Spring Mountains National Recreation Area

Built Environment Image Guide

U. S. Department of Agriculture
Forest Service
Humboldt-Toiyabe National Forest
Spring Mountains National Recreation Area
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Final Document
February 2007
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Building from the Earth

1. Introduction

Purpose and Background

This design guideline provides direction for designing facilities within the Spring Mountains National Recreation Area and its diverse environments.

Recommendations focus on the appearance and function of facilities. Facilities should have a uniform character and use of materials that both reflect and fit into their setting. Final design must respond to the specific environment and user needs.

The Spring Mountains are a unique collection of landscape types in the American Southwest. The range is an isolated “sky island,” meaning that it is separated from other ecologically similar areas by large tracts of desert. As a result of this physical disconnection, the area’s plants and animals evolved in isolation and the range is home to many plant and animal species found nowhere else. The Spring Mountains, from their lowest elevations to their highest, should be considered part of the Mojave Desert for design purposes. The Mojave Desert’s built environment should reflect its unique natural and cultural characteristics. Facilities should connect visitors with the surrounding landscape.

The landscape is generally made up of three ecological zones: High Desert, Transition, and Forested. The majority of planned facilities will be located in the Transition zone. Therefore this zone was used as the foundation for the Design Guidelines. Specifics pertaining to the other two zones are described in section 4.2 of Chapter 4. Section 4.3, which covers guidelines for buildings, lists differences for all three zones.

The Forest Service’s Recreation Opportunity Spectrum (ROS) is integral to these guidelines. The primary goal is to help visitors make a smooth transition from the nearby urban areas to the Spring Mountains National Recreation Area’s natural environment.

The Spring Mountains are a “Sky Island” in the Mojave Desert.

Relationship to Built Environment Image Guide

This document supplements the Built Environment Image Guide (BEIG), which provides guidelines for the Forest Service nationwide, including the Mojave Desert. These design guidelines allow designers to respond to the National Recreation Area’s unique characteristics.

Main concepts within the BEIG should be used in tandem with this document.

Audience

This document is meant for those involved in planning, designing, constructing or rehabilitating facilities within the Spring Mountains National Recreation Area. It will help designers and reviewers adhere to common goals, standards and measures.

The document also provides guidance for operations and maintenance employees who manage, repair or replace existing facilities. Guidelines are provided to help this group choose products and materials compatible to the Spring Mountains National Recreation Area’s design environment.
Concessions

Concession facilities, although many times not constructed by the Forest Service, should fit visually within the Spring Mountains National Recreation Area’s facility design framework. Therefore, design of concessions facilities should follow the principles contained within this document and the Built Environment Image Guide (BEIG). Design reviewers should also use both documents as benchmarks.

Related Facilities Outside the Spring Mountains National Recreation Area

Certain Spring Mountains National Recreation Area facilities may be built outside of the National Recreation Area’s borders. Although these facilities will be located in a different context, their design should still reflect the principles contained within this document and the BEIG. This will help visitors identify with the character of the National Recreation Area and the ethic of the Forest Service before setting foot in the National Recreation Area. However, Forest Service information facilities and buildings located within a highly designed setting, such as the Middle Kyle Canyon Complex, may need to be adapted to fit with their context.

Designers should creatively use the vision and principles in this document to guide decisions in such a situation.

Facilities outside the National Recreation Area may include visitor centers and offices. Smaller facilities outside the Spring Mountains National Recreation Area boundary might include scenic overlooks from which visitors could view and learn about the Spring Mountains National Recreation Area.

Document Format

Chapter One summarizes information regarding the Spring Mountains National Recreation Area and the use of these guidelines. Chapter Two presents the planning context in which this document was produced. Chapter Three presents the overall vision for Spring Mountains National Recreation Area facilities and the overall design principles that apply to all facilities.

Chapter Four provides the main guidance for planning and designing each of the Spring Mountains National Recreation Area facilities. It begins by describing how individual elements fit together and relate to the environment. It then proceeds to greater levels of detail by discussing landscape improvements, buildings, development character, and site improvements. Part of this section also provides site planning considerations for several types of areas, including the proposed developed visitor center and "village" along S.R. 157, picnic areas, campgrounds, major trailheads, overlooks and maintenance facilities.
Building from the Earth

2. Planning Context

Location

The 316,000 acre Spring Mountains National Recreation Area contains tracts of Mojave Desert and high mountain peaks. The National Recreation Area lies just 30 minutes northwest of Las Vegas and currently hosts approximately two million visitors each year.

Many of the National Recreation Area’s visitors are not familiar with the sensitivity and uniqueness of this landscape. Most are drawn to the National Recreation Area’s upper Kyle and Lee canyons in the summer. Temperatures are 20-30 degrees cooler than in Las Vegas. In winter, the snow attracts large numbers of visitors. The land surrounding State Routes 156, 157 and 158 contain the majority of the National Recreation Area’s recreation facilities and will likely receive a number of future facilities. The west side of the National Recreation Area—near Pahrump—may also receive facilities in the future.

Location and context map
Planning Context

Regional Character

The Mojave Desert has a different character than other areas in the Southwest, largely because of the extremely dry hot summer climate. These weather conditions made it less hospitable to early settlers. Until recently, the population consisted of a small number of homesteaders, ranchers, and miners.

Much of the area was not homesteaded and the Federal Government retains ownership of much of the land. As a result, the Mojave landscape remains largely undeveloped and open.

Las Vegas is an exception to this situation. The city started out as a railroad stop facility, but by the mid-1900’s had become a gaming destination. Facilities were not designed to reflect the surrounding environment. The Spring Mountains National Recreation Area presents an opportunity to provide a natural setting with the planning and design of facilities.

Goodsprings has many examples of early Mojave Desert architecture—such as the saloon building pictured above.

Contemporary Las Vegas’s entertainment architecture is not consistent with the surrounding landscape.
Kyle Canyon is representative of the alluvial deposits that lie in the lower reaches of the Spring Mountains.

Spring Mountains National Recreation Area Character

Landscape Ecology

Geology

The Spring Mountains’ peaks consist primarily of porous gray limestone and brown-tinted dolomite, with impressive cliffs and shallow caves. At their base are ancient alluvial deposits into which drainages have cut steep valleys and deep canyons. Unlike alluvial deposits in wetter climates, these have an irregular composition of boulders, cobbles, pebbles and sand deposited by mud flows.

Contained within this alluvium are “calcrete” formations—cement-like alluvial deposits hardened by calcium carbonate from higher-up limestone rocks. Calcrete is more resistant to erosion than surrounding sediments, resulting in landforms that stand alone because adjacent rock and other material has completely eroded away.

Most of the Spring Mountains’ creeks and washes flow infrequently, with most of their drainage below-surface. However, when this subsurface drainage hits an underground obstacle, the water comes to the surface and forms a spring. There are many such springs in the Spring Mountains.
Landscape Character

The Spring Mountains traverse three main landscape types in a very short distance: High Desert, Transition, and Forested.

A several thousand foot elevation change causes large temperature, precipitation and vegetation variations from the Mountains’ base to their alpine peaks. Vegetation creates washes of color varying from olive-green woodlands to gray-green shrublands. Geology adds browns of alluvial plains and canyons, and gray-browns of dramatic limestone and dolomite rock formations.

During the summer the area is hot and dry with an ever-present threat of forest fire. Because of the aridity, most days are sunny with clear skies.
**High Desert**

The High Desert zone is dominated by a diverse expanse of shrubs, Joshua trees, and cactus on desert uplands. It occurs on slopes, hillsides, and washes with alluvial soils at elevations of about 4,000 to 5,000 feet.

- Immense horizontal vistas
- Wide-open landscape
- Colors dominated by buff soil and accented by sparse vegetation
- Disturbances are slow to heal
- Water and shade are crucial
- Intense sunshine and heat

**Transition**

Located within the Mountains’ mid-range elevations—meaning 6,000 to 7,000 feet where precipitation is greater than eight inches—the Transition zone is characterized by pinyon-juniper woodlands. These woodlands have short (usually less than 20-feet tall) evergreen trees mixed with a variety of desert and upland shrubs. Being enclosed by vegetation is balanced by exposure to long vistas in this zone. The Transition Zone was chosen as the baseline for these design guidelines (see page 44).

- Vegetation provides some respite from the hot desert sun
- Horizontal landforms and flat benches alternate with steep valleys and canyons
- Colors more diverse than other zones—dominated by buff soil/rocks, and gray-greens to medium-greens from vegetation
- Long vistas are balanced by feelings of enclosure within pinyon/juniper woodlands
- Disturbances to soil and vegetation heal slowly
- Summer sun can be intense
Forested
Above 7,000 feet, temperatures are cooler, precipitation increases and high mountain slopes are covered by a forest of large ponderosa pine, white fir and bristlecone pine. Trees are often 50 feet or taller, and vegetation dominates the landscape. The understory can be open or shrubby. Disturbed areas, such as avalanche corridors, may be dominated by nearly pure stands of quaking aspen. Near timberline, trees decline in height to dwarfed, gnarled, prostrate individuals deformed by the wind.

General characteristics of this landscape are:
- Long vistas typically on mountain tops only; otherwise vegetation encloses the visitor
- Feeling of protection within trees
- Visual emphasis is vertical due to tall trees and large boulders.
- Colors are generally darker than other two zones
- Coolest zone
- Shelter from the sun less important
- Shelter from rain, snow and cold more important

The forested landscape offers fairly lush vegetation and cooler temperatures.
**ROS Categories**

The Recreation Opportunity Spectrum (ROS) is used by the U.S. Forest Service to help determine the scale, amount, and type of development at different sites. It is based on the premise that people expect certain levels of development related to the character of the setting and the type of recreation they prefer.

The Spring Mountains National Recreation Area contains the full range of ROS categories, which include Urban, Rural, Roaded Natural, Semi-Primitive Motorized, Semi-Primitive Non-Motorized and Primitive. Readers and users of this document should reference the most recent map of ROS objectives to determine the ROS class applicable to a given project.

Many of the National Recreation Area’s facilities will be located within Urban, Rural and Roaded Natural settings, with their design goal being to help visitors make a smooth mental transition from these areas to less developed settings. Hopefully this will foster respect in visitors for the area’s sensitive natural environments and signal the types of activities appropriate for these settings.

The Design Guidelines concentrate on the Urban, Rural and Roaded Natural settings because this is where the vast majority of developed facilities will occur. Urban and Rural will likely have the more elaborate facilities, while Roaded Natural will have very simple facilities.
Cultural Influences

Las Vegas Area
The main city in the Spring Mountains area, Las Vegas had humble beginnings. It was known mainly for its oasis-like springs, as a stop on the Spanish Trail to Los Angeles, and as an early 1900’s railroad stop.

However, with legalization of gambling in 1931, Federal dollars from building the Hoover Dam, and the coming of military and defense industries during World War II, Las Vegas became a significant community. The city’s best-known architecture—that of the Las Vegas Strip and downtown casinos—was designed to attract gamblers.

The Las Vegas Chamber of Commerce now promotes the city as “The Entertainment Capital of the World,” and many tourists consider it a sort of playland getaway. Indeed, visitors can spend time in large resorts that replicate—on a fantastic and brightly lit scale—aspects of mythical places, famous cities and exotic countries, among other themes.

The city has also been successful in attracting businesses, and retirees are now coming to Las Vegas in great numbers. As a result, it is one of the fastest-growing cities in the United States. The architecture of most of this growing city is much more subdued than that of the casinos.
History of Forest Service Architecture on the Spring Mountains NRA

Traces of 1930’s Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) achievements are visible in areas around Las Vegas. These include structures at the Forest Service’s Administration Area in Kyle Canyon, the Camp Lee Canyon, and remnants of campground features, roads, and trails throughout the area. These facilities were typically built for standardized administrative, recreational purposes using inexpensive materials and modest architectural design. They are not representative of the highly crafted structures featuring native stone and unhewn logs or the Spanish Colonial, Pueblo, and Territorial Revival style buildings typically associated with the CCC in the Southwest.

Walls, steps, and sign bases have been constructed of regionally harvested rubble rock. These fit perfectly within the Spring Mountains environment and are good examples of the colors and forms that are appropriate for this environment.

Other significant structures within the National Recreation Area were three bee-hive shaped charcoal kilns. These were built from block limestone in the 1870’s. The charcoal they produced supported ore smelting in Tecopa CA Limited. Other structural constructs include cabins made from juniper posts and rammed adobe, logs, stacked tree limbs, and dressed stone.

Structures at Kyle Ranger Station that were built by the CCC exhibit modest design.

Modern stonework with inappropriate color palette in culvert over Kyle Creek; Rustic quality of stonework is appealing.

Limestone charcoal kiln, no longer standing, was built of local block limestone.
Sacred Mountains

Southern Paiute consider the Spring Mountains to be sacred, as it is their place of creation—their “Holyland.” Respect for the natural resources that the creator has provided is paramount. Unique geological features including narrow canyons, caves, mountain peaks, and calcite monoliths in and along canyon washes figure in the traditional stories and songs that sustain Southern Paiute culture.

Spirits reside in all inanimate forms; to reduce harm these forms must be shown proper respect. Some geological features relay strong architectural characteristics such as the narrow slot canyon in Middle Kyle Canyon. Its steep walls and narrow passage enclose the space and frame the sky, heightening the perception of place.

Alterations to the landscape by past American Indians included temporary conical wood and brush structures for habitation, rock rings for sleeping circles and storage caches, agave roasting pits and rock art. Due to the abundance of the agave plant, which grows on limestone slopes in the National Recreation Area, roasting pits are common. These features result in circular areas of fire-cracked and whitened limestone, ranging in diameter from six to twenty feet.

Rock art occurs here and all over the world in the form of petroglyphs and pictographs. Petroglyphs are pecked or incised into rock surfaces, while pictographs are colored pigments that are painted onto rock. Some symbols are religious and some secular. There are many ideas of what the symbols represent, but their true messages may remain a mystery. Rock art is highly regarded and valued by American Indian and many non-Indian people.
Chapter 3

Vision and Principles
3. Vision and Principles

The following vision for the Spring Mountains National Recreation Area’s facilities is meant to guide designers and managers in creating a special visitor experience that responds sensitively to the area’s resources. The National Recreation Area’s facilities should attain all the qualities described within the vision.

RESPECTFUL AND RESPONSIBLE MINIMALISM

Like the Spring Mountains—which soar above and punctuate the Mojave Desert’s simplicity—facilities within the National Recreation Area both defer to and reveal their surroundings as they emerge organically from the landscape.

They create a welcoming refuge that provides relief from the elements and draws people into the landscape. Designed spaces offer open views that inspire visitors and evoke the area’s sacredness.
Overall Principles

The overall character and appearance of future Spring Mountains National Recreation Area facilities in any ecological zone should be based on the following principles.

1. Create **simple and timeless**—yet contemporary—places that provide a rich variety of experiences.

2. Make facilities **subordinate and complementary** to the landscape, oriented to the main resources and views.

3. Provide inviting and comfortable “refuges” that entice people to linger and experience the outdoors.

4. Build only what is **necessary**.

5. Design multi-use facilities with a **rich variety of spaces** that appear as a **unified whole**.

6. Use simple, low, and open **horizontal planes** anchored by vertical elements that seem to “grow” out of the earth.

7. Intertwine **indoors and outdoors** so that visitors always feel connected to the landscape.

8. Locate facilities in **suitable places** that are buildable, accessible, serviceable and maintainable.
9. Cluster facilities in ways that create **mystery and delight**.

10. **Concentrate facilities** to minimize their environmental impact, support alternative transportation options, and maximize efficiency.

11. **Minimize roads and parking** and keep them away from significant natural/cultural resources and important views.

12. Use a **simple palette** of materials that blends into the local environment and is sensitive in size, form and color to the immediate surroundings.

13. Use **durable materials** that have a strong presence, weather gracefully, are vandal resistant, and need less maintenance.

14. Use plants and topography to **soften built elements** and integrate them into the landscape.

15. **Conserve** resources—such as water—through use of advanced technologies.

16. Ensure every built component is **environmentally responsible** according to a recognized rating system, such as U.S. Green Building Council’s Leadership in Energy and Environmental Design. Meet or exceed the Agency’s goals for sustainability.
Chapter 4

Design Guidelines
4. Design Guidelines

This chapter describes how the principles given in the previous chapter should be applied. Guidelines were created to uphold an identifiable look to Spring Mountains National Recreation Area facilities, while allowing designers flexibility to respond to each site’s local conditions.

The first section, Site Structure, provides guidelines that help the designer place facilities and design a site to facilitate healthy ecological processes. It provides a summary of key use areas, which include:

- Visitor Center/“Village”
- Picnic and Day Use Areas
- Campgrounds
- Scenic Overlooks
- Major Trailheads
- Maintenance/Operations Areas

The next section, Development Character and Appearance, provides a summary of design elements of the Spring Mountains National Recreation Area. These elements form a character for the place which refers to how form, scale, massing, color, and materials come together to create a place’s personality.

The Buildings section provides guidelines that help translate the overall principles into built form. Following a discussion of architectural elements, it provides conceptual sketches for several building types in different landscape zones and ROS settings. The Landscape Improvements section gives examples of how materials can be used in the landscape.

These Guidelines are not meant to corral designers into specific design choices. They are intended to create a cohesive look and feel to the National Recreation Area’s facilities and ensure that they are ecologically and visually complementary to their landscape setting. Therefore, the principles and individual guidelines have been written with flexibility in mind—focusing on appearance, feeling and best practices rather than on prescriptive instructions.

However, within Section 4.4 (Landscape Improvements) specific design elements—paving patterns, benches, wall types, etc.—have been recommended for those situations in which a standard or prefabricated solution is appropriate. A list of potential products is provided in Appendix A.4.
4.1 Site Structure

Site Selection

Appropriate site selection can help preserve the sensitive resources that make the Spring Mountains special—such as their endemic species, sacred sites and scenic views. The site surrounding a facility defines its character and provides the first impression for visitors. Creative and careful site selection can strongly connect the built and natural environments and reduce the risk of property damage from natural events such as landslides, floods, and soil erosion. Proper site selection is one way to integrate development with LEED requirements (see Appendix A1). For example, the Village planned for Middle Kyle Canyon will make use of previously developed sites with existing infrastructure and will be serviced by public transportation. It will:

- Draw people into a site through its visibility/attractiveness when viewed from adjacent roads
- Avoid placing facilities in areas that contain scenic quality
- Where suitable, develop in disturbed or already used areas before considering sites that have not been previously disturbed
- Select sites that require minimal vegetation removal or topographic manipulation
- Consider adjacent transportation amenities and utilities to be certain they are appropriate for the site’s intended use and expected level of visitation
- Carefully consider facility placement in relation to the area’s endemic, endangered, and threatened plant and animal habitats
- Locate facilities well out of the 100-year flood plain
- Use existing Federal/State/County setback standards as a minimum when placing facilities near water/wetlands
- Avoid developing areas on or near steep slopes or highly erodible soils
- For individual buildings, place them such that they do not interrupt scenic views or dominate the landscape
- Generally consolidate uses and programs to minimize building/development footprint

The former Nel Property provides an ideal site for facility development, because it is already disturbed, topographically suitable, and not near sensitive resources.
Site Planning

“Village” Area

The proposed visitor center/“village” along S.R. 157 will be one of the most urban settings within the National Recreation Area, and will thus fall under the urban ROS category. The purpose of this facility will be to provide an NRA gateway and developed recreation choices for nearby city-dwellers. It should provide services for visitors and help them transition into the National Recreation Area’s natural setting, with its unique ecological characteristics.

Its facilities should integrate with the surrounding landscape, helping visitors to intrinsically understand the area. Facilities should provide relief from the Mojave Desert while also encouraging people to experience the natural setting.

• Ensure all Village elements relate to one another and feel like one unified place
• Emphasize views into the site to spark interest of passers-by
• Integrate facilities with the land
• Incorporate accessibility and safety in all designs
• Break up the scale and mass of structures/hard surfaces to create a comfortable campus environment
• Emphasize views and connections to the environment:
  – Cluster visitor facilities near, but not on, the canyon edge
  – Provide views from public gathering areas and resting areas inside buildings
  – Place parking away from main views and the canyon
  – Design the canyon rim as a restful public place
  – Evoke mystery and delight by obscuring and exposing views while leading people to the rim
  – Use low, horizontal forms that don’t compete with views
• Include facilities as part of the entry experience to create a sense of liveliness and interest
• Soften parking and provide comfortable pedestrian refuges and well landscaped walkways
• Create a diversity of comfortable outdoor seating for all seasons
• Use multi-use communal spaces to foster both social interaction and places where visitors can feel more private
• Arrange spaces to provide for light/dark, big/small, open/closed
• Incorporate high quality interpretive signs/elements

Separate automobile and transit circulation to prevent conflicts
Screen/buffer parking with native plants and landforms
Break up parking with trees and pedestrian spines
Create inviting visitor arrival plaza with intuitive wayfinding
Provide central pedestrian spine that leads visitors to the main views
Provide viewing areas adjacent to canyon rim, and keep this area open for public use
Cluster buildings to create an intimate campus experience
Provide viewing areas adjacent to canyon rim, and keep this area open for public use

Site Planning
The Village facilities should be oriented to views of Kyle Canyon, provide multi-use communal spaces, and contain areas with native materials and art that can be used for play.

Integrate and ground facilities through walls and paving that appear to grow out of the earth.

Blend built and natural environments by using native materials in a structured way.

Leave canyon rim available for use by all visitors.
Building from the Earth

**Picnic and Day Uses**

The visitor experience of a picnic area should center around spending time in a natural setting.

- Site picnic areas so they are convenient to services
- Integrate convenient transit stops
- Create centralized but convenient parking and minimize roads
- Incorporate existing native vegetation into roads and sites
- Connect parking/sites/nearby trails with convenient paths
- Orient picnic sites toward attractive views or main resource
- Keep area near views/resources open for use by all visitors
- Incorporate communal open areas for active play
- Provide trees or structures to shelter visitors from the hot sun and to buffer individual sites
- Ground and connect individual sites with seatwalls
- Provide space and seating to accommodate extended families
- Use rocks or other informal elements to direct vehicles

**Group Sites**

- Provide convenient clustered parking off the access road
- Minimize roads
- Use vegetation to buffer sites from each other
- Create simple circulation paths to connect parking, picnic sites and other trails
- Locate smaller group sites so they can be used separately or combined
- Create informal open space area for active play with adjacent seating
- Build simple, open, horizontal shelters and place shelters near open space/play area
Design Guidelines

Family Sites

- Shade and buffer sites with native trees, and use a simple materials palette—mainly walls and paving—to anchor and integrate sites with the landscape
- Maintain native vegetation as buffer to reinforce secluded feeling
- As needed, plant native trees to provide shade
- Create central road/parking area that provides staging for picnic sites
- Use a mix of covered and open picnic sites
- Create informal play area with seating
- Design convenient connecting paths between facilities and adjacent hiking trails
- Position rest rooms in central location
- Provide native grass areas for active play and to encourage communal interactions

Shade and buffer sites with native trees, and use a simple materials palette—mainly walls and paving—to anchor and integrate sites with the landscape.
Campgrounds

Campgrounds, like picnic areas, should respect their natural setting.

- Place campgrounds away from main roads, and screen them to allow a peaceful experience
- Position campsites along short loop roads to minimize traffic passing any one campsite
- Bestow meaningful names on campground loops to aid in cognitive mapping
- Route roads and sites around existing native vegetation and fit them to the topography
- Orient sites to views or open-space to enmesh campers in the environment
- Minimize and cluster structures to emphasize the natural setting
- Centrally locate key facilities
- Link campsites/facilities/trails with convenient paths
- Create destinations at significant resources (e.g. scenic overlook)
- Include an outdoor classroom, when feasible and appropriate
- Provide trees or structures to shelter visitors from the elements

- Use modest signs and combine them with built elements such as restrooms and trailheads
- Consider building information kiosk with site map at primary service areas such as restrooms

**Developed Campground**

- Maintain native vegetation as buffer to reinforce secluded feeling
- Cluster campsites around open areas or views
- Create small campsite road loops
- Centrally locate showers/comfort stations; consider kiosk with site map
- Link campsites with other facilities/trails
- Significant View
Scenic Overlooks

Many opportunities exist for scenic overlooks in the Spring mountains National Recreation Area. Overlooks must be carefully designed to allow for both efficient pedestrian movement and quiet contemplation.

• Establish overlooks at key viewpoints
• Route parking/roads/paths around native trees/shrubs and adhere to the existing topography
• Buffer overlook parking from road with landforms/vegetation
• Buffer parking from overlook area with vegetation and topography
• Draw visitors to the overlook through gaps in vegetation that hint at the destination
• Create comfortable seat walls and benches from which visitors can relax and enjoy the view
• Provide shade through use of native vegetation, as feasible
• Use surfaces and structures that blend into the surroundings
• Carefully integrate interpretive elements so they do not distract from the view and setting
• Where appropriate, use viewing assists such as viewing tubes or telescopes to focus attention on key elements and enhance views

Walls can provide effective seating areas at overlooks
Major Trailheads

Trailheads serve as main transition points between civilization and the National Recreation Area’s sacred and natural landscape. Their intensity and use varies greatly across the National Recreation Area, with some accommodating many cars and oversized vehicles while others handle only a few. Each trailhead, therefore, is unique and must be sensitively designed to help people make the mental shift from the busy-ness of their everyday lives to the National Recreation Area’s tranquility.

- Provide a visitor sequence that orients users to the trail, helping them mentally proceed from the road and their car to the small-scale trail setting.
- Use materials and signs appropriate to the local environment and ROS setting in ways that encourage trail users to better appreciate the Spring Mountains (e.g. boulders, native vegetation).
- Create modest barriers to maintain the health of more sensitive resources.
- In urban settings, place an easily serviceable restroom that does not dominate the visitor experience.

Include clear site identification sign to ensure easy wayfinding

Use informational signs consistent with the trailhead’s ROS

Provide shade and seating for people to wait at the trail’s entry
Maintenance/Operations

Maintenance and operations facilities should be designed as sensitively and thoughtfully as other facilities within the Spring Mountains National Recreation Area.

- Locate facilities so they are screened from the public
- Design facilities to nestle within the landscape—and avoid removing trees and shrubs
- Place emergency service facilities nearest to area entrance to allow fast and safe response
- Place helipad reasonably near emergency service facility and main road
- Locate maintenance yards behind emergency/maintenance facilities
- Screen/buffer operations activities from public view with a combination of native vegetation and screening walls
- Use architecture similar to other public-use buildings, while using less costly “second-tier” materials (See section 4.3 for buildings)
- Separate employee housing from noisy facilities
- Cluster housing—including temporary accommodations—to help build a sense of community
- Connect housing to work/maintenance site with a pedestrian/bike trail to reduce vehicle impacts

Operations activities should be screened from public view, while also allowing easy emergency access to the area’s main roads
**Drainage**

Even though the Mojave Desert has an arid climate, rain does fall for brief, intense intervals. Developed areas should have designed drainage systems that prevent an increase in the post development rate and quantity of storm water runoff. These systems also should protect water quality, provide habitat, and facilitate groundwater recharge. In addition, they can provide pleasant vegetated settings for visitors and interesting design elements.

- Cluster developed sites to reduce the amount of paved surfaces (roads, parking, etc.)
- Minimize the site’s impervious area and maximize the use of porous paving
  - Porous paving includes “gap-graded mix” asphalt with a 1/2-1” aggregate sieve; geo-block or grasscrete type products; and pervious pavers
- Capture stormwater from impervious areas (roofs, parking and paving) to reuse on-site
- Integrate designed drainages with natural drainage patterns, both aesthetically and functionally
- Protect water quality with methods that also provide habitat and support ecological function where appropriate
  - Bioswales
  - Vegetative filter strips
  - Vegetated swales
  - Vegetated buffers
- Use open-fields and play areas for stormwater infiltration to support aquifer recharge
- Create a system that averts the need for piped conveyance with curbs and gutters
- Design drainage areas to be an attractive amenity regardless of the season (even when dry)

**Pavers with wide gaps are one type of porous paving**

**Bioswales should be used to cleanse runoff from impervious surfaces**

**Flat areas, such as open fields/play areas can provide a location for infiltration**

**Drainageways should include local vegetation, such as these shrubs in Kyle Creek**

**Highly designed drainages can provide interesting features in Urban ROS settings**
**Grading**

Grading greatly affects how a facility aesthetically fits with its surrounding landscape, as well as its erosion potential and stormwater runoff patterns. Grading activities have the potential to severely disturb a site and damage surrounding vegetation.

- Retain, where possible, natural site landform and drainage patterns
- Minimize grading by placing site elements so that they adapt to natural topography
- Blend topography of developed facilities into the surrounding landscape
- Generally equalize cut and fill to minimize the need to haul materials to/from the site
- Use extra material from cut operations on site
- Revegetate or use other means to permanently stabilize steep slopes
- Grade access routes to comply with all regulations; however, compliance will not be required when it would disrupt the natural setting or substantially alter the purpose of a facility

**Integrate facilities with existing topography and landscape character**

Minimize the need to haul materials from the site

Do not significantly change topography to fit roads, parking or other facilities
Building from the Earth

**Roadways**

The scale and design of roads greatly affects a visitor’s impression of a place. Larger-scale paved roads are most appropriate in an urban ROS, and small-scale roads fit better with the rural or roaded natural ROS’s.

- Design roads to save existing landscape features (e.g., rocks, trees, vegetation, slopes)
- Where possible, design roads and roadways to be recreation access routes
- Minimize road width while also accommodating all anticipated traffic uses (e.g., cars, trucks with trailers, RVs, buses, and bicyclists)
- Use porous/natural paving materials whenever possible
- Recognize sight lines, distance and distractions when designing roads and intersections. Some may need costly acceleration/deceleration lanes
- Landscape road edges with native plants, rocks and logs in a natural-appearing way to prevent vehicles from driving off-road and to integrate roads into the landscape

- Design roads so that curbs and gutters are not needed, where practical
- Follow appropriate technical standards and guidelines for design

Parking/roads should adapt to existing landscape features such as large trees

Road edges should be informal, natural-appearing, and integrate into the surrounding landscape
Parking

Parking areas should be convenient to the destination they support, but at the same time not intrude on the majority of the visitor experience. Furthermore, their design should support sustainability goals and not have a detrimental impact on their surrounding landscape.

- Create a quality first impression by preserving, establishing or enhancing natural areas at parking entries
- Preserve trees, rock outcrops and other natural features within the parking area
- Provide the minimum amount of parking needed and consider transit options as opposed to creating more parking
- Integrate parking into the landscape by using natural sloping edges, local boulders, mounds, and native vegetation
- Generally, maximize the use of disturbed areas for parking
- Where feasible and appropriate, mitigate the heat island effect in large paved parking areas by using vegetation to create shade
- Use porous/natural surface materials whenever possible
- Create incentives for people to bicycle, carpool or use environmentally friendly vehicles to get to the site by including bicycle racks and preferential parking spaces
- Place large vehicle parking in an area that does not overwhelm the parking area’s visual appearance
- Provide clearly defined pedestrian walkways with visual connections to related use areas
- Ensure maintenance vehicles can access parking and service areas

Permeable paving makes parking feel rural and also has stormwater benefits

Retaining and integrating native landscape materials help parking areas better fit with their surroundings.

Clearly defined pedestrian walkways help break up large parking lots
Building from the Earth

Paved and Special Trails

Ideally, trail development should minimally affect the landscape in which it lies, and provide satisfying opportunities for people to exercise and connect with the landscape.

The Forest Service has detailed guidelines for most trail development, so these guidelines apply to paved trails and special cases within the Spring Mountains National Recreation Area only.

- Whenever possible, place trails along already-disturbed corridors such as previous trail alignments
- As feasible, regrade steep trails to be accessible and restore unused alignments with native plants
- When appropriate because of trail congestion, provide a safe trail width for a diversity of uses
  - Use monitoring as an adaptive use tool, and redesign trail when necessary
- As feasible, make all paved trails accessible, while providing multiple ways to transition down hillsides (e.g., sloped trail, stairs)

- For the natural trail through Kyle Canyon, leave the surface and alignment natural, undeveloped and free of interpretive signs/elements
  - Use monitoring as an adaptive use tool, and redesign trail when necessary

The Kyle Canyon trail should not be paved, but left in its natural form

Heavily used multi-use trails should be divided between uses by paving, color changes, striping or other means
Open Play Areas

Open play areas should be provided within picnic and camping areas, and at the Village. They should encourage communal interaction while being sensitive to the area’s climate and vegetation.

- Design fields for the level of intended use:
  - Low use areas should use native grasses and low shrubs that do not need irrigation
  - Urban areas should use native grasses that can withstand high use and need minimal irrigation. If native grasses cannot meet these conditions, use non-native grasses only if they are proven not to escape and naturalize in these habitats and can be maintained. Otherwise use substrates such as sand or gravel.

- Blend the edges of open play areas into surrounding vegetation so that they feel hewn out of the surrounding rough landscape

- Create fields that mimic the area’s naturally occurring meadows, whenever possible

- Connect play areas to other use areas by accessible surfaced walking paths of standard width that permit passage of walkers, accessible vehicles, and maintenance vehicles
  - For standard light truck access minimum trail width is 8’
  - Minimum 4’ width for small utility vehicles

Urban/Rural or high use areas should have lower water requiring grasses, such as dwarf tall fescue

Rural/Roaded Natural or medium use areas should have native and non-irrigated grasses

Rooded Natural/Semi-Primitive or low use areas should contain native grasses and shrubs, and gradually transition to the surrounding landscape
Functional Plantings

Planted buffers provide visual and sensory barriers between competing landscape elements—such as parking areas and scenic views. Plantings also help define the space around facilities.

- Use landforms—either existing natural features or constructed mounds/berms—to create screens and buffers between elements
  - Only construct mounds/berms if soil is already available, such as from grading cut operations, and they can be visually integrated with the surrounding landscape
  - Mounds/berms should not have a slope greater than 3:1

- Strategically place clusters of native trees/shrubs to visually separate areas
  - Scale is dependent on what is being buffered
  - Wide plant buffers are preferable—meaning at least 20 feet—but require a greater density and scale of plants

- Place, maintain, and protect native trees/shrubs around developed facilities to help soften architectural elements so that they better fit with their surroundings

Mounds can provide an effective buffer if they are planted effectively and blend with their surroundings

Clustered plants can create effective buffers, such as this mix of cliffrose, and pinyon/juniper

Native landscape structure should influence the design of deeper plant buffers, such as this transition from sage to pinyon/juniper
### Plant List for Functional Plantings

All plants used within the Spring Mountains National Recreation Area should be appropriate for the area, which generally means they should be native and not invasive. When possible, plant species that provide food or habitat for the National Recreation Area’s sensitive wildlife should be selected over those that don’t. This will help support the area’s sky-island environment, which is what makes the National Recreation Area unique and special.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Botanic Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trees</strong></td>
<td></td>
</tr>
<tr>
<td>Pinyon pine</td>
<td><em>Pinus monophylla</em></td>
</tr>
<tr>
<td>Utah juniper</td>
<td><em>Juniperus osteosperma</em></td>
</tr>
<tr>
<td>silk-tassel</td>
<td><em>Garrya flavescens</em></td>
</tr>
<tr>
<td>mountain mahogany</td>
<td><em>Cercocarpus ledifolius</em></td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td></td>
</tr>
<tr>
<td>green ephedra</td>
<td><em>Ephedra viridis</em></td>
</tr>
<tr>
<td>basin big sagebrush</td>
<td><em>Artemisia tridentata</em></td>
</tr>
<tr>
<td>bitterbrush</td>
<td><em>Purshia tridentata</em></td>
</tr>
<tr>
<td>cliffrose</td>
<td><em>Purshia mexicana var stansburyana</em></td>
</tr>
<tr>
<td>cheesebush</td>
<td><em>Hymenoclea salsola</em></td>
</tr>
<tr>
<td>*rubber rabbitbrush</td>
<td><em>Chrysothamnus nauseosus</em></td>
</tr>
<tr>
<td>Utah serviceberry</td>
<td><em>Amelanchier utahensis</em></td>
</tr>
<tr>
<td>banana yucca</td>
<td><em>Yucca baccata</em></td>
</tr>
<tr>
<td><strong>Herbs/Perennials</strong></td>
<td></td>
</tr>
<tr>
<td>*sulfur buckwheat</td>
<td><em>Eriogonum umbellatum var subaridum</em></td>
</tr>
<tr>
<td>wallflower</td>
<td><em>Ersimum capilatum</em></td>
</tr>
<tr>
<td>snakeweed</td>
<td><em>Gutierrezia machaeranthera</em></td>
</tr>
<tr>
<td>threadleaf snakeweed</td>
<td><em>Gutierrezia microcephala</em></td>
</tr>
<tr>
<td>broom snakeweed</td>
<td><em>Gutierrezia sarothrae</em></td>
</tr>
<tr>
<td>golden showy eye</td>
<td><em>Heliomeris multiflora var nevadensis</em></td>
</tr>
<tr>
<td>blue flax</td>
<td><em>Linum lewisii</em></td>
</tr>
<tr>
<td>pinyon aster</td>
<td><em>Machaerantera canescens</em></td>
</tr>
<tr>
<td>globe mallow</td>
<td><em>Sphaeralcea ambigua</em></td>
</tr>
<tr>
<td>prince’s plume</td>
<td><em>Stanleya pinnata</em></td>
</tr>
<tr>
<td>*Arizona thistle</td>
<td><em>Cirsium arizonicum</em></td>
</tr>
<tr>
<td>*Palmer penstemon</td>
<td><em>Penstemon palmeri</em></td>
</tr>
<tr>
<td>*Douglas dusty maiden</td>
<td><em>Chaenactis douglasii</em></td>
</tr>
<tr>
<td>*white virgin’s bower</td>
<td><em>Clematis ligusticifolia</em></td>
</tr>
<tr>
<td><strong>Grasses</strong></td>
<td></td>
</tr>
<tr>
<td>indian rice grass</td>
<td><em>Achnatherum hymenoides</em></td>
</tr>
<tr>
<td>squirreltrail</td>
<td><em>Elymus elymoides</em></td>
</tr>
<tr>
<td>muttongrass</td>
<td><em>Poa fendleriana ssp longiligula</em></td>
</tr>
</tbody>
</table>

* = plant that supports endemic butterflies
Building from the Earth

**Plant List for Functional Plantings (continued)**

Plants used around facilities should be appropriate to their landscape zone so that they fit aesthetically with their surroundings. This will also result in plantings that are durable and low maintenance, as well as appropriate for their surrounding ecosystem.

If a designer/manager/maintenance person is uncertain about which zone’s list should be used or whether a certain plant is appropriate, he/she should contact the Spring Mountains National Recreation Area’s Botanist.

### High Desert Zone

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Botanic Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua tree</td>
<td>Yucca brevifolia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shrubs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bush encelia</td>
<td>Encelia virginensis</td>
</tr>
<tr>
<td>brittlebush</td>
<td>Encelia farinosa</td>
</tr>
<tr>
<td>green ephedra</td>
<td>Ephedra viridis</td>
</tr>
<tr>
<td>Apache plume</td>
<td>Fallugia paradoxa</td>
</tr>
<tr>
<td>cheesebush</td>
<td>Hymenoclea salsa</td>
</tr>
<tr>
<td>banana yucca</td>
<td>Yucca baccata</td>
</tr>
<tr>
<td>Mohave yucca</td>
<td>Yucca schidigera</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herbs/Perennials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>firecracker penstemon</td>
<td>Penstemon eatonii</td>
</tr>
<tr>
<td>globe mallow</td>
<td>Sphaeralcea ambigua</td>
</tr>
</tbody>
</table>

### Forested Zone

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Botanic Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ponderosa pine</td>
<td>Pinus ponderosa</td>
</tr>
<tr>
<td>bristlecone pine</td>
<td>Pinus aristata</td>
</tr>
<tr>
<td>limber pine</td>
<td>Pinus flexilis</td>
</tr>
<tr>
<td>white fir</td>
<td>Abies concolor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shrubs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Mtn goldenweed</td>
<td>Haplopappus compactus</td>
</tr>
<tr>
<td>basin big sagebrush</td>
<td>Artemisia tridentata</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herbs/Perennials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>rough angelica</td>
<td>Angelica scabrda</td>
</tr>
<tr>
<td>Cooper hymenoxys</td>
<td>Hymenoxys cooperi</td>
</tr>
<tr>
<td>blue flax</td>
<td>Linum lewisii</td>
</tr>
<tr>
<td>*silver lupine</td>
<td>Lupinus argentus v tenellus</td>
</tr>
<tr>
<td>pennyroyal</td>
<td>Monardella odoratissima</td>
</tr>
<tr>
<td>firecracker penstemon</td>
<td>Penstemon eatonii</td>
</tr>
<tr>
<td>beakflower penstemon</td>
<td>Penstemon rostriflorus</td>
</tr>
<tr>
<td>rock goldenrod</td>
<td>Petrororia pumila var pumila</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grasses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>blue grama</td>
<td>Boutelous gracilip</td>
</tr>
<tr>
<td>California brome</td>
<td>Bromus ciliatus</td>
</tr>
<tr>
<td>needle and thread</td>
<td>Hesperostipa comata var intermedia</td>
</tr>
</tbody>
</table>

* = plant that supports endemic butterflies

Map of Landscape Zones
Plant Restoration

Restoration activities help improve the ecological health of previously disturbed areas, while also decreasing soil erosion. This process generally takes several years and detailed planning in advance. Restored areas should blend seamlessly with the adjacent native landscape.

- Survey and protect healthy native plants, when possible, in facility development areas
- Select species appropriate for the landscape zone
  - Make plant density compatible with the pre-disturbance condition
- Set aside and preserve topsoil and healthy plant specimens on development sites, and replace them once construction is complete
  - The topsoil will reintroduce its native seeds and microorganisms
- Collect native seeds from adjacent sites to maintain local genetic stability
- For annual forbs and grasses, either sow collected seeds directly at the restoration site or have a nursery use them to develop a seed bank
- For perennial forbs, shrubs and trees send seeds or cuttings to a nursery to grow seedlings for transplanting
- Emphasize plants that support sensitive species, such as local butterflies
- Remove weeds and other exotic plants before restoration begins
- Regrade restoration sites to mimic their pre-disturbance condition
- Restore, to the extent possible, the native soil composition before installing plants
- Mulch or otherwise temporarily stabilize soil after planting

Hillside in the transition zone are typically populated with pinyon/juniper

Many areas needing restoration are populated by low and sparsely spaced plants

Straw mulch provides temporary soil stabilization at this Forest Service parking lot near Lake Tahoe
Building from the Earth

4.2 Overall Development Character and Appearance

**Transition Zone - The Baseline for Design Guidelines**

Occupying middle elevations of the Spring Mountains National Recreation Area, the Transition zone is a bridge between the High Desert below and the Forested zone above. It shares certain traits of these two neighboring zones, blending an evergreen canopy with the sparse vegetation of the desert. The Transition zone is dominated by open woodlands of low-growing trees. Single-leaf pinyons and Utah junipers form a thin cover which provides a measure of shade and enclosure. Open spaces between the scattered trees enable open views across the surrounding country.

The Transition zone encompasses more of the National Recreation Area than any other landscape zone. Most of the development projected for the NRA will occur within this zone. For these reasons, the Transition zone was chosen as the baseline for design guidelines. The guidelines and recommendations in this document apply to the Transition zone but also carry over to the other zones, with slight modifications. Facilities in High Desert or Forested areas must respond to the unique characteristics of their settings.

In the Transition zone:
- Respect the height of the native woodland by using horizontal forms that are low to the ground
- Use plants appropriate to the Transition zone; these may include species characteristic of Forest and High Desert
- Design shelters that create shade but do not disrupt natural views
- Use colors that complement the natural environment, with base colors ranging from cream to light olive

*Pinyon pine cones

The Transition zone features a sparse canopy of low-growing evergreen trees, allowing for open views

*Pinyons provide a measure of shelter*
**High Desert Zone Considerations**

In some respects, facilities in the High Desert zone should be similar to those of the Transition zone, as these landscapes hold many qualities in common. Design in High Desert settings, however, should be grounded in the Mojave Desert and reflect the minimalist character of the desert. In this zone facilities will remain simple, consisting mainly of signs, trailheads, picnic areas, restrooms and parking areas. Providing visitors with adequate shade will be a special priority.

- Minimize built/engineered facilities and site modifications
- Provide only plant combinations and densities appropriate for the High Desert
  - Plant sparsely to integrate with the desert environment
  - Avoid softening facilities with lush vegetation
- Derive color accents from the seasonal colors that characterize this zone
  - Use them sparingly, as the colors can be intense
- Where necessary, create structures that provide dense shade
Forested Zone Considerations

The Forested zone's design elements should follow most of the preceding guidelines. However, they should be adapted to fit this zone’s climate and landscape. For a detailed list of the Forested zone’s characteristics, see Chapter 2.

• Create an aesthetic suited to both mild summers and snowy winters
• Make facility footprints compact to fit within this zone’s steep terrain and sensitive vegetation
  – Minimize scale of parking
  – Emphasize sense of privacy/enclosure this terrain provides
• Create forms that are more vertical, especially rooflines, to reflect this zone’s verticality and accommodate snowloads
  – Avoid “Swiss Chalet” and log building aesthetics
• Design with larger-scale elements to reflect this zone’s sizeable cliffs, trees and boulders
• Build with stone—especially limestone blocks and boulders—glass and wood in this zone
  – Wood should still be an accent, not a primary material
  – Moderate use of timbers is appropriate in this zone
• Reflect adjacent facilities’ major design themes while adapting them to these guidelines
  – Understand and respect historic buildings and landscapes
• Use a darker colors—but within the same hues—to reflect the colors of this zone’s landscape and historic structures
  – Warm grays, creams, and beige should continue to dominate
  – Brown should be an accent color, not a primary/body color
• Restoration of disturbed areas should be considered as a part of project design and implementation

Facility colors should complement the Forested zone’s darker and more vibrant colors

Structures should be adjusted for the Forested zone’s more vertical landscape elements and also for its climatic requirements
Materials

Material selection should complement and reflect the surrounding natural landscape. Using local materials is one of the first steps towards sustainability in the built environment.

The list of materials given below is a “kit of parts” to help designers form a cohesive look to National Recreation Area facilities.

- Use a palette inspired by nature, including:
  - Stone
  - Structural steel with durable finish
  - Corten steel
  - Poured concrete
  - Rammed earth
  - Soilcrete
  - Colored asphalt/
    “Rustic Pavement”
  - Shredded rubber surfacing in appropriate natural looking colors
  - Colored asphalt/
    “Rustic Pavement”

- Choose materials that:
  - Are able to withstand harsh sun, the desert climate and the freeze/thaw cycle
  - Are low maintenance (avoid paint or other high-maintenance finishes)
  - Appear as an outgrowth of the land
  - Seamlessly connect indoors and outdoors
  - Are easily replaceable and cost effective

- Select materials with a rough texture and natural appearance, mimicking the way each material is in the surrounding environment. Use limited amounts of wood because it is vandalism prone and high maintenance
  - Some wood can be used in busier areas such as a visitor center as long as it does not evoke log-architecture

- Tie structures to the land and ground them in the earth by using vertical piers of stone, steel, or similar materials

Concrete can be poured in ways that evoke local geology (lower picture)

Soilcrete can create very durable structures that also blend well with the natural landscape

Rammed earth has a rustic look and can be used for buildings, landscape structures and paving

Colored asphalt, aka “rustic pavement,” coordinates with surrounding colors better than standard asphalt
**Scale and Massing**

The scale and massing of the Spring Mountains themselves are much greater than the human scale. Shelters and planned recreation sites, such as picnic or camping, need to reduce the grand scale of the environment to a scale we can relate to and be comfortable in.

- Construct low structures that do not compete with the mountains
- Group structures and site improvements to create outdoor rooms
- Respond to topography by stepping roof lines and foundations
- Reflect the need for shelter through ample shading
- Provide a rich variety of small intimate spaces that work as a unified whole
- Alternate spaces between light/dark, big/small, open/closed—as they alternate in nature

Ideally, structures hug the landscape and flow with the horizontal planes of the Spring Mountains

Structures should not interrupt the distant mountain views

Tuck structures into the landscape and help create sheltered outdoor spaces
Form

The form of the built environment in the Spring Mountains National Recreation Area is inspired by the informal organic character of the mountains, drainages and stone formations. Fully enclosed and three sided structures have similar forms. Open structures may be a smaller scale to meet only the immediate needs of the users (such as to provide a shaded waiting area at a transit stop).

- Reflect the mountains with horizontal orientation and vertical anchors
- Create an aesthetically pleasing ratio of walls to roof area (roofs should not dominate)
- Design outdoor spaces that balance the mass and scale of adjacent buildings
- Facilitate ample transitions and connections between indoor and outdoor spaces
- Connect multiple horizontal planes including walking, seating and building surfaces
- Provide shade during the hot summer months and maximum natural interior light during the winter months

Low profile open structures connect people to the outdoors, and their form does not compete with the surrounding natural environment

Facilities should complement adjacent geologic formations; multiple indoor/outdoor spaces should provide balance with the greater landscape
Building from the Earth

**Color**

Colors used for both site and architectural elements within the Spring Mountains should be derived from surrounding landscape elements, specific to each ecological zone.

Colors should generally be soft and subtle and should be used to blend the built with the natural environment.

Inherently, natural and man-made materials such as stone, timber, colored concrete, rammed earth, or corten steel will contain a variety of colors, provide a sense of depth, and a more natural appearance. When possible, the inherent material colors should provide the base coloring, while surface applications such as paint are used less frequently.

Base paint colors or accent colors should relate to the inherent material colors used, providing coordination between elements.

*Material and paint colors used should relate to the environment of which they are a part*

*Both base and accent colors for site and architectural elements should be soft and subtle, and blend the built with the natural environment*
### Example Color Palettes

Example color palettes have been developed to give an appropriate color range for use within the Spring Mountains National Recreation Area. Only one color palette should be used for any particular area.

Base colors should be neutral, the darkest of which should overlap between zones. This overlap of base coloring will help provide a connection between each zone.

Accent colors are more vibrant than base colors and should be used with discretion. They should be derived from the surrounding environment. They are used in details such as railing, canopies, window systems, and signage, but never as a field color.

In general, colors move from lighter in the High Desert zone to darker in the Forested zone. Other differences include:

- The High Desert zone should include warm colors only.
- The transition zone has the widest range of colors and should include both warm and cool colors.
- Colors in the Forested zone should be darker than the other zones and blend with their alpine environment.

**Note:** The colors shown provide the appropriate range for the Spring Mountains National Recreation Area. Due to differences between the color of this printed document and actual CMYK colors, a CMYK color chart should be used during paint selection to ensure a match to a selected paint manufacturers color.
4.3 Buildings

Building Character

Buildings within the Spring Mountains NRA will have architectural character and elements specific to the Ecological Zone of which they are a part: High Desert, Transition, or Forested. In addition, architectural elements will differ between the Recreation Opportunity Spectrum (ROS) classifications as defined for this project: Urban, Rural, or Roaded Natural.

Architectural elements define the general aesthetic of a building and are provided in this section of the document. These elements include the massing and scale of the building; the base condition, or way the building touches the earth; the walls; the windows and other openings; the roof; the structural components; and the materials that make up the buildings construction and finishes.

Synthesis drawings of proposed building types, which incorporate the elements for a specific Ecological Zone, have also been developed. Combined, the synthesis drawings and architectural elements provide a general guide to the character and design expectations for buildings within the Spring Mountains NRA.
Architectural Elements

Massing and Scale

The massing and scale of buildings within the Spring Mountains NRA should strongly relate to the surrounding landscape. Building should integrate with their surroundings, stepping to fit site topography, and giving a sense of emergence from the landscape.

The architecture should be composed of simplified forms, roof lines, and geometry, with the intent of creating buildings that are subservient to the landscape.

Seamless connections between indoor and outdoor spaces should be utilized when possible, connecting and opening the building to the surrounding environment.

Differences Between ROS

The scale of buildings should generally be larger in the developed Urban ROS classification and smaller in the more primitive Roaded Natural ROS.

Massing of building should generally be simplified congruous with the ROS classification; the more primitive the site, the simpler the building form.

The use of stepped volumes helps to integrate the building with the topography of the site

Vertical elements used in the Transition zone begin to anchor the building to the site

Low volumes and horizontal projections help to integrate the building with the site

Outdoor spaces provide users with a connection to the surrounding landscape
Building from the Earth

*Differences Between Zones*

Buildings within the High Desert zone should be low to the ground and have a horizontal emphasis, typical of the desert environment of which they are a part. Curvilinear and organic elements may be introduced as they relate to geologic formations and site topography.

Buildings in the Transition zone should also emphasize the horizontal quality of their surrounding, but will include vertical anchoring elements. These anchoring elements will provide a link to the zone with the highest elevation, the Forested.

Building within the Forested zone should place emphasis on the vertical quality of their alpine environment. Generally, buildings in this zone should be no more than two levels and should have a small footprint to minimize site disturbance.

**Buildings in the High Desert zone:**
- Should emphasize the horizontal quality of the site through the use of forms that are low to the ground.
- Are composed of smaller volumes that break the building scale into intimate spaces.
- Have stepped roof lines that relate to site topography, and provide a sense of having emerged from the landscape.
- Generally have flat roofs.

**Buildings in the Transition zone:**
- Use horizontal forms that are low to the ground.
- Include vertical anchoring elements.
- Have stepped roof lines that relate to site topography.
- Use roofs of flat to gentle slope.

**Buildings in the Forested zone:**
- Use forms that complement the scale of their surroundings through emphasis of the vertical qualities of the Alpine environment.
- Have a smaller footprint to minimize site disturbance.
- Respond to the prevalence of snow with steeper gable roof lines.
**Base**

The base of a building is the point where a building connects to the earth. The base of buildings within the Spring Mountains NRA should be solid and firm in appearance, and should run to grade so that the building appears to have emerged from the landscape.

Base characteristics include:

- Bases should be stepped to fit the topography of the site.
- Bases should be constructed of materials that give a sense of firmness, and that ground the building to the site.
- Base materials should generally have coloring that relates to the surrounding soils of the site.
- Column bases should be stout and of materials consistent with the building’s base.

**Differences Between ROS**

The building’s base will generally not change between ROS classifications, with the exception that the base material may become less refined in more primitive areas. For example, a stone base may be of a coursed pattern in an Urban ROS and rough and uncoursed in the Roaded Natural.
Building from the Earth

**Differences Between Zones**

Buildings within the High Desert and Transition zone will generally have similar characteristics, however the Forested zone will have a few distinct differences.

Bases in the Forested zone:

- Should be constructed of either stone, or well crafted concrete.
- Should extend to wainscot height at minimum to protect from rain and snow.
- May require pier footing of stone or concrete on steep slopes.

Base materials in the Forested zone should run to grade, and to a height that protects the building from water and snow.

Piers may be needed when building on the steep slopes in the Forested Zone.

Stone or well crafted concrete are the preferred base materials for the Forested zone.
**Walls**

In the Spring Mountains NRA building walls should be of monolithic construction, providing a strong sense of mass. Walls should express depth, firmness, and the capacity for load bearing, with limited use of decoration.

Site walls should be extensions of the building, providing a sense of continuity, and defining the limits of developed outdoor spaces.

Appropriate wall materials will be discussed under the *Materials* subheading of this section. However, when cement plaster is used it should not be the dominant material and should be used in conjunction with other materials.

**Differences Between ROS**

Wall materials, such as stone, will generally become rougher, more rustic, and uncoursed in the Roaded Natural areas versus the Urban ROS classifications.
Differences Between Zones

Although very similar, some differences will be evident in the materiality and appearance of walls within each of the ecological zones.

In general, walls in the High Desert may be of a more organic nature and will have smaller penetrations than the other zones.

In the Transition zone, vertical wall elements will be introduced that extend above the roofline, acting as anchoring devices. In addition, a mixture of more refined materials is acceptable, including the use of CMU (Concrete Masonry Units). Wall penetrations will be larger in the Transition zone, opening the building to the landscape, and providing visitors with a connection to their surroundings.

Walls in the Forested zone will generally be proportioned to accent the vertical quality of their alpine environment. Stone and wood will be the primary wall materials, and should be balanced in their use.

Wall characteristics in the High Desert zone:
- Walls may be non-linear with a sinuous or organic quality.
- Penetrations in walls should be recessed.
- Walls may have organic qualities, such as rounded edges and corners.
- Wall materials may include colored concrete, stone, rammed earth, and cement plaster.

Wall characteristics in the Transition zone:
- Vertical wall elements should be introduced, punctuating the facade and anchoring the building.
- Penetrations in walls should be slightly recessed and larger than those in the other zones.
- Wall materials may include CMU, colored concrete, stone, rammed earth, and cement plaster.

Wall characteristics in the Forested zone:
- Walls should emphasize the vertical quality of the site.
- Wall cladding materials should relate to the alpine context and will include a mixture of stone and wood, with stone being the predominant material.
- Wood cladding may be of horizontal or vertical siding (predominantly horizontal in the lower areas of the Forested zone), or board and batten construction.
Windows and Openings

Windows and openings for buildings in the Spring Mountain NRA should be placed to allow for natural light, viewing opportunities, and to provide connections to outdoor spaces. In addition, where possible, windows should be operable to allow for natural ventilation.

Glazing should open to the landscape, providing visitors with a connection to their surroundings. In addition, openings should be located to provide framed views as well as passage to outdoor spaces such as courtyards.

Windows on exposed southern faces should be protected with shade canopies or overhangs, especially in the High Desert and Transition Zones. Windows should be minimized on west facing facades to avoid harsh evening glare and solar gain.

Differences Between ROS

Generally, buildings within the Urban ROS classification will have the largest and greatest number of openings, while openings in the Roaded Natural ROS will be less frequent and smaller.
Differences Between Zones

In general, windows and openings in the High Desert zone should be smaller and less frequent than the other zones. Windows should be recessed into the wall, providing strong shadow lines and a sense of depth. Window materials may include aluminum clad wood, aluminum, or other materials suitable to the zone.

In the Transition zone the size and prevalence of glazing should increase, opening the building to views and the surrounding landscape. Window materials may include aluminum clad wood, aluminum, or other materials suitable to the zone.

In the Forested zone, the majority of windows and openings should be located on the south and east sides to allow for maximum daylight and passive heating. When possible, building entry points should be located on the south side, allowing for more rapid snow melt. Overhangs should be provided at windows and points of entry to protect from driving rain and snow. The proportions of windows in this zone should be more vertical than horizontal. Window materials may include, aluminum clad wood, aluminum, or other materials suitable to the zone.
Roofs

Roof forms in the Spring Mountains NRA will have significant differences between each of the Ecological zones, as noted on the following page. However, some general characteristics that span between zones are apparent.

Generally, roofs should step to fit site topography and to relate to surrounding site features. Stepping roof forms will also help to break down building volumes.

Throughout all zones roof overhangs and canopies should be used to create areas of shade at courtyards and other outdoor spaces, and to protect windows on southern and western exposures.

Roofing materials should be of three main types: ballasted membrane, standing seam metal, and tile. Further detail is provided in the Material subheading of this section.

Differences Between ROS

Generally, roof forms will be simplified in the more primitive Roaded Natural ROS classification to allow for ease of construction, and to minimize visibility and site impact.
Differences Between Zones

Roofs in the High Desert zone should generally be flat or of low slope, including parapets, flat projections, and shed forms. Roof lines should express the horizontal qualities of the surrounding, and be stepped to integrate with the topography of the site. Ballasted membrane are preferred for flat roofs, and standing seam metal or tile for shed roofs.

Roofs in the Transition zone should be generally of low to moderate slope (pitches of 3:12 to 4:12), and punctuated by vertical anchoring elements. Shed and low slope gable forms should be used in conjunction with flat roofs. Roof materials may include standing seam metal, ballasted membrane, and tile (no Spanish style).

Roofs in the Forested zone should be gable types of moderate to steep slope (pitches of 4:12 to 10:12). Roof lines should express the vertical qualities of the alpine surroundings. Standing seam roofs should be used for ease of snow removal, simplicity, and protection from fire. Due to the prevalence of snow, roofs in the Forested zone should slope away from entry points.
Structure

The structure of buildings within the Spring Mountains NRA should be exposed, presenting a clear, simple and honest expression of how each building element is constructed.

In general, walls should be monolithic and express the capacity for load bearing.

Roof structures, rafters and beams, should be exposed, expressing the structure and providing a sense of openness.

When possible door, window, and other openings should have exposed lintels.

Columns should be of masonry, steel, or timber and should help define courtyards and breezeways.

Detailing of all structural connections shall be visually expressed and rustic.

Differences Between ROS

Although structures should always be straightforward in their articulation, in general they will be more simplified in the Roaded Natural ROS classification versus the Urban.
Differences Between Zones

It is the intent that building structural components should be exposed in all of the Ecological zones, and therefore structural expression will be similar throughout the Spring Mountains NRA. However, in general the use of steel should be more prevalent in the High Desert and Transitions zones, while timber elements should be more common in the Forested zone.

Powder coated steel is the preferred material for canopy and trellis structures in both the High Desert and Transitions zones. Limited use of wood is also acceptable if treated to withstand the environment.

Milled lumber is the preferred structural material for the Forested zone, with limited use of log. Connections between timber components such as beams, columns, and between truss members may be of steel plate, and should be visually expressed.
Materials

Buildings within the Spring Mountains NRA should be constructed of materials with natural qualities that relate to the surrounding environment, including: stone, colored concrete, CMU, rammed earth, cement plaster, corten steel, and wood. Material colors should relate to the base colors provided in Section 4.2.

Roofing materials include standing seam metal, ballasted membrane, and tile. Tile roofing may be of clay or concrete and should have a flat profile versus the curved profile typical of the Spanish style. Coloring for roofing materials should generally be neutral and may be selected from the example base colors provided in Section 4.2.

Canopies, railings, and other architectural components may be of powder coated or corten steel. Powder coat coloring should be selected from the range of accent or base colors provided in Section 4.2.

Differences Between ROS

In general, materials should be less refined in the Roaded Natural ROS classification. Timber may be rough-sawn versus milled, and stone may be rough and uncoursed versus the more regular coursing of the Urban ROS.
Building from the Earth

**Differences Between Zones**

In general, buildings within the High Desert should use monolithic materials such as stone, rammed earth, concrete, and cement plaster, with only limited use of wood. Flat roofs should be the most prevalent in this area and should be of ballasted membrane. For shed forms, both standing seam and tile are acceptable. Exterior windows and doors should be aluminum clad wood or anodized aluminum.

A similar material palette should be used in the Transition zone, with the addition of a material with a more standardized unit: CMU. Corten steel panel systems are also acceptable. Roofing materials should be of ballasted membrane, standing seam, or tile. Exterior windows and doors should be aluminum clad wood or anodized aluminum.

The Forest zone should be typified by the use of stone and wood. Wood cladding types may include horizontal, vertical, and board and batten siding. Due to the possibility of fire and for the shedding of snow, roofing should be limited to the use of standing seam metal. Windows and doors should be of aluminum clad wood, or anodized aluminum.
**Unifying Architectural Characteristics Between Zones**

As expressed in the narrative, architectural elements will differ between ecological zones due to environmental factors. However, by unifying certain architectural characteristics and linking these characteristics between zones, a cohesive yet unique expression can be established for the built environment throughout the Spring Mountains.

Common characteristics among zones could include the use of similar materials, and coloring. For example, the same stone could be used throughout all zones, yet the pattern and coursing could be varied depending on the desired aesthetic and ROS. Another example would be to overlap base and accent colors between zones, as noted in the Color section of the document.

Architectural detailing of exposed structural elements may also help to provide a unifying framework for the built environment. For example, rafter, facia, column bases, and steel connections between structural members could be articulated in a similar way throughout all zones. These details should be visually expressive and rustic.
Building from the Earth

Synthesis Drawings

Visitor Center
Ecological Zone: High Desert
ROS: Urban

The adjacent synthesis drawing shows typical characteristics of a Visitor Center in an Urban ROS for the High Desert zone:

- The building is held low to the ground and emphasizes the horizontal quality of the site.
- The building is broken into a series of smaller volumes with stepping roof lines.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Punched openings are small in size, while large expanses of glazing are protected with overhangs.
- Wall construction is monolithic and includes the use of both stone and cement plaster.
- Structural elements are exposed.
- Exterior spaces become extensions of the interior and are provided with trellis or canopy elements.
Comfort Station

Ecological Zone: High Desert
ROS: Urban/Rural

The adjacent synthesis drawing typifies what a Comfort Station in an Urban or Rural ROS for the High Desert zone may look like:

- The building is held low to the ground and emphasizes the horizontal quality of the site.
- The building is broken into a series of smaller volumes with stepping roof lines.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Punched openings are small in size.
- Wall construction is monolithic and includes the use of both stone and cement plaster or colored concrete.
- Structural elements are exposed.
**Information Kiosk**  
Ecological Zone: High Desert  
ROS: Urban/Rural

The adjacent synthesis drawing typifies what an Information Kiosk may appear like in an Urban or Rural ROS for the High Desert zone:

- The building is held low to the ground and emphasizes the horizontal quality of the site.
- The building is composed of a series of planar wall elements that extend into the landscape.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Wall construction is monolithic.
- Structural elements are exposed.
- The exposed structure provides a protective shade covering for user comfort.
**Maintenance Facility**

*Ecological Zone: Transition*

*ROS: Urban/Rural*

The adjacent synthesis drawing typifies the characteristics of a Maintenance Facility in an Urban or Rural ROS for the Transition zone:

- The building emphasizes the horizontal quality of the site, but is anchored to the site through the use of vertical elements.
- The roof line is composed of a series of low slope shed roofs.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Large expanses of glazing are protected with overhangs.
- Wall construction is monolithic and includes the use of both concrete and cement plaster.
- Structural elements are exposed.
Comfort Station
Ecological Zone: Transition
ROS: Urban/Rural

The adjacent synthesis drawing typifies what a Comfort Station may appear like in an Urban or Rural ROS for the Transition zone:

- The building emphasizes the horizontal quality of the site, but uses vertical wall elements as an anchoring device.
- The roof is a simple low-slope shed.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Punched openings are small in size.
- Wall construction is monolithic and includes the use of both stone and cement plaster.
- Structural elements are exposed.
**Information Kiosk**  
*Ecological Zone: Transition  
ROS: Roaded Natural*

The adjacent synthesis drawing shows the typical characteristics of an Information Kiosk in a Roaded Natural ROS for the Transition zone:

- The building is simple in form and uses a shed roof.
- Base materials run to grade, providing a sense of emergence from the landscape.
- Wall construction is monolithic.
- Structural elements are exposed.
**Maintenance Facility**

**Ecological Zone: Forested**

**ROS: Urban/Rural**

The adjacent synthesis drawing typifies the characteristics of a Maintenance Facility in an Urban or Rural ROS for the Forested zone:

- The building emphasizes a more vertical quality, typical of the alpine environment.
- The roof is a steep gable form of standing seam metal for ease of snow removal.
- Overhangs provide protection from driving rain and snow.
- The base material is of stone and extends to a height to protect from rain and snow.
- Wall cladding of stone and wood is well balanced.
- Timber beams and columns are exposed.
Comfort Station
Ecological Zone: Forested
ROS: Urban/Rural/Roaded Natural

The adjacent synthesis drawing shows typical characteristics of a Comfort Station in an Urban, Rural, or Roaded Natural ROS for the Forested zone:

- The building emphasizes a more vertical quality, typical of the alpine environment.
- The roof is a gable form of standing seam metal for ease of snow removal.
- Overhangs provide protection from the sun, and driving rain and snow.
- The base and outer wall material is of stone and extends to a height to protect from rain and snow.
- Stone walls and wood cladding are well balanced.
- Timber beams, rafters, and columns are exposed.
**Information Kiosk**

**Ecological Zone: Forested**

**ROS: Urban/Rural/Roaded Natural**

The adjacent synthesis drawing typifies the characteristics of an Information Kiosk in an Urban, Rural, or Roaded Natural ROS for the Forested zone:

- The structure emphasizes a more vertical quality, typical of the alpine environment.
- The roof is a simple gable form of standing seam metal for ease of snow removal.
- The structure provides a place of protection from inclement weather and the summer sun.
- The structure is constructed of stone and wood.
- Timber beams, rafters, and columns are exposed.
4.4 Landscape Improvements

Paving

Intent

Paving includes the surfacing of the pedestrian circulation system and gathering spaces. Its use can greatly affect the feeling of a recreation setting, and treatments should be tailored to the site’s ROS setting. Paving should therefore convey different levels of use through material, texture, width and alignment.

- Use simple yet interesting patterns of concrete in high use and large scale areas
- Break up concrete patterns with stones, cobbles or other attractive materials that reflect the place
- Make crosswalks safer and more interesting by using stronger textures and patterns (ensure ADA compliant surfaces)
- Stone pathways may be appropriate for areas of high visual importance
- For natural effect, employ buff-colored (not pink) finely graded aggregate surfacing in low use areas

Flowing lines should be used throughout paved areas

Accent paving in urban areas should indicate edges and paths and slow down vehicles

Stamped concrete or flagstone is appropriate for a Rural ROS

Paving in Urban ROS settings should be predominantly concrete with an informal border that moves gently into the natural landscape

Rounded natural areas should be surfaced with a natural material, such as finely graded aggregate
### Paving (continued)

<table>
<thead>
<tr>
<th>Road, Parking Paving Materials</th>
<th>ROS</th>
<th>Application</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
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<td>Unit Pavers</td>
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<tr>
<td>Colored Concrete</td>
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<td>Standard Concrete</td>
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<td>Colored Asphalt</td>
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<td>Standard Asphalt</td>
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</table>

**Note:** Application of materials can vary by life zone in color and pattern.

<table>
<thead>
<tr>
<th>Trail, Plaza Paving Materials</th>
<th>ROS</th>
<th>Application</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
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<tr>
<td>Stone – Ashlar Pattern</td>
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<tr>
<td>Stone – Flagstone Pattern</td>
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<tr>
<td>Unit Pavers</td>
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<td>Colored Concrete</td>
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<td>Standard Asphalt</td>
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<tr>
<td>Emulsion Stabilized Soil</td>
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<tr>
<td>Finely Graded Aggregate</td>
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<tr>
<td>Rubberized Asphalt</td>
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</tbody>
</table>

**Note:** Application of materials can vary by life zone in color and pattern.
Paving (continued)

Materials Selection

Stone

Natural stone pavement is to be used primarily for accents in Urban ROS settings. Stone color should match native stone as closely as possible, and coordinate with adjacent pavements and building facades.

Buff-colored Arizona sandstone is likely to be the most suitable commercially available product.

Within Urban ROS settings, the recommended pattern is a large scale random ashlar, with stone sizes averaging two square feet.

Alternatively, a flagstone pattern can be used to give a more organic, informal feel. Again, stone sizes should average two square feet.

Colored Concrete

Concrete pavements should be tinted to complement the native landscape coloration, rather than for decorative effect. A neutral monotone with minimal jointing, unidirectional broom finish, and clean lines is desired, as if the native landscape had been leveled and raked clean.

Selections of concrete admixtures need to be verified on site. Field observation is the only way to tell which is best.
Paving (continued)

Unit Pavers

Shared Vehicular Areas

Unit pavers are useful to provide a contrast to conventional vehicular pavements alerting motorists to slow down and yield to pedestrians. The contrast also helps indicate the preferred pedestrian routes to help concentrate pedestrian/vehicular cross-traffic in desirable, controlled locations. Colors should be selected to coordinate with adjacent surfaces.

Where conditions allow for on-site stormwater management, unit pavers with wide joints can contribute by allowing some percolation through pavement to well-drained natural or engineered subsurface layers.

Pedestrian-Only Areas

Unit pavers are intended for use in more highly developed areas where a modest level of surface patterning is desired. The intent of the unit paver application is to recognize areas of significant interest and use while remaining subordinate to the natural landscape. Contrasting color combinations and busy, complex pavement patterns are to be avoided. Buff color and clean lines are recommended, without blasting, tumbling, or otherwise mechanically rusticating the surfaces or edges.

6” x 12” pavers are appropriate to the large scale of the landscape viewshe, with this size being more suited to the public recreational realm than smaller units, which often appear too residential or gardenesque. Herringbone is an attractive pattern for wide spaces, while running bond is generally appropriate for narrower areas.

Color: Carmel
(see App. A.4)
Paving (continued)

Colored Asphalt / “Rustic Pavement”

Asphalt pavement is resilient, versatile and relatively low cost, but its usual dark gray to black color is incongruous with the natural landscape and very hot in the sun.

Standard asphalt mixes can be pigmented before installation to mitigate these undesirable qualities. Although it is difficult to lighten asphalt enough to match the Spring Mountains’ buff native soil, a tan-brown is readily achievable that is a significant improvement over the standard gray-black.

Emulsion Stabilized Soil Pavement

Emulsion stabilized soil pavement is appropriate for pedestrian areas and multipurpose trails. A variety of tree resin and synthetic polymer emulsions are available that can be mixed with native soil or a closely-matched blend and compacted to form permanent, resilient pavement with the appearance of natural soil.

Many of these products can also be used as a spray-on application for stabilization, erosion control and dust control on unimproved paths.
Building from the Earth

**Paving (continued)**

**Finely Graded Aggregate**

Finely graded aggregate is an appropriate surfacing for primarily pedestrian paths. It is a blend of 3/8” minus, well-graded aggregate that compacts to a reasonably hard surface for paths not exceeding approximately 5% slope.

Steeper areas and high use areas should not be surfaced with untreated finely graded aggregate, as these aggregates will not remain in place and will track onto adjacent pavements and facilities. A local source of aggregate should be used to attain coloration consistent with the native terrain.

**Stabilized Finely Graded Aggregate**

Stabilized finely graded aggregates are useful for pedestrian paths, multipurpose paths, and high-use areas where a natural appearance is desired. The primary component is the same as conventional finely graded aggregate surfacing: local, well-graded 3/8” minus aggregate with coloration sympathetic to the natural landscape.

The aggregate is premixed with a plant-based binder that locks the aggregate particles together when water and compaction are applied. The resulting surface is significantly more stable than untreated aggregate, but the appearance is the same. Stabilized finely graded aggregate paving is most successful on relatively flat areas and is not recommended for steep sections of pathway.
Stairs should integrate with the natural landscape and help people comfortably transition between spaces. They should also coordinate with and be designed to a similar level as adjacent paving and nearby buildings.

All settings:
- Use 5”–8” thick stone slabs for stair treads whenever possible for a more natural, and less engineered look

Urban ROS settings:
- Create stairways that are simple and elegant with broad, inviting and easy to navigate steps
- Incorporate natural materials—predominantly limestone—wherever possible
- Aim for a gentle tread (14” minimum tread and 5” maximum riser)
- Extend “arms” in the form of low cheek walls or paving to welcome people

- Create generous landings to break up long runs and to better integrate stairs with landforms
- Leave concrete stairs simple and unadorned, and tint them to match adjacent pavement
- Use stone cheek walls with concrete stairs wherever possible
- Integrate indirect lighting

Rural/Roaded Natural ROS settings:
- Create an organic look that appears hewn from the surroundings
- Use an edge of boulders, stones or other landscaping that appears unstructured and blends into the adjacent landscape
- Construct stairs with large-scale stones or blocks compatible with the local geology
- Use a curved layout, when possible, to provide a sense of mystery that leads the visitor on.
Walls

Intent

In general, walls should have a rustic character that complements the geology and colors of the Spring Mountains. In addition, the choice of material should be based on the wall’s visibility to visitors and also the ROS setting in which it resides.

Highly visible Urban or Rural sites should use higher quality natural-looking materials. Sites that are not as visible, such as administrative areas, or areas within Roaded Natural ROS setting can use less expensive materials and methods for building walls.

General Guidelines

- Design a rustic character into walls
- Determine whether the wall’s location calls for stone, or a less expensive material

Retaining/Seat Walls

- Construct retaining walls on a human scale and in scale with other built elements such as structures
- Integrate seating into retaining walls where appropriate
- Incorporate boulders into stacked stone walls to give them a more informal character
- Consider cultured stone products for retaining walls where budgets are limited

Seats should be incorporated into stone walls when possible and appropriate

Use stone as the main material for walls in high profile locations; ledgestone is the preferred configuration

Boulders make a dry-stacked stone wall look informal and rustic
Screening Walls

- Use screening walls only around maintenance yard, utilities and dumpster areas
- Consider first using vegetation to screen areas, with walls for this purpose used sparingly
- Select colors and materials that fade into the background
- At high-visibility sites, incorporate design elements/art
- Limit screening walls to a 5-foot height, in general
Dry-stack stone walls are recommended for retaining walls 4 feet high and under, in high visibility locations where their craftsmanship can be appreciated. Walls should be composed of generally rectangular stones of varying sizes laid in a rustic manner. The stone should be sourced in conjunction with the stone for pavements and wall veneer stone so all configurations match in color and texture.
Stone Faced Concrete Walls

Stone faced reinforced concrete walls are recommended for high visibility areas requiring structural walls for seating, slope retaining, or another supporting function such as piers for shelters. Random ashlar with natural faces and no visible sawn edges is desirable. Where a seat wall is desired, a wide precast concrete coping with integral buff color can cap the wall.

Cultured Stone Walls

Cultured stone is a concrete veneer product designed to replicate stonework. These products, which are cast in molds, are manufactured in a variety of texture, color, and pattern combinations. Cultured stone may be appropriate for some retaining walls or sign bases in order to limit construction costs and facilitate repair. However, because cultured stone often results in an artificial appearance, it should only be used where budgets are severely limited, and preferably in areas of low visibility such as administrative areas or maintenance yards.
Building from the Earth

Walls (continued)

**Modular “Keystone” Retaining**

Modular retaining walls may be appropriate for Urban ROS settings, but they may also be used in less visible locations such as administrative areas and Roaded Natural ROS settings. The wall’s texture, color and shape should blend with the landscape.

**Screening**

Modular screen walls may be used within utilitarian areas such as administrative areas, but may also be appropriate for highly visible Urban ROS settings. These walls are engineered to provide maximum screening height with minimum width.

**Concrete**

Poured concrete screen walls are recommended for areas that have some visibility to visitors but are away from a landscape focal point.

This type of wall should be distinctively textured to relate to the Spring Mountains landscape. Methods of achieving the desired texture include using larger sizes and proportions of aggregate, using a very dry mix, and vibrating the mix minimally so that contact with the formwork is irregular and bands of aggregate remain suspended in patterns. This is unconventional concrete work and will take a flexible concrete crew and some practice to replicate consistently.
Walls (continued)

**Rammed Earth**

Rammed earth walls are recommended for highly visible areas where their unique layer patterning can be appreciated and their design flexibility utilized. Although useful for screening, they are interesting and decorative in their own right and are generally not strictly utilitarian.
Fences, Rails and Safety Barriers

Fences, railings and barriers used for safety purposes should be attractive and feel permanent. They are a unifying element that help direct pedestrians and provide safety from steep drop-offs and vehicular traffic. They also provide containment as in the case of using a fence to corral horses.

- Coordinate fences and guard/Rails with materials, textures and colors in the landscape
- In Urban and Rural ROS settings make sure guardrails meet International Building Code:
  - Use a continuous, grippable surface free of sharp edges and other abrasive elements
  - When used as a safety barrier, the guardrail must be at least 42 inches high and not allow a 4-inch sphere to pass through
- In Roaded Natural ROS settings use simple guardrails or other edge protection at drop-offs:
- Natural barriers such as boulders can help maintain the site’s rustic character
- Use simple but permanent feeling fences to help guide visitors along safe pedestrian routes
- Keep fences low scale and minimize their visual intrusion into the landscape
- In general, use a two railing height fence design
- Select materials that create a rustic quality, weather naturally and need a minimum of maintenance

Wood post and rail fencing is effective for directing pedestrians in Rural and Roaded Natural ROS settings

Boulders can be used as edge protection within Roaded Natural ROS settings
**Fences, Rails and Safety Barriers (continued)**

- Install substantial pedestrian barriers to protect them from zones of high traffic risk
  - Incorporate at least a two-foot spatial barrier (median) between pedestrians and traffic
  - Use a combination of curbs, fencing, boulders and plants to emphasize this barrier
  - This barrier should be trip-resistant at pedestrian crossings

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**Fences/Rails/Safety Barrier Materials**

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<th>ROS</th>
<th>Application</th>
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<tbody>
<tr>
<td><strong>Fences/Rails/Safety Barrier Materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modular Steel Panel Fence</td>
<td>● ●</td>
<td>✦ ✦ ✦</td>
</tr>
<tr>
<td>Steel Pipe Rail Fence</td>
<td>● ●</td>
<td>✦</td>
</tr>
<tr>
<td>Post/Rail Fence</td>
<td>● ●</td>
<td>✦ ✦ ✦</td>
</tr>
<tr>
<td>Natural (Boulder) Barrier</td>
<td>●</td>
<td>✦ ✦</td>
</tr>
<tr>
<td>Median/Plantings/Curbs</td>
<td>●</td>
<td>❌ ❌ ❌</td>
</tr>
</tbody>
</table>

*Boulders can provide a barrier to protect pedestrians from traffic*
**Fences, Rails and Safety Barriers (continued)**

**Modular Steel Panel Fence**

A modular steel panel fence and railing system is recommended to provide consistent, high quality pedestrian barriers in highest use, most developed areas.

Choose a fence and rail system with a clean, contemporary appearance, yet is simple enough to look appropriate in a natural setting if colored sympathetically.

**Steel Pipe Rail Fence**

For Roaded Natural ROS settings where fencing or railing is required but an impermeable barrier is not, steel pipe rail fence is recommended.

Typically fabricated from 1 1/2” OD (nominal) schedule 40 pipe and welded in a double rail configuration, this is a very practical, simple and durable fence. To integrate the steel pipe rail fence with the other guideline recommendations, it should be powder coated or painted pale green, RAL 6021 or equivalent.
**Seating — Benches**

**Intent**

Seating is a way of suggesting that the visitor rest and be comfortable in the Spring Mountains.

- Use inviting bench designs with materials and contours that make sitting comfortable
- Blend seating seamlessly into the surrounding environment
- Place seating in such a way that it always seems to be where someone is looking for it
- Carefully detail all benches
- Design/buy benches with the same long horizontal design elements found elsewhere
- Use durable and consistent materials, and preferably those available nearby (stone, concrete, wood)
- Make seat surface between 17” and 19” high
- Provide an armrest and back on at least half of all benches

Seating may be a gathering or meeting point. It may also be a place of rest along a walk or for contemplation of a view.

- Locate seating:
  - With shelter from sun and wind
  - Within sight of pleasant foreground and distant views
  - Out of major circulation routes
  - Adjacent to other site amenities
  - Where people want to sit (e.g., overlooks, meeting areas, transit stops, near refreshments and at trailheads)

**In Urban ROS settings, benches may be custom designed using appropriate stone or artfully-poured concrete**

At least 50% should include an armrest and a back.

**Rural ROS settings will most likely use pre-fabricated products, such as this powder-coated steel bench at Fletcher View Campground**

*Highly-visible Urban ROS settings may include wooden or plastic-lumber benches, as these areas are less prone to vandalism*
Seating — Benches (continued)

Prefabricated Benches

Prefabricated benches should be used for smaller and less prominent sites that do not require custom designs, such as transit stops.

While steel is the most practical and durable material for a bench frame, it is rarely comfortable to sit on as it is nearly always too hot or too cold, and it often retains condensation when everything around is dry.

The recommended bench is substantial and comfortable, particularly with recycled plastic lumber slats. Metal mesh panels are the other recommended alternative.
**Seating — Group**

Group seating areas can combine many different landscape and site improvements. Typically these areas are used for small lectures, entertainment and as virtual classrooms in an outdoor setting. They also provide space for informal group picnics and small community groups to gather.

For the most part, group seating will be custom designed to fit its setting and intended use, and located within the Urban and Rural ROS settings.

- Vary seating size and formality to accommodate the area’s projected uses
- When possible, use natural topography to create seating “terraces”
- Orient seating towards views and points of interest
- Allow for multiple functions including lectures, K-12 class gathering areas, films and perhaps small performances
Sign Bases

Intent

The Forest Service has detailed guidelines for facility signage, which specify the colors, dimensions and fonts of the signs. Therefore, these guidelines only deal with sign bases.

- Create durable bases that reduce the need for long-term maintenance
- Use sign bases as a unifying design element, and construct them from stone or corten steel
- Use wood for accents rather than as a primary material
- Determine scale, design and material based on the function of the sign
- Generally minimize the visibility of grout in stone bases to provide a dry-stacked appearance
- Create shed roofs with adequate overhangs on clustered signs to shelter visitors from the elements
Sign Bases (continued)

Sample Designs

Sign bases should reflect the Spring Mountains materials palette, using primarily a combination of:

- Corten steel and ledgestone faced concrete, or
- Corten steel and rammed earth/soilcrete

Design will respond to the ROS setting. Sign bases for busy urban areas such as ski resorts or the Kyle Canyon “Village” may exhibit more complex design and feature prominent use of corten steel. Sign bases will be simpler in less developed areas such as trailheads or campgrounds in Roaded Natural settings. In these places, designs may employ more traditional materials including wooden beams or concrete.

Several schematic site identification sign base designs follow. These can be adjusted to the size of the site that they are identifying.
**Sign Bases (continued)**

**Rural or Roaded Natural Settings**

- Kyle Canyon Campground
  - SPRING MOUNTAIN National Recreation Area
  - Heavy, Wood Posts or Corten Steel

**All ROS Settings**

- Sawmill Trailhead
  - SPRING MOUNTAIN National Recreation Area
  - Corten Steel Piers
  - Corten Steel or Reinforced Concrete Column
  - Stone Veneer, preferably Ledgestone Base
  - Corten Steel Pipe Supports
  - Ledgestone or Rammed Earth Base
**Shade Shelters**

**Intent**
Shelters include three sided structures for shade and protection from the elements. In the hot dry environment of the Spring Mountains, shade is essential for comfort many months of the year.

- Create a unified appearance with surrounding architecture and landscape materials by using wood, stone and steel
- Use shed roofs to repeat the horizontal lines of the surrounding landscape
- Build substantial enough in scale so each shelter feels grounded and a part of the larger landscape
- Provide filtered to dense shade where waits may be lengthy
- Balance the proportions of materials so no one part feels too heavy
- Make shelter bases similar to sign bases in both design and materials
- Size shelters according to the amount of use they receive

Repeat site materials and structural form in shade structures, a necessary site feature in the desert.
Shade Shelters (continued)

Prefabricated Shelters

High Desert Zone

High Desert shelters are primarily for shade. An open lattice or louvered roof design is recommended to block the sun without absorbing and trapping heat. Choose a shelter that fits aesthetically with the High Desert setting.

Transition and Forested Zones

Shelters within both the Transition and Forested zones need to protect users from rain and/or snow because they are wetter and higher than the High Desert. Transition zone shelters have the added requirement that they provide protection from summer sun.

A shelter that will be appropriate for these zones will feature a simple, clean design with a roof of gentle pitch.

(see Appendix A.4 for explanation of colors and images)
Art

Art is one way of engaging and expanding the visitor experience. Art should relate to the site through use of materials, and should help interpret the Spring Mountains' unique characteristics.

- Provide areas of interest and play to children
- Use art to educate visitors about different elements of the National Recreation Area
- Integrate art in such a way that it enhances the visitor experience without overpowering the natural landscape
- Place art in communal locations that can generate discussion or awareness of the Spring Mountains
- Provide art elements that are touchable and interactive
- Consult and collaborate with the Southern Paiute tribes when using American Indian images in ornamentation

Art can add interest, educational value and areas of informal play.
# A.1 LEED Criteria/Checklist

## LEED-NC Version 2.2 Registered Project Checklist

<table>
<thead>
<tr>
<th>Sustainable Sites</th>
<th>14 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td>Prereq 1</td>
<td>Construction Activity Pollution Prevention</td>
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<tr>
<td>Credit 1</td>
<td>Site Selection</td>
</tr>
<tr>
<td>Credit 2</td>
<td>Development Density &amp; Community Connectivity</td>
</tr>
<tr>
<td>Credit 3</td>
<td>Brownfield Redevelopment</td>
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<td>Credit 4.1</td>
<td>Alternative Transportation, Public Transportation Access</td>
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<td>Credit 4.2</td>
<td>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</td>
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<tr>
<td>Credit 4.3</td>
<td>Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles</td>
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<td>Credit 4.4</td>
<td>Alternative Transportation, Parking Capacity</td>
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<tr>
<td>Credit 5.1</td>
<td>Site Development, Protect of Restore Habitat</td>
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<td>Credit 5.2</td>
<td>Site Development, Maximize Open Space</td>
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<td>Stormwater Design, Quantity Control</td>
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<td>Credit 6.2</td>
<td>Stormwater Design, Quality Control</td>
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<tr>
<td>Credit 7.1</td>
<td>Heat Island Effect, Non-Roof</td>
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<td>Credit 7.2</td>
<td>Heat Island Effect, Roof</td>
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<tr>
<td>Credit 8</td>
<td>Light Pollution Reduction</td>
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</table>

## Water Efficiency | 5 Points

| Credit 1.1 | Water Efficient Landscaping, Reduce by 50% | 1 |
| Credit 1.2 | Water Efficient Landscaping, No Potable Use or No Irrigation | 1 |
| Credit 2 | Innovative Wastewater Technologies | 1 |
| Credit 3.1 | Water Use Reduction, 20% Reduction | 1 |
| Credit 3.2 | Water Use Reduction, 30% Reduction | 1 |
### LEED Criteria/Checklist (continued)

#### Energy & Atmosphere

<table>
<thead>
<tr>
<th>No.</th>
<th>Requirement</th>
<th>Points</th>
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<tbody>
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<td>Fundamental Commissioning of the Building Energy Systems</td>
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<tr>
<td>Y</td>
<td>Minimum Energy Performance</td>
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<tr>
<td>Y</td>
<td>Fundamental Refrigerant Management</td>
<td>Required</td>
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<td>Optimize Energy Performance</td>
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<td>On-Site Renewable Energy</td>
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<td>Y</td>
<td>Enhanced Commissioning</td>
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<tr>
<td>Y</td>
<td>Enhanced Refrigerant Management</td>
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<tr>
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<td>Measurement &amp; Verification</td>
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<td>Green Power</td>
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#### Materials & Resources

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<td>Y</td>
<td>Storage &amp; Collection of Recyclables</td>
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<td>Building Reuse, Maintain 75% of Existing Walls, Floors &amp; Roof</td>
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<td>Building Reuse, Maintain 50% of Interior Non-Structural Elements</td>
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<td>Construction Waste Management, Divert 50% from Disposal</td>
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<td>Construction Waste Management, Divert 75% from Disposal</td>
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<td>Materials Reuse, 5%</td>
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<td>Materials Reuse, 10%</td>
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<tr>
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<td>Recycled Content, 20% (post-consumer + ½ pre-consumer)</td>
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<tr>
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<td>Regional Materials, 10% Extracted, Processed &amp; Manufactured Regionally</td>
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<tr>
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<td>Regional Materials, 20% Extracted, Processed &amp; Manufactured Regionally</td>
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<td>Y</td>
<td>Rapidly Renewable Materials</td>
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<td>Certified Wood</td>
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### LEED Criteria/Checklist (continued)

#### Indoor Environmental Quality

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<th>Requirement</th>
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<tr>
<td>Prereq 1</td>
<td>Minimum IAQ Performance</td>
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<tr>
<td>Prereq 2</td>
<td>Environmental Tobacco Smoke (ETS) Control</td>
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<td>Credit 1</td>
<td>Outdoor Air Delivery Monitoring</td>
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<tr>
<td>Credit 2</td>
<td>Increased Ventilation</td>
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<tr>
<td>Credit 3.1</td>
<td>Construction IAQ Management Plan, During Construction</td>
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<tr>
<td>Credit 3.2</td>
<td>Construction IAQ Management Plan, Before Occupancy</td>
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<tr>
<td>Credit 4.1</td>
<td>Low-Emitting Materials, Adhesives &amp; Sealants</td>
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<tr>
<td>Credit 4.2</td>
<td>Low-Emitting Materials, Paints &amp; Coatings</td>
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<tr>
<td>Credit 4.3</td>
<td>Low-Emitting Materials, Carpet Systems</td>
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<td>Credit 4.4</td>
<td>Low-Emitting Materials, Composite Wood &amp; Agrifiber Products</td>
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<tr>
<td>Credit 5</td>
<td>Indoor Chemical &amp; Pollutant Source Control</td>
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<tr>
<td>Credit 6.1</td>
<td>Controllability of Systems, Lighting</td>
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<tr>
<td>Credit 6.2</td>
<td>Controllability of Systems, Thermal Comfort</td>
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<td>Credit 7.1</td>
<td>Thermal Comfort, Design</td>
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<td>Credit 7.2</td>
<td>Thermal Comfort, Verification</td>
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<tr>
<td>Credit 8.1</td>
<td>Daylight &amp; Views, Daylight 75% of Spaces</td>
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<tr>
<td>Credit 8.2</td>
<td>Daylight &amp; Views, Views for 90% of Spaces</td>
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</table>

#### Innovation & Design Process

| Credit 1.1 | Innovation in Design: Provide Specific Title                               | 1      |
| Credit 1.2 | Innovation in Design: Provide Specific Title                               | 1      |
| Credit 1.3 | Innovation in Design: Provide Specific Title                               | 1      |
| Credit 1.4 | Innovation in Design: Provide Specific Title                               | 1      |
| Credit 2   | LEED® Accredited Professional                                              | 1      |

#### Project Totals (pre-certification estimates)

Certified 26-32 points  Silver 33-38 points  Gold 39-51 points  Platinum 52-69 points
**A.2 Light**

**Light**

The use of light in the new facility should intrigue the visitor, peaking curiosity and leading one through the architecture. The lighting should promote awareness of the seasonal and day/night cycle as well as enhancing the functions of the building. All areas of the facility should have access to natural light. At night the facility should feel secure, yet the lighting should be respect the dark sky.

The goals for exterior lighting should be discretion and subtlety. Illuminate only what needs to be lit for safety between buildings and parking. In general, provide lighting only where normal night use, safety, security, and/or accessibility are essential, such as building entrances/exits, steps or changes in elevation and parking areas adjacent to night activity centers. All exterior light fixtures should be shielded with sharp cutoffs (dark sky friendly). Avoid floodlights, lanterns, post top globes, and any other luminaire that emits light other than downward within a 60-degree cone. As a general rule, designs should prevent viewing the lamp or a bright lens or reflector within 2 mounting heights of the luminaire, and luminaires should not be mounted any higher than 20 feet.

Landscape lighting, when used, should be equipped with shields to prevent obtrusive light. Preserving the night darkness is crucial to the overall pursuit of preserving nature and its enjoyment in the NRA. The nocturnal environment is an important part of the visitor experience. Exercise care with interior lighting to prevent light spill from windows onto surrounding spaces. The interior light source should not be seen from afar. Light fixtures in parking areas should locate entrances to the parking area and the visitor’s path from the parking area to the destination. The goal is not to illuminate the entire parking area but to announce entrances, and achieve safety in movement. It is important that the source of all lighting be shielded from view. The intensity of illumination should not be a distraction from the enjoyment of night in the NRA.

Lighting systems should be designed to be attractive and consistent with the architecture, preferably innocuous. Avoid strongly designed luminaires and seek timelessness in style and mounting. Locate lighting systems where they will suffer minimum damage. Consider snow and its removal in determining lighting designs and mounting heights. Lighting should embrace the state of the art energy efficient lamp sources. Use the lowest possible wattage, energy efficient luminaire for each application. Employ compact fluorescent and low wattage HID lamps with a minimum of other sources. Lamps should be less than 100 watts, and as often as possible 50 or less. Where HID lamps are needed, 3000 K metal halide lamps are strongly recommended in public activity areas. Compact fluorescent lamps should be used as much as possible, using low temperature ballasts and amalgam lamps to ensure winter operation. Color temperature of all light sources should be 2,700 – 3,000K.
Building from the Earth

- Integration of daylighting to balance artificial lighting and also create a seamless exterior/interior transition
- Lighting systems should be integrated into the building

- Create a balance of natural light and artificial light
Building from the Earth

- Lighting fixture should be designed to be attractive and consistent with the architecture, preferably innocuous
All exterior light fixtures should be shielded with sharp cutoffs.
A.3 Potential Stone Suppliers

**Arizona Buff Sandstone**

American Stone  
3616 Spring Mtn. Rd.  
Las Vegas, NV  
702.876.6749

Apache Stone & Supply  
3900 E. Cheyenne Ave.  
Las Vegas, NV  
702.651.0001

**Quartzite (Gold/Buff)** from Rainbow Quarries in Goodsprings, NV  
Las Vegas Rock  
11635 Bermuda Road  
Las Vegas, NV  
702.791.7625

**Garden City Limestone (Buff and Gray); Frontier Sandstone (Buff); Many Other Types of Stone**

Select Stone  
262 Penny Lane  
Gallatin Gateway, MT 59730  
888.237.1000

---

*Arizona Buff Sandstone is available in many forms, such as boulders, slabs, ledgestone, and flagstone*

*Quartzite (Gold/Buff) is a locally quarried stone that could be useful in many situations*

*Garden City Limestone is processed into both sawn blocks and rough blocks*
A.4 Potential Products or Specifications

Paving

Colored Concrete
Possible Admixture: San Diego Buff (Davis Color #5237) adjusted for site colors

Unit Pavers
Manufacturer: Basalite Concrete Products
Product Name: Rima
Pattern: Running Bond
Color: Buff, coordinated with adjacent surfaces

Unit Pavers - Pedestrian-only Areas
Manufacturer: Basalite Concrete Products
Product Name: Cityscape, 6” x 12”
Pattern: Herringbone or Running Bond
Color: Carmel

Colored Asphalt/Rustic Pavement
Manufacturer: Asphacolor Corp.
Product Name: Architectural Asphalt, Integral Hot Mix Pavement
Color: Autumn

Emulsion Stabilized Soil Pavement
Commercially available stabilizers include:
- NaturalPave XL by Soil Stabilization Products
- M10plus50 by Enviroseal
- Resinpave by ARR-MAZ Products
- Soil-Sement by Midwest Industrial Supply

Walls

Cultured Stone
Manufacturer: Cultured Stone®
Product Name: Bucks County, Southern Ledgestone

Modular Retaining Walls
Manufacturer: Keystone Retaining Wall Systems
Product Name: Classic series
Configuration: Straight-faced, split-face block with standard cap
Color: Tan

Modular Screening Wall
Manufacturer: Basalite Concrete Products
Product Name: Proto II Wall System
Configuration: Straight-faced, split-face block with bevel cap
Color: Tan

Concrete Wall
Internal Color: San Diego Buff (Davis Color #5237), adjusted for site color

Fences, Rails, and Safety Barriers

Modular Steel Panel Fence
Manufacturer: Ametco
Product Name: Orsogrill Stadium Mesh
Configuration: 1-1/2” O.D. nominal round steel pipe top rail and handrail if needed
Color/Finish: Pale Green (RAL 6021) powdercoat
A.4 Potential Products or Specifications (continued)

Prefabricated Features/Structures

Prefabricated Benches
Manufacturer: Landscape Forms
Product Name: Potoskey Bench, Quad Support
Configurations: Backed with armrest or backless with armrest
Seating Surface: Perforated Metal, or Polysite slats (recycled HDPE also known as recycled plastic lumber)
Color: Metal Surfaces - “Stone,” which is dark tan/gray; Polysite slats - “Bark,” a tan

Prefabricated Shade Shelters
Manufacturer: Poligon Park Architecture
Product Name: High Desert - Santa Fe Trellis; Transition/Forest - REK 24 Shelter
Colors:
High Desert/Transition
  Posts - Surrey Beige,
  Roof - Patina Green
Forest
  Posts - Tudor Brown
  Roof - Evergreen
A.5 SMNRA BEIG Implementation (including Variance Review Process)

All new construction, reconstruction and special use improvements will be reviewed by the Forest Landscape Architect to determine compliance with the Spring Mountains NRA Built Environment Image Guide (SMNRA BEIG). Other levels of review may be required per existing authorities identified in Forest Service Manual/Forest Service Handbook for the type of project contemplated. The Forest Landscape Architect will provide a written determination for all projects requiring Regional Office review/approvals regarding submittal compliance with SMNRA BEIG guidelines. Projects that require approval from the Director of Engineering will not be forwarded to the Regional Office (RO) until the proposal has met the intent of the BEIG or a variance has been recommended and approved.

Maintenance projects that include replacement of site furniture or features that no longer can be replaced in-kind shall be reviewed by the District/Forest Landscape Architect for compliance with the Spring Mountains NRA Built Environment Image Guide.

When it has been determined by the Forest Landscape Architect that a project is non-compliant, a request for variance will be necessary. The following process will be followed:

Variance Review and Approval Process

I. PROPOSAL

1. The proponent of a design variance must submit two copies of a letter requesting a variance with supporting documents (listed below) and descriptive narrative (if it has not already been submitted.) The Proponent must describe their rational for how they followed the SMNRA BEIG, and/or in what area(s) they need to vary and why.

Supporting documents:

   a. Drawings
   b. Specifications
   c. Reports/Studies
   d. Illustrations
   e. Artworks
   f. Photographs (current condition, both of the landscape and architecture as appropriate to illustrate point)
   g. Others

2. Upon receipt of the request, the Forest Landscape Architect will determine the appropriate review level. Members of the review groups are described below.

II. REVIEW

A. Basic Review Group

   a. Reviews non-complex or non-controversial issues (e.g., maintenance, replacements, color selections, etc.).

   1. The group will consist of the SMNRA Zone Engineer, SMNRA Landscape Architect, Forest Landscape Architect and SMNRA RELM staff officer.

B. Elevated Review Committee

   a. Reviews complex and controversial issues. Examples of elevated reviews are new construction, special use construction, materials, artwork, and architectural features.

   1. The committee will include the Basic Review Group and the Regional Landscape Architect.
3. The appropriate group evaluates the proposal and makes a recommendation to the line officer. These recommendations will be to:
   a. Recommend approval of the proposal as designed;
   b. Recommend approval with modifications;
   c. Recommend the variance not be approved;
   d. Propose an alternate design that complies with the BEIG; or
   e. Other.

III. RECOMMENDATION AND APPROVAL

A. The Basic Review Group has ten working days to provide a written recommendation for Line Officer decision.

B. The Elevated Review Committee has twenty working days to provide a written recommendation for Line Officer decision.