMS? If so, which one(s)?

N/A
If needed, has NEPA been finalized and provided to Design Lead? If so, when and by whom?
Yes, January 2005, by Jeff Black
How will the project be constructed?
By contractor

Conceptual Design Approved by	Date FINAL CONCEPTUAL DESIGN Approved
John Brown, BSNM Manager	March 2005

5 DESIGN DEVELOPMENT

Design Lead	Date DESIGN DEVELOPMENT PLAN Initiated
Ben Smith, NOC	April 2005

Note when DESIGN REVIEWS are conducted.
• 30% Review - July 2005 • 65% Review - October 2005 • 95% Review - May 2006 • 100% Review - September 2006
Were GQBE PRINCIPLES and other design parameters incorporated into design?
Yes
If needed, has VALUE ENGINEERING been completed?
N/A
If project is to be constructed via contract, what type and bid method?
8A
What is the COST from the Class B Cost Estimate?
$240K
List any LOCAL PLANNING / ZONING / PERMITTING COORDINATION needed.
• Greendale City Council review • Sewer connection • Water connection • Electricity connection • Department of Transportation – encroachment permit

DESIGN DEVELOPMENT PLAN Approved by	Date DESIGN DEVELOPMENT PLAN Approved
John Brown, BSNM Manager	October 2006

6 CONSTRUCTION DOCUMENTS (CDs)

CDs Prepared by	Date CDs Completed
Ben Smith, NOC	March 2007

What is the COST from the FINAL Cost Estimate?
$235K
Are GREEN PROGRAM submittals needed? If so, which ones and when submitted?
N/A

CDs Approved by	Date CDs Approved
Susan Jones, Landscape Architect	April 2007

7 PROCUREMENT / CONSTRUCTION

What are the FUNDING CODES?
LLUT090000.IB0000.21100000.JC230000

CONTRACTING OFFICER (CO)	Date PURCHASE REQUEST (PR) submitted
Mary Adams, NOC	July 2008
CONTRACTING OFFICER REPRESENTATIVE (COR)	PROJECT INSPECTOR (PI)
George Richards, DO Engineer	Susan Jones, Landscape Architect
Bid Dates:	Date for Pre-Bid Meeting
September 2008	October 2008

Construction Contract Awarded to
Delmar Construction LLC
What is the final BID AMOUNT with CONTINGENCIES?
$215K

Date for Pre-Work Meeting?	Contract schedule dates?
January 2009	January 2009 to July 2009

Date facility COMPLETED
July 2009
Walk-through/Punch list items
• Re-grade edges of parking area • Install entrance and exit signs • Replace two trees that were damaged
What were the results of FINAL COMMISSIONING/TESTING?
All systems were functioning per specifications.
Were AS-BUILT DRAWINGS and Operations and Maintenance Manuals provided upon completion? To Whom?
Yes, as-builts and O&M manuals were provided to George Richards and Susan Jones.

8 POST-CONSTRUCTION / MAINTENANCE

Date facility ACCEPTED by Government	Facility accepted and approved by
August 2009	George Richards, DO Engineer
Date FACILITY open for use	Date of CELEBRATION EVENT
August 2009	September 2009

Provide a brief PERFORMANCE REVIEW of project construction.
Work completed on schedule and with quality workmanship.
List SPECIAL MAINTENANCE REQUIREMENTS for the life of project.
None
List the WARRANTIES and their expiration dates associated with project.
See attached.
Was project submitted for USGBC LEED or other green building rating programs? If so, what level did it achieve?
No
Was project entered into Facilities Asset Management System (FAMS)? By whom?
Yes, by George Richards. August 2009.
What was the final construction PROJECT COST (Design, Construction, and Project Management)?.
$260K

APPENDIX C - RECREATION SETTING CHARACTERISTICS MATRIX

PHYSICAL - Qualities of the Landscape

	Primitive Classification	*Back Country Classification*	*Middle Country Classification*	*Front Country Classification*	*Rural Classification*	*Urban Classification*
Remoteness (approx. distance from routes)	More than ½ mile from either mechanized or motorized routes.	Within ½ mile of mechanized routes.	Within ½ mile of four-wheel drive vehicle, ATV and motorcycles routes.	Within ½ mile of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes).	Within ½ mile of paved/primary roads and highways.	Within ½ mile of streets and roads within municipalities and along highways.
Naturalness (landscape texture form, line, color)	Undisturbed natural landscape.	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (e.g. stock ponds, trails).	Character of the natural landscape retained. A few modifications contrast with character of the landscape (e.g. fences, primitive roads).	Character of the natural landscape partially modified but none overpower natural landscape (e.g. roads, structures, utilities).	Character of the natural landscape considerably modified (agriculture, residential or industrial).	Urbanized developments dominate landscape.
Visitor Facilities	No structures. Foot/horse and water trails only.	Developed trails made mostly of native materials such as log bridges. Structures are rare and isolated.	Maintained and marked trails, simple trailhead developments and basic toilets.	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundry, restaurants, and groceries.

SOCIAL - Qualities Associated with Use

	Primitive Classification	*Back Country Classification*	*Middle Country Classification*	*Front Country Classification*	*Rural Classification*	*Urban Classification*
Contacts (avg. with any other group)	Fewer than 3 encounters/day at camp sites and fewer than 6 encounters/day on travel routes.	3-6 encounters/day off travel routes (e.g.,campsites) and 7-15 encounters/day on travel routes.	7-14 encounters/day off travel routes (e.g., staging areas) and 15-29 encounters/ day on travel routes.	15-29 encounters/day off travel routes (e.g., campgrounds) and 30 or more encounters/day on travel routes..	People seem to be generally everywhere.	Busy place with other people constantly in view.
Group Size (average - other than you own)	Fewer than or equal to 3 people per group.	4-6 people per group.	7-12 people per group	13-25 people per group.	26-50 people per group.	Greater than 50 people per group.
Evidence of Use	No alteration of the natural terrain. Footprints only observed. Sounds of people rare.	Areas of alteration uncommon. Little surface vegetation wear observed. Sounds of people infrequent.	Small areas of alteration. Surface vegetation showing wear with some bare soils. Sounds of people occasionally heard.	Small areas of alteration prevalent. Surface vegetation gone with compacted soils observed. Sounds of people regularly heard.	A few large areas of alteration. Surface vegetation absent with hardened soils. Sounds of people frequently heard.	Large areas of alteration prevalent. Some erosion. Constantly hear people.

OPERATIONAL - Conditions Created by Management and Controls over Recreation Use

	Primitive Classification	*Back Country Classification*	*Middle Country Classification*	*Front Country Classification*	*Rural Classification*	*Urban Classification*
Access (types of travel allowed)	Foot, horse, and non-motorized float boat travel.	Mountain bikes and perhaps other mechanized use, but all is non-motorized.	Four-wheel drives, all-terrain vehicles, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use.	Two-wheel drive vehicles predominant, but also four wheel drives and non-motorized, mechanized use.	Ordinary highway auto and truck traffic is characteristic.	Wide variety of street vehicles and highway traffic is ever-present.
Visitor Services (and information)	No maps or brochures available on-site. Staff rarely present to provide on-site assistance.	Basic maps, staff infrequently present (e.g. seasonally, high use periods) to provide on-site assistance	Area brochures and maps, staff occasionally (e.g. most weekends) present to provide on-site assistance.	Information materials describe recreation areas & activities, staff periodically present (e.g. weekdays & weekends).	Information described to the left, plus experience and benefit descriptions, staff regularly present (e.g. almost daily).	Information described to the left, plus regularly scheduled on-site outdoor demonstrations and clinics.
Management Controls	No on-site posting/signing of visitor regulations, interpretive information or ethics. Few use restrictions.	Basic user regulations at key access points. Minimum use restrictions	Some regulatory and ethics signing. Moderate use restrictions. (e.g. camping, human waste).	Rules, regulations and ethics clearly posted. Use restrictions, limitations and/or closures.	Regulations strict and ethics prominent. Use may be limited by permit, reservation, etc.	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage.

APPENDIX D - PROJECT LEAD, REVIEW, AND APPROVAL MATRIX

				Document "Sign Off"			
Cumulative Project Costs	Project Lead*	Value Analysis	Certified Green**	Technical Review	Recommended by	Approved by	Task Complexity
< $250K	Qualified Staff	Recommended	Recommended	Field/District Eng.	Project Lead	Field/District/ Program Manager	Simple
$250K-$500K	Senior Staff	Recommended	Recommended	Field/District Eng.	State Engineer	Field/District/ Program Manager	Moderate
$500K-$1M	Engineer/Architect	Recommended	Recommended	State/NOC/A&E Design Professional(s)	Design Office Manager	Field/District/ Program Manager	Moderate
$1M-$2M	Licensed Eng/Arch	Required	Recommended	State/NOC/A&E Design Professional(s)	Design Office Manager	Program Manager/ State Director	Complex
>$2M	Certified Project Manager	Required	Required	State/NOC/A&E Design Professional(s)	Design Office Manager	Program Manager/ State Director	Complex

Note:
* "Architect" includes Landscape Architects. Certified Project Manager includes FAC and PMP credentials

** "Green" as per the Sustainable Buildings implementation Plan:...projecys which have 5,000 sq ft or more, will obtain a third party certification to meet the requirements of a multi-attribute green building standard or rating system developed by an American National Standards Institute (ANSI) accredited organization. (LEED, Green Globe, etc.).

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APPENDIX F - COMMON ACRONYMS

ACEC	Area of Critical Environmental Concern
A/E	Architectural Engineering
AMP	Asset Management Plan
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
CCC	Civilian Conservation Corps
CD	Construction Document
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
CMA	Cooperative Management Agreement
EO	Executive Order
FAC-P/PM	Federal Acquisition Certification for Program and Project Managers
FAMS	Facilities Asset Management System
FAR	Federal Acquisition Regulation
FLMPA	Federal Land Policy and Management Act
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GLO	General Land Office
GPS	Geographic Positioning System
IMBA	International Mountain Bicycling Association
KOP	Key Observation Point
LAC	Limits of Acceptable Change
LEED	Leadership in Energy and Environmental Design
LNT	Leave No Trace
MP	Management Plan
MTB	Mountain Bike
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NOC	National Operations Center
NPS	National Park Service
OHV	Off-Highway Vehicle
O&M	Operations and Maintenance
PDS	Project Data Sheet
PI	Project Inspector
PL	Project Lead
PM	Project Manager
RFP	Request for Proposals
R&PP	Recreation and Public Purposes Act
RAMP	Recreation Area Management Plan
RMP	Resource Management Plan
ROW	Right-of-way
ROS	Recreation Opportunity Spectrum
SRP	Special Recreation Permit
TMO	Trail Management Objective
TTF	Technical Trail Feature
USFS	United States Forest Service
USGBC	U.S. Green Building Council
USGS	United States Geologic Survey
VRM	Visual Resource Management

APPENDIX G - ACKNOWLEDGMENTS

We would like to recognize that only through the past efforts, drive, and commitment of many former BLM staff over the years, the seeds of momentum for this effort were cultivated. In November 2005, a group of BLM engineers, outdoor recreation planners, architects, and landscape architects met at the National Training Center in Phoenix to discuss how best to embark on an initiative aimed at addressing the quality of BLM's built environment. We were joined at that meeting by USFS colleagues who had been instrumental in producing the US Forest Service Built Environment Image Guide and who graciously shared lessons learned regarding both to its preparation as well as its implementation in the field. By week's end, after much conversation and engaged dialogue, the resounding conclusion was that an comprehensive reference was indeed needed to guide and facilitate the development of facilities that are sustainable, reflect a positive image for the agency, and address specifically, the planning and design process for BLM's built environment. All agreed that the outcomes of such an effort would help bridge the gap between existing policies and requirements, while fostering improved communication between those involved in the facility development process..

SPONSORS

It was recognized early on that the support and contributions of the two programs most directly involved in BLM facility development and management (Engineering and Recreation) were critical to the success of this effort. Without the continued support of these individuals and the programs they oversee, this document could not have been produced.

Coppa, Luis	Chief, Engineering and Asset Management	WO	BLM
Dean, Nancy	Chief, Protection and Response Group	WO	BLM
Grant, Corey	Division Chief of Business Resources	WO	BLM
Hart, Bob	Chief - Architecture and Engineering Branch	NOC	BLM
Jarvis, Jeff	Division Chief of the National Landscape Conservation System	WO	BLM
Ratcliffe, Bob	Division Chief, Recreation and Visitor Services	WO	BLM
Roberson, Edwin	Assistant Director of Renewable Resources and Planning	WO	BLM
Rountree, Carl	Assistant Director of National Landscape Conservation System and Community Partnerships	WO	BLM
Tenney, Andy	Branch Chief, Recreation and Visitor Services	WO	BLM
Velasco, Janine	Assistant Director of Business and Fiscal Resources	WO	BLM

CORE TEAM

From the onset, this Core Team of BLM staff, which represent program areas involved in facility development as well as a range of planning and design professions, led, organized, facilitated, and secured funding to support the production of BLM Guidelines for a Quality Built Environment (GQBE). The commitment and dedication of this small group were instrumental to the successful creation of the Guidelines and their work will lay the foundation for a legacy of quality BLM facilities.

Angus, Allysia	Project Lead, Landscape Architect/Land Use Planner	UT	BLM
Busch, Tom	Chief, Planning, Design, and Construction Section	NOC	BLM
Cownover, Brad	Landscape Architect	NOC	BLM
Duncan, Trent	Mechanical Engineer	UT	BLM
Hart, Bob	Chief - Architecture and Engineering Branch	NOC	BLM
McCarty, John	Chief Landscape Architect	WO	BLM
Montoya, Victor	Engineering Program Manager	WO	BLM

EXTENDED TEAM

As the GQBE was developed, many individuals throughout BLM, as well as from other agencies and the private sector, shared their time, energy, ideas, suggestions, and feedback. The dedication of these individuals helped ensure that this document is relevant, easy-to-use, and attractive. More so, the Extended Team's vast knowledge and experience were critical to developing a reference that provides the appropriate level of guidance to assist those planning, designing, constructing, leasing, and maintaining BLM facilities. The net benefit of this will influence decisions that result in BLM facilities that are sustainable, attractive, and cost-effective. The Extended Team members represent a range of professions, locations, and expertise. Each team member provided valuable and insightful comments and suggestions for inclusion in the GQBE based upon their unique backgrounds and levels of expertise. Their insights were shared during face-to-face workshops held in New Mexico, Nevada, Oregon, or Colorado, as well as via document reviews at the various review submittal phases.

Applegate, Don	State Recreation Lead	AZ	BLM
Ashor, Joe	Manager	OR	BLM
Bowen, Britt	District Engineer	AZ	BLM
Brown, Troy	Accessibility Lead	WO	BLM
Burns, Jennifer	Landscape Architect	CO	USFS
Chavez, Herbert	Engineer	NM	BLM
Christenson, Jeff	Outdoor Recreation Planner	ID	BLM
Ciesel, Frank	Architect	NOC	BLM
Clapp, Elvin	Training Coordinator	NTC	BLM
Davis, Kent	Force Account	AK	BLM
Davis, Mike	Engineer	NV	BLM
Ellis, Kay	Accessibility Lead	WO	BLM
Fleming, Pat	Engineer	NOC	BLM
Fortenberry, Curt	State Engineer	AK	BLM
Frieberg, David	Outdoor Recreation Planner	ID	BLM
Gallegos, Jesus (JJ)	Engineer	NM	BLM
Gawin, Chester	Engineer	AZ	BLM
Glenn, Evan	Outdoor Recreation Planner	UT	BLM
Hall, Jon	District Engineer	OR	BLM
Heslin, Terry	State Recreation Lead	ID	BLM
Honn, Jim	State Engineer	WY	BLM
Hurelle, Gary	Landscape Architect	NOC	BLM
Jarrett, Zach	Outdoor Recreation Planner	OR	BLM
Jolley, Robert	Environmental Engineer	WO	BLM
Jordan, Steve	State Engineer	NM	BLM
Josupait, Victoria	Outdoor Recreation Planner	NOC	BLM
Keleher, Barbara	State Recreation Lead	NV	BLM
Kiel, Dave	Outdoor Recreation Planner	UT	BLM
Kincaid, Terry	Outdoor Recreation Planner	ID	BLM
Kurtz, John	Outdoor Recreation Planner	ID	BLM
Lahti, Tom	State Landscape Architect	WY	BLM
Lee, Raymond	Manager	CA	BLM
Livingston, Terry	Visitor Information Specialist	WY	BLM
Long, Gary	State Recreation Lead	WY	BLM

Malhotra, Mala	NLCS Communications/Outreach Specialist	WO	BLM
Matthews, Cody	Engineer	ID	BLM
McAlear, Chris	Manager	NV	BLM
McCusker, Jeff	State Recreation Lead	ES	BLM
McLean, Kim	Outdoor Recreation Planner	OR	BLM
Mensing, Dave	State Recreation Lead	OR	BLM
Morin, Ken	Engineer	NOC	BLM
Olsen, Crystal	Engineer	NV	BLM
Pardy, Tanya	Engineer	ID	BLM
Peterson, Paul	State Engineer	NV	BLM
Pidot, Lauren	NLCS Communications/Outreach Specialist	WO	BLM
Pritchett, Mark	Landscape Architect	NOC	BLM
Randall, Danny	Outdoor Recreation Planner	NM	BLM
Reed, Donald	Engineer	NV	BLM
Rockwell, Norm	Engineer	NV	BLM
Satterlee, Kent	Engineer	MT	BLM
Schiepan, Kay	State Recreation Lead	ID	BLM
Scott, Lynne	Landscape Architect	UT	BLM
Shelton, Dave	Architect	OR	BLM
Sippel, James	State Recreation Lead	NM	BLM
Svoboda, Charles	Engineer	NOC	BLM
Sweeten, Rob	Landscape Architect	UT	BLM
Taylor, Robert	Manager	NV	BLM
Torres, Tami	Outdoor Recreation Planner	NM	BLM
Triplett, Nell	NLCS Communications/Outreach Specialist	WO	BLM
Zakrie, Jessica	Outdoor Recreation Planner	NM	BLM

ADVISORS

As is often the case, it is necessary to turn to those who have come before when tackling an effort of this magnitude. From the very beginning, even when discussions about whether preparing guidelines for BLM facility development was a worthwhile effort, we turned to our U.S. Forest Service colleagues for advice. They had prepared the USFS Built Environment Image Guide several years before and it was the catalyst for BLM to consider attempting a similar project. We continually looked to them as the GQBE was drafted, and they graciously shared their experiences, ideas, suggestions, and lessons learned. We also looked to private sector professionals and retired BLM staff who had worked on a variety of successful BLM projects in the past. The experience and expertise shared by these individuals is reflected in the design and content of the Guidelines.

Campbell, Dave	Senior Civil Engineer	WO	BLM
Gobat, Steve	Outdoor Recreation Planner	Retired	BLM
Hamann, Tom	Architect	OTAK	Private
Price, Del	Landscape Architect	Retired	BLM
Sporl, Chrisopher	Landscape Architect	CO	USFS
Villalvazo, Ramiro	Chief Landscape Architect	WO	USFS

CONTRACTORS

The work associated with developing the GQBE could not have been completed solely by an internal BLM team. Early in the process, BLM contracted with Belt Collins West in Boulder, Colorado, to assist with the organization and preparation of the GQBE. Throughout the process of developing the Guidelines, Belt Collins facilitated workshops, developed content, synthesized a vast array of information about BLM policy and programs, organized thousands of images, and produced beautiful graphics to share concepts that couldn't be explained with imagery or text alone. Belt Collins' professionalism, talent, and commitment to this project are reflected on each of the pages of this document.

Gibney, Tom	Landscape Architect	Belt Collins	Private
Griffin, Jay	Landscape Architect	Belt Collins	Private
Hoogerwerf, Katy	Landscape Architect	Belt Collins	Private
Mather, Mimi	Landscape Architect	Belt Collins	Private
Moss, Ann	Landscape Architect	Belt Collins	Private
Scott, Ian	Landscape Architect, Illustrator	Belt Collins	Private
Shupe, Bonie	Graphic Designer	Belt Collins	Private