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Cathedral Rock Picnic Area Rehabilitation Project

Environmental Assessment

Spring Mountains National Recreation Area
Humboldt Toiyabe National Forest
Clark County, Nevada

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Table of Contents

Introduction 1
Project Location 1
Purpose and Need for Action 1
Purpose 1
Need for Action 3
Existing Conditions in the Project Area 3
Desired Future Conditions 5
Modified Proposed Action 5
Legal Authorization and Policy Framework 6
Analysis Documents Used For this Assessment 7
Decision Framework 7
Public Involvement 7
Issues 8
Alternatives, Including the Proposed Action 8
Introduction 8
Alternative Development 8
Alternatives Considered but Eliminated From Detailed Study 9
Alternatives Studied in Detail 9
Alternative 1 9
Alternative 2 - Proposed Action (Modified) 9
Alternative 3 - Increased Picnicking 10
Elements Common to Alternatives 2 and 3 14
Design Criteria Common to Alternatives 2 and 3 16
Comparison of Environmental Consequences 16
Environmental Consequences 23
Recreation 23
Heritage Resources 29
Watershed and Soils 30
Wildlife and Plants 32
Species Analyzed 32
Alternative 1 33
Alternatives 2 and 3 33
Effects Summary for Wildlife and Plant Species Analyzed in Detail 37
Silviculture / Vegetation Management 49
Environmental Justice in Minority Populations and Low-Income Populations 52
Consultation and Coordination 53
Interdisciplinary Team Members 53
Federal, State and Local Agencies 54
Tribes 54
Appendix A - Public Comments 55
Appendix B - Project Design Criteria 63
Appendix C - Past, Present and Reasonably Foreseeable Future Activities 68

List of Tables

Table 1. Key Issue 8
Table 2. Alternatives 2 and 3 - change in PAOTs 14
Table 3. Comparison between alternatives of changes to PAOTs and infrastructure 17
Table 4. Comparison of effects by alternative 18

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3 38
Table 6. Summary of plant species analyzed in detail and determination of effects for Alternatives 2 and 3 45
Table 7. Summary of written scoping comments received for the Cathedral Rock Picnic Area Rehabilitation Project 55
Table 8. Project Design Criteria 63

List of Figures

Figure 1. Cathedral Rock Picnic Area, existing condition 2
Figure 2. Buildings destroyed by an avalanche in the Cathedral Rock Picnic Area 3
Figure 3. Facilities are outdated and do not meet accessibility standards 4
Figure 4. Illegally parked vehicles due to lack of adequate parking at the Cathedral Rock Trailhead 4
Figure 5. Alternative 2 (modified proposed action) 12
Figure 6. Alternative 3 (increased picnicking) 13

Introduction

The USDA Forest Service has prepared this environmental assessment (EA) to evaluate the potential effects of renovation and reconstruction of the Cathedral Rock Picnic Area and Cathedral Rock Trailhead, and to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact (40 CFR 1508.9(a)(1)). This EA has been prepared pursuant to the National Environmental Policy Act (NEPA), according to the format established by the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Part 1500) and Forest Service Handbook 1909.15—Environmental Policy and Procedures Handbook.

The Cathedral Rock Picnic Area (picnic site) and adjacent Lower Cathedral Rock Trailhead parking and restroom (trailhead) on State Highway 157 are the most heavily visited picnic site and trailhead in the Spring Mountains National Recreation Area. The trailhead parking is designed to accommodate 12 vehicles. The picnic site was originally constructed as a campground in 1930, and was reconstructed as a picnic site in 1968 (Figure 1).

The picnic site consists of 74 single unit picnic units, a 60-person capacity group picnic unit, and a 75-person capacity group picnic site. All units have picnic tables and pedestal grills. One vault restroom and three flush restrooms are currently in the picnic site. Two trailheads in the picnic site - South Loop Trailhead and the Upper Cathedral Rock Trailhead - are accessed from an 8-car parking lot within the picnic site.

The Forest Service has proposed to reduce traffic congestion, and reconstruct facilities to improve safety and accessibility and avoid future damage in avalanche paths in the Cathedral Rock Picnic Area. If the decision is made to proceed with this proposal, project activities would cause picnic area to close in fall of 2009 with construction lasting for up to two years.

Project Location

The project area is located in the Spring Mountains National Recreation Area on the Toiyabe National Forest. More specifically, the project area is located at the end of State Highway 157 in Kyle Canyon above the town of Mount Charleston, Nevada, in the North ½ of Section 36, Township 19 S., Range 56 E., MDB&M, of Clark County, Nevada. The project area is approximately 35 acres in size.

Purpose and Need for Action

Purpose

The Deputy Forest Supervisor has determined a need to replace, renovate, and reconstruct facilities and infrastructure of the Cathedral Rock Picnic Area to better meet the existing and

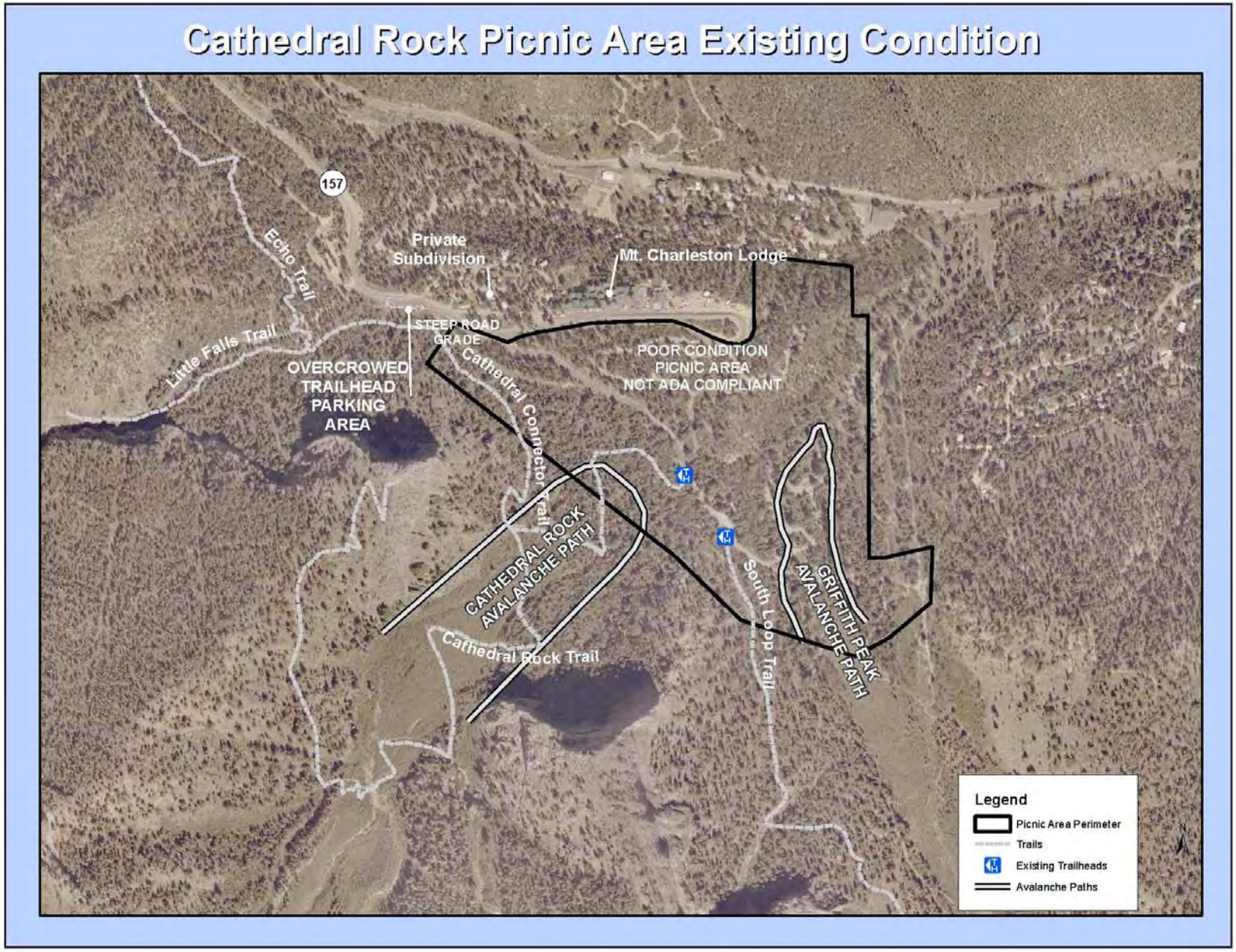

Figure 1. Cathedral Rock Picnic Area, existing condition

future recreation demand for trailhead parking in the Cathedral Rock area, and help protect and interpret the rich cultural and natural resources in the picnic site.

The project's purpose aligns with the goals and objectives designed to meet the desired future conditions for the Spring Mountains National Recreation Area, as outlined in the management direction in the *Toiyabe National Forest Land and Resource Management Plan* (USDA Forest Service 1986) and the *General Management Plan for the Spring Mountains National Recreation Area* (see Legal Authorization and Policy Framework on p. 6). Sections of the GMP that guide the project and define the desired future conditions can be found in the project record.

Need for Action

The proposed action is needed now because the picnic site was damaged and partially destroyed by an avalanche in 2005. There is a need for:

- improved safety and standards of facilities, and accessibility of picnic site buildings
- protection of investments by locating facilities out of avalanche paths
- reduced natural resource damage at the Cathedral Rock Picnic Area and existing Cathedral Rock Trailhead
- reduced traffic congestion at the upper end of State Highway 157 and increased parking capacity at trailheads and picnic units

Existing Conditions in the Project Area

The four existing restroom facilities are over 40 years old and show signs of heavy use. The sewer system consists of septic tanks and leach fields, which are about 40 years old and nearing the end of their operational life.

Currently, the Griffith Peak avalanche path terminates in the picnic site, and produces powerful avalanches capable of destroying all but the largest trees. In 2005, two restrooms and five picnic units were destroyed by the Griffith Peak avalanche in the southern portion of the picnic site (Figure 2).

Figure 2. Buildings destroyed by an avalanche in the Cathedral Rock Picnic Area

The picnic site and its furnishings are in a deteriorated condition due to age and high levels of use over time and do not meet facility condition standards, the SMNRA Built Environment Image Guidelines, or accessibility standards. Facilities at the site are

not currently accessible to persons with disabilities due to poor travelways with steep routes or steps, and tables and grills are not compliant with Forest Service Outdoor Accessibility Guidelines (Figure 3).

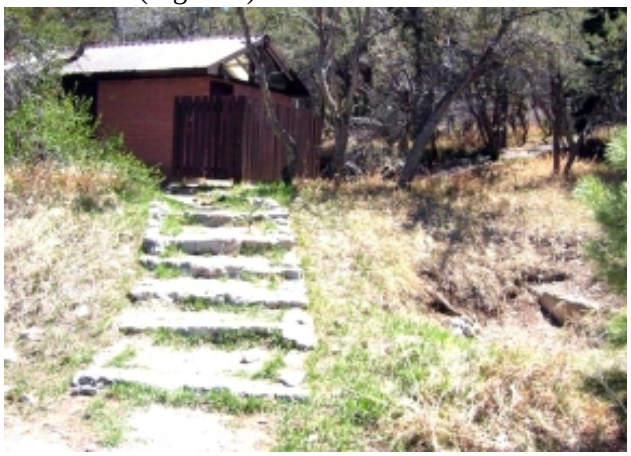

Figure 3. Facilities are outdated and do not meet accessibility standards

Where pathways from spurs to tables are not clearly defined, a maze of trails has resulted, contributing to loss of vegetation and associated erosion. User-created trails are numerous throughout the picnic site, causing resource damage.

Current picnic site facilities are inadequate to meet the existing vehicle use and parking levels. Parking spurs are inadequate for vehicles bigger than a compact car, and are too short for the current multiple-car use patterns. When large groups use units with small single parking spurs, vehicles often park on the surrounding vegetation. The group use area has two large group picnic units (a 60-person capacity group unit, and a 75-person capacity group unit) on the side of a steep slope with parking for 23 cars. Asphalt on the roads is generally in poor condition and is extensively deteriorated in some places. These conditions have resulted in a degradation of the area's natural resources.

Trailhead parking does not meet existing recreation use and causes traffic congestion problems. The Lower Cathedral Rock Trailhead (shown on Figure 1 as Overcrowded Trailhead Parking Area), located outside the picnic site, has parking to accommodate 12 vehicles. This popular trailhead parking area frequently attracts 50 to 60 vehicles at one time, resulting in illegal parking along State Highway 157 and on adjacent private property (Figure 4). Two trailheads in the picnic site – the South Loop Trailhead and the Upper Cathedral Rock Trailhead -provide access to Cathedral Rock Trail, Little Falls Trail, and the South Loop Trail of the Mount Charleston National Recreation Trail. These

Figure 4. Illegally parked vehicles due to lack of adequate parking at the Cathedral Rock Trailhead

trailheads are accessed from an 8-car parking lot within the picnic site. The existing layout of the Cathedral Rock Picnic Area is shown in Figure 1.

Vegetation in the project area is declining in several ways. In some areas, white fir trees are dense and in need of thinning to improve the health and reduce stress on the larger, older, and more desirable trees such as ponderosa pine. Trees are dying from bark beetles at higher than natural levels due to the amount of white fir in the area, and the ponderosa pine are also infested and at risk. In addition, understory hardwoods, shrubs and other vegetation are declining in vigor.

The Cathedral Rock Picnic Area is currently managed by a concessionaire.

Desired Future Conditions

This project is specifically aligned with the goals and objectives outlined in the SMNRA General Management Plan, an amendment to the *Toiyabe National Forest Land and Resource Management Plan* (referred to hereafter as the "Forest Plan") (USDA Forest Service USDA Forest Service 1986). The Forest Plan was amended to include the *General Management Plan for the Spring Mountains National Recreation Area* (referred to hereafter as the "SMNRA Management Plan") (USDA Forest Service 1996a), which supplements Forest-wide standards and guidelines found in the Forest Plan, replacing direction for management areas 11 and 12 found in the Forest Plan.

The Cathedral Rock Picnic Area would be a safe, comfortable and fully accessible (for persons with disabilities) picnic site where visitors can enjoy a high quality recreational experience in a forested setting. The picnic site would preserve the CCC theme in keeping with the 2007 SMNRA Built Environment Image guidelines. The recreation opportunity provided would be a roaded natural setting, and a transition from an urban experience to a more primitive experience. Trailheads would be safe and identifiable, providing adequate capacity for existing and future use, and would link to hiking trails with clear signs and information for users about safety, orientation, and the location of area facilities and features.

Forest stand conditions created within the site would maintain a viable forest resilient to recreation impacts, resistant to insect and disease outbreaks, emulating historic conditions, encouraging understory development of sensitive plants, and maintaining canopy and tree structure conducive to a recreational setting.

Modified Proposed Action

To meet the identified needs, the Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area proposes to rehabilitate the Cathedral Rock Picnic Area by removing and replacing all roads, utilities, restrooms and other infrastructure of the picnic site, as well as closing and rehabilitating the existing Lower Cathedral Rock Trailhead and parking on State Highway 157 in cooperation with Nevada Department of Transportation (NDOT). The Lower Cathedral Rock Trailhead parking area along State Highway 157 would remain open during

picnic site construction for continued parking and access to Cathedral Rock, South Loop and Little Fall Trails until trailhead parking for the new Cathedral Rock Overlook and South Loop Trailheads becomes available. The Modified Proposed Action is shown on Figure 5 and described in more detail in the Alternatives section.

Two new trailheads with adjacent trailhead parking are proposed. The Cathedral Rock Overlook Trailhead would provide trailhead parking for 68 cars and would include full trailhead facilities and a restroom with winterized design and utilities. The Cathedral Rock Overlook Trailhead and trailhead parking would replace the Lower Cathedral Rock Trailhead and parking on State Highway 157. The South Loop Trailhead would provide trailhead parking for 42 cars and would include full trailhead facilities and a restroom with electricity, sewer, and water. The Cathedral Rock, Little Falls and South Loop Trails could be accessed from these trailheads. It is important to note that a future trails project (Cathedral Rock Trails Project) is being planned with a different focus of trail improvement and realignment and creating loop trails, connector trails, amenities, and signs.

Other improvements include 8 accessible toilet facilities, approximately 46 fully accessible single-family picnic units, 11 double-family picnic units, approximately 202 parking spaces, and a nature trail. All new facilities would be designed to comply with the Spring Mountains National Recreation Area Built Environment Image Guidelines and Forest Service built environment design criteria. All activities would preserve and maintain the historic cultural features and construct new features in a manner that is compatible with the historic elements.

A Vegetation Management Plan has also been developed to identify the various vegetation types (stands) in the picnic site that are proposed to be treated, and will serve as a guide during project implementation (see Silviculture Report, Appendix H). The modified proposed action is described in detail as Alternative 2 on page 9.

The picnic site would be closed for approximately two years during construction. During construction, single picnic use would be directed to the Sawmill Trailhead and Old Mill Picnic Areas on State Highway 156 in upper Lee Canyon and group use would be directed to the 3 group units in the Foxtail Group Picnic Site on State Highway 156 in Lee Canyon.

Legal Authorization and Policy Framework

This project is proposed to make progress toward goals embodied by the *Toiyabe National Forest Land and Resource Management Plan* (referred to hereafter as the “Forest Plan”) and the General Management Plan for the Spring Mountains National Recreation Area (referred to hereafter as the “SMNRA Management Plan”). The Forest Plan was developed under authority of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), and regulations implementing NFMA. The Forest Plan was amended to include the SMNRA Management Plan, which supplements Forestwide standards and

guidelines found in the Forest Plan, replacing direction for management areas 11 and 12 found in the Forest Plan.

Additionally, this project is specifically aligned with the goals and objectives outlined in the SMNRA Management Plan. Proposed management activities also align with the goals and objectives of the Conservation Agreement for the Spring Mountains NRA (Conservation Agreement) and Clark County Multiple Species Habitat Conservation Plan (MSHCP). The Conservation Agreement and its species of concern are incorporated in the MSHCP as an appendix (U.S. Department of Agriculture 2003). More details are located in the project file.

Analysis Documents Used For this Assessment

This environmental assessment incorporates by reference analysis prepared in individual specialist reports. These reports and additional documentation may be found in the project planning record located at the Spring Mountains National Recreation Area, 4701 North Torrey Pines Drive, Las Vegas, Nevada, 89130; Phone (702) 515-5400. In addition, project information, maps, and specialist reports are posted on the Humboldt-Toiyabe National Forest website (Spring Mountains National Recreation Area) at: http://www.fs.fed.us/r4/htnf/projects/.

Decision Framework

The Deputy Forest Supervisor for the Humboldt-Toiyabe National Forests is the Deciding Officer for this proposed project. Based on the analysis documented in this EA, the Deciding Officer will determine whether to implement the renovation and reconstruction of the Cathedral Rock Picnic Area as proposed, select one alternative, or select a combination of alternatives.

Public Involvement

The proposal was listed as “Cathedral Rock Day Use Area Reconstruction EA” in the Fourth Quarter (July-September 2007) Humboldt-Toiyabe National Forest Schedule of Proposed Actions (SOPA). A scoping notice was published in the *Las Vegas-Review Journal* and *Las Vegas Sun* newspapers on August 24, 2007. A scoping notice describing the proposed action was also mailed to addresses on the Spring Mountains mailing list (project planning file). This list includes individuals, organizations, Tribal governments, and other agencies.

Southern Paiute tribal members were briefed on this project at a meeting in March 2008. Consultation with the U.S. Fish and Wildlife Service has been ongoing, and a biological assessment has been submitted for their review. In addition, internal review via a required Value Analysis was completed. A field trip requested by a private resident was conducted on September 4, 2007 to discuss the proposal with Spring Mountain National Recreation Area staff. There were also meetings with the concessionaire who currently manages the Cathedral Rock Picnic Area, the owners of the Mt. Charleston Hotel and the Mt Charleston Lodge, and an outfitter and guide who

is permitted to use the Cathedral Rock Picnic Area for sleigh rides. The Nevada Department of Transportation was also consulted.

To date, 10 scoping comments (in the form of letters or conversation records) have been received and are summarized in Appendix A.

Issues

The interdisciplinary team (IDT) met to derive issues from comments received during the scoping period. Key issues are defined as "unresolved conflicts about effects of the proposed action on the human environment, which therefore warrant consideration of one or more reasonable alternatives" (FSH 1909.15 § 41.2). One key issue was derived from public comments, which led to the development of Alternative 3 (see Table 1).

Table 1. Key Issue

Key Issue	Concern: Cause and Effect	Issue Determination
Use	The proposed action will reduce the amount of picnic use allowed in Cathedral Rock Picnics Area, which is not commensurate with public demand.	The proposed action allows for 184 persons at one time (PAOTs) picnicking, which is a decrease from the existing picnic use of 423 PAOTs. This issue will be addressed in Alternative 3, which increases the amount of picnicking PAOTs.

Alternatives, Including the Proposed Action

Introduction

This section describes and compares the alternatives considered by the Forest Service for the Cathedral Rock Picnic Area Rehabilitation Project. It includes a description and map of each alternative considered in detail. Alternatives are presented in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. This section also provides a description of those alternatives considered, but eliminated from detailed analysis.

Alternative Development

The National Environmental Policy Act (NEPA) directs the Forest Service to use an interdisciplinary approach that will ensure the integrated use of natural and social sciences and the environmental design arts (Sec. 102 [42 USC § 4332]).

The interdisciplinary team developed alternatives based on the purpose and need of the project, and the key issue identified earlier in this assessment. Forest Service management objectives are incorporated into alternatives by following standards and guidelines of the SMNRA Management Plan.

Alternatives Considered but Eliminated From Detailed Study

Federal agencies are required by the NEPA to rigorously explore and objectively evaluate a range of reasonable alternatives, and to briefly discuss the reasons for eliminating any alternatives that were not considered in detail (40 CFR 1502.14). The following alternatives were considered, but eliminated from detailed study as explained below.

Snow Play

There is a need for safe snow play areas on the Spring Mountain National Recreation Area due to the lack of adequate facilities or opportunities for visitors. The Cathedral Rock picnic site is currently used by visitors for snow play. Options were explored for snow play; however, due to site limitations including vegetation, topography and the existing avalanche paths, no safe opportunities for snow play or sledding were identified.

Enlarge Trailhead Parking Area on State Highway 157

The original proposal that was submitted as a Southern Nevada Public Lands Management Act (SNPLMA) nomination proposed to enlarge the existing Cathedral Rock Trailhead parking area on State Highway 157. This nomination included improving the existing restroom facilities at their current location. This proposal was dropped from consideration because it did not meet the purpose and need. Topography and species concerns would limit the extent of the enlargement; therefore, the proposal would not substantially reduce the parking congestion on State Highway 157. The demand for parking would continue to be greater than the available space, resulting in continued illegal parking on the highway.

Alternatives Studied in Detail

There are three (3) alternatives studied in detail for this analysis: Alternative 1 – No Action, Alternative 2 – the Modified Proposed Action, and Alternative 3 – an alternative that provides increased picnicking opportunities.

Alternative 1 - No Action

Under this alternative, current management plans would continue to guide management of the project area. No rehabilitation or other project activities would be implemented to accomplish the purpose and need for action or to meet project goals. Ongoing uses such as firewood gathering for campfires, and various recreation uses would continue to occur. Figure 1 is presented for the no action alternative.

Alternative 2 - Proposed Action (Modified)

This is the action proposed in the scoping notice dated August 24, 2007. However, the following elements were changed from the original proposed action: 1) the entrance road design has been modified (Figure 5); 2) specific nature trail locations are now provided (Figure 5); 3) a more detailed Vegetation Management Plan was developed (see Silviculture Report, Appendix H); and

4) design criteria has been modified for botany, wildlife and recreation, and added for watershed and heritage resources (Appendix B).The Forest Service proposes to renovate, replace, and reconstruct the facilities and infrastructure described below and shown in Figure 5.

1. Increase parking for hiking and move parking away from State Highway 157. Alternative 2 calculates the Persons At One Time (PAOT[1]) for the trailheads using the number of parking spaces and the PAOTs for picnicking using the number of picnic units. Table 2 summarizes these changes in PAOTs (see also Table 3).
2. Construct roads to current road and parking standards
    a. This layout incorporates a maximum of approximately 202 parking spaces. This number will be decreased when you factor in accessible stalls and site limitations.
    b. The alignment of the road would be consistent with much of the existing roadway. There would be approximately 1.65 miles of road.
    c. Provide about 110 designated trailhead parking spaces; 68 spaces for the Cathedral Rock Overlook Trailhead and 42 spaces for the South Loop Trailhead
    d. Provide about 92 designated picnic unit parking spaces; two parking spaces for each single-family picnic unit and four parking spaces for each double-family picnic unit.
3. Provide fully accessible site furniture in picnic units – about 46 units. (Note: Not all units would be fully accessible because of grade)
    a. Single-family units – 24 each with parking for two cars, one picnic table, and one cooking surface.
    b. Double-family units – 11 each with parking for four cars, two tables, and two fire grills. Some sites can be split into two single units. Double-family units would accommodate approximately 16 to 20 people per unit.
4. Provide eight accessible double-toilet facilities (8 buildings equaling a total of 16 stalls) with heat, lighting, potable water, and sewer hook-ups. A mix of flush and vault toilets would be used. Walking paths leading to all toilet facilities would comply with the Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG).
5. Provide two host sites at appropriate locations to facilitate efficient management of the site. Utilities at host sites may include electricity, telephone, potable water and sewer connections (see also item 9. under “Elements Common to Alternatives 2 and 3 below).

Alternative 3 - Increased Picnicking

This alternative is provided as another option and addresses the key issue regarding the need for additional picnicking facilities. This alternative is proposed with heavy emphasis on recreation

[1] PAOT- a recreation capacity measurement term indicating the number of people who can use a facility or area at one time (USDA Forest Service 1986).

development as described below and shown on Figure 6. Alternative 3 would include the following actions:

1. Increase hiking PAOT from 53 to 182, and picnicking PAOT from 423 to 552. Since the user can park anywhere in Alternative 3, parking was used as the PAOT limiting factor. Table 2 summarizes these changes in PAOTs (also see Table 3).
2. Construct roads to current road and parking standards
    a. This layout incorporates a maximum of approximately 294 parking spaces. This number would be decreased when you factor in accessible stalls and site limitations. There is no distinction between parking spaces for picnicking and trailhead use.
    b. The alignment of the road would be consistent with much of the existing roadway. There would be approximately 1.80 miles of road.
    c. Road modifications include a new exit road to improve safety and circulation, and changing roadways from one-way to two-way in some locations. All roads would be designed to Forest Service standards with inter-visible turnouts as required
    d. Of the 294 parking spaces, approximately 73 would be near the 2 proposed trailheads (Cathedral Rock Overlook and South Loop Trailheads), but would not be designated as “trailhead” parking spaces. Assuming 2.5 persons per car, this would provide for 182 hiking PAOTs (see Table 2).
3. Provide fully accessible site furniture in picnic units – about 103 units (Note: Not all sites would be fully accessible because of grade.)
    a. Single-family units – 94 each with one picnic table and one cooking surface (i.e., utility table and pedestal grill) per unit.
    b. Group units – 9 each with tables and grills to accommodate approximately 40 people per unit. The two existing group units would be modified including new site furniture, paths, and safety rails.
    c. Paths connecting units would comply with FSORAG. With the exception of three fully accessible units, all units would be walk-in with no designated parking space.
4. Provide four double, and six single accessible toilet facilities (10 buildings equaling a total of 14 stalls) with heat, lighting, potable water, and sewer. A mix of flush and vault toilets would be used. Walking paths leading to all toilet facilities would comply with FSORAG.
5. Provide three host sites at appropriate locations to facilitate efficient management of the site. Utilities at host sites may include electricity, telephone, potable water and sewer connections (see also item 9 under “Elements Common to Alternatives 2 and 3” below).

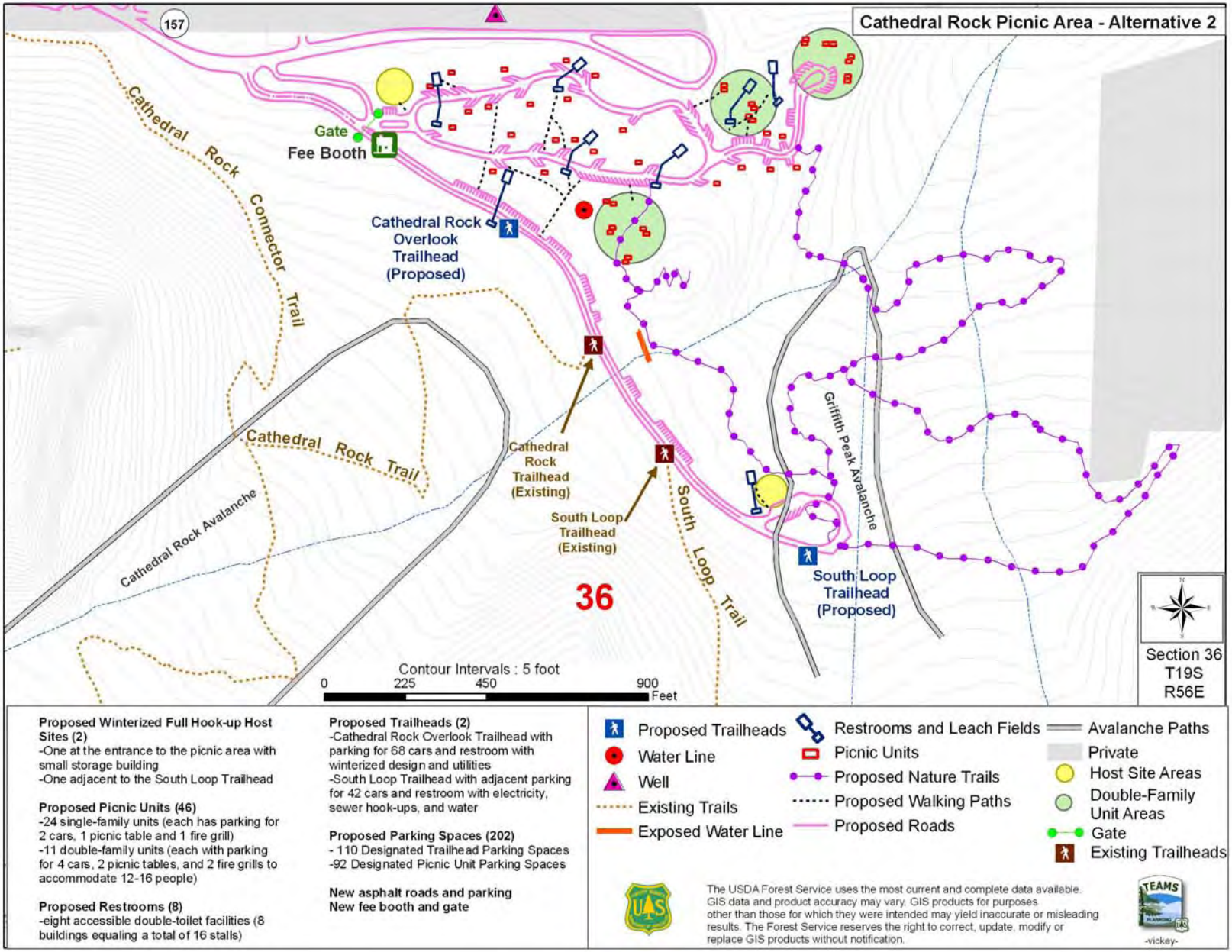

Figure 5. Alternative 2 (modified proposed action)

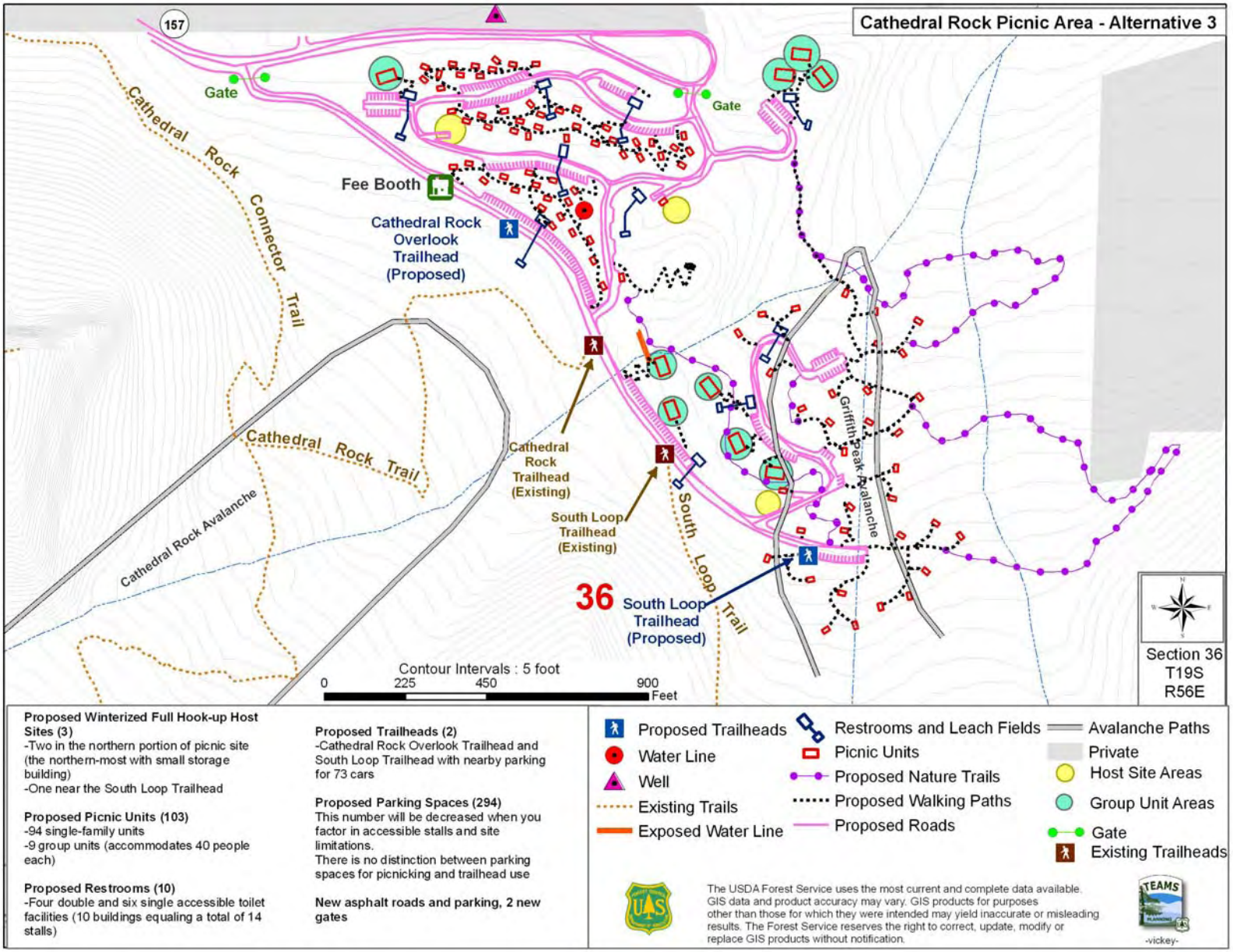

Figure 6. Alternative 3 (increased picnicking)

Table 2. Alternatives 2 and 3 - change in PAOTs

Alternative 2	Current Condition	PAOTs	Change
Hiking - PAOT	53	275 (2.5/car)	+ 222
Picnicking - PAOT	423	184 (4/site)	- 239
TOTAL	**476**	**459**	**-17**
Alternative 3	**Current Condition**	**PAOTs**	**Change**
Hiking- PAOT	53	182 (2.5/car)	+35
Picnicking - PAOT	423	552 (4/site)	+212
TOTAL	**476**	**734**	**247**

Elements Common to Alternatives 2 and 3

The following common elements apply to Alternatives 2 and 3:

1. Design all new facilities to comply with the SMNRA Built Environment Image Guidelines and FS built environment design criteria. Construct all site furniture and restroom buildings to be accessible and meet current accessibility standards. Renovate the picnic site in a similar style to the original CCC campground, considering historic precedents. In other words, the design should bring everything up to current standards, while incorporating historic elements into the design. One should have the feeling that they are in a convenient, but historic old picnic site constructed with great care using local natural resources.
2. Remove and replace all of the roads, utilities, restrooms and other infrastructure of the picnic site with the exception of identified historic elements (see Heritage Report).
3. Close and rehabilitate the existing Lower Cathedral Rock Trailhead and parking area on State Highway 157 in cooperation with Nevada Department of Transportation (NDOT).
4. Develop aboveground permanent facilities (i.e., restrooms) outside the existing and reasonably foreseeable Griffith Peak avalanche path.
5. Abandon the underground utilities including water lines and the sewer system in place. Comply with Clark County regulations for abandoning sewer systems.
6. Roads- Construct roads to current road and parking standards
   a. Provide for school bus parking and/or shuttle stop and turn-around.
   b. Realign entry grade to decrease steepness. Blasting may be needed to decrease the steepness of the entry grade.
   c. Provide pads for large dumpsters with accessibility for garbage trucks. Provide garbage cans at each picnic unit.
   d. Design for snow removal from the north portion of the Cathedral Rock Overlook Trailhead. Design for spring snow removal for the remainder of the trailhead and the picnic site to facilitate maintenance and opening.

   e. Install naturally appearing barriers to control parking.
   f. Design traffic flow and gate locations to maximize management options.
7. Provide utilities including telephone, electricity, water and sewer to the site and to facilities as described below.
   a. Water Facilities – Install a new winterized system, following roads where possible to minimize disturbance. Provide for system drains for winterization. Abandon the old system in place.
   b. Wastewater Facilities – Install septic tanks and leach fields. Use the best system and design for possible future sewer hook-up to municipal treatment system. All wastewater facilities would meet Nevada Division of Environmental Protection standards.
   c. Lighting – Provide a minimum of low-level safety and security lighting around the picnic site, at trailheads, and in restrooms.
8. Provide an accessible, full-winterized design entrance station (fee booth) along the entrance road with appropriate utilities, which may include telephone, heat, sewer, electricity, and water.
9. Provide the northern-most host site with a small storage building that can handle snow loads and meet SMNRA Built Environment Image Guidelines criteria.
10. Provide two new trailheads, both of which would provide access to the Cathedral Rock, Little Falls and South Loop Trails. The South Loop Trailhead would be closed in winter due to lack of demand and avalanche risk.
11. Develop and implement an environmental education theme and infrastructure for the site, interpreting the natural and cultural aspects of Cathedral Rock Picnic Area and its setting.
12. Fencing- Use fence where appropriate to manage users, and post signs at National Forest and private property boundaries.
13. Develop a nature trail system for the picnic site consisting of short loops and/or destination trails including one accessible trail loop (see Figures 5 and 6).
14. Develop and implement a Vegetation Management Plan addressing the forest and understory vegetation resources of the site (see Silviculture Report, Appendix H).
   a. Create forest stand conditions within the site that maintain a viable forest that is resilient to recreation impacts, resistant to insect and disease outbreaks, emulates historic stand conditions, encourages understory development of sensitive plants, and maintains canopy and tree structure conducive to a recreational setting. The plan would maintain large existing trees. White fir should be reduced and ponderosa pine encouraged. In addition, oak and mountain mahogany stands should be maintained but the understory should primarily favor mountain mahogany and ponderosa pine as tree species. The number of young trees should be reduced to minimize competition with larger trees for nutrients, moisture, sunlight, and space, while maintaining a species composition and age structure that allows for future recruitment of large

trees. Promote shrub and tree species in between picnic units and facilities for visual screening and sound attenuation between units.

15. Maintain suitability of the site for sensitive plants and butterfly host/nectar species by protecting existing populations and encouraging plant colonization in disturbed areas.
16. Implement weed management strategies (FSM 2000 – Noxious Weed Management 2080).
17. Disturbance-dependent vegetation communities will continue to exist in avalanche paths.

Design Criteria Common to Alternatives 2 and 3

All actions under Alternatives 2 and 3 include resource-specific design criteria that guide the manner in which the actions are implemented to minimize or reduce anticipated effects. After a careful review of Alternatives 2 and 3, design criteria has been modified for botany, wildlife and recreation, and added for watershed and heritage resources by the ID team (since releasing the original proposed action), and would be applied in a site-specific manner. A design measure for the watershed resource was also added based on the more detailed Vegetation Management Plan (see Silviculture Report, Appendix H). See Appendix B for a list of the design criteria for this project.

Comparison of Environmental Consequences

This section provides a summary of the effects of implementing each alternative. Information in Table 3 is focused on PAOTS and physical infrastructure in the picnic site to compare differences among alternatives. Table 4 is focused on a comparison of effects by alternative where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 3. Comparison between alternatives of changes to PAOTs and infrastructure

ELEMENT	Alt. 1	Alt. 2	Alt. 3
Hiking PAOTs	53	275	182
Picnicking PAOTs	423	184	552
Total PAOTs	476	459	734
Parking Spaces (total #)	110	202	294
Picnic Units (#)			
Single-Family	74	24	94
Double-Family	0	11[1]	0
Group	2	0	9
Total Picnic Units	76	46	103
Toilet Facilities (#)	3 flush / 1 vault	8 double toilet facilities (8 buildings equaling a total of 16 stalls)	4 double/ 6 single toilet facilities (10 buildings equaling a total of 14 stalls)
Designated Host Sites (#)	0[2]	2	3
Nature Trail (miles)[3]	0	1.41	0.92
Paths (miles)[3]	0	0.28	1.80
Roads (miles)[3]	1.20	1.65	1.80

[1] Double-family picnic units are counted as two picnic units
[2] No designated host sites for Alternative 1, but three single picnic units are currently used as host sites.
[3] Numbers are approximate and were derived from GIS data layers

Table 4. Comparison of effects by alternative

Measure	Alternative 1	Alternative 2	Alternative 3
RECREATION			
Visitor Capacity Number of picnic units and parking spaces	No change	-24 single family units -11 double family units -192 parking spaces	-94 single picnic units -9 group units that could accommodate 40 people each -294 parking spaces
Flexibility in picnic site configuration	No change	Configuration allows the double-family units to be split into two single family units, which enhances flexibility of the facility to accommodate various group sizes. Two host sites are proposed that are strategically located in order to increase efficiency in fee collection.	These group units are not as flexible in accommodating multiple groups of smaller sizes. Three host sites are proposed, which will increase management flexibility in the winter months.
Public Safety Visitor access to an avalanche path during snow season	No change. Continued exposure to potential danger.	No visitor access to avalanche path	Same as Alternative 2.
Capacity of restroom facilities	No change. Inadequate to accommodate current use and any additional use.	8 buildings, with a total of 16 stalls	10 buildings, with a total of 14 stalls
Trash management processes and facilities	No change. Inadequate trash receptacles would add to litter and sanitation risks.	Sanitation would be further improved by placing conveniently located garbage cans at each picnic unit and creating pads for large dumpsters that are accessible to garbage trucks.	Same as Alternative 2.
Traffic management processes and facilities	No change. Congestion along State Highway 157 and within the picnic site would persist.	Improves congestion along State Highway 157 by removing parking. Improves traffic management by providing a bus and shuttle turn-around, decreasing steepness of the entry, and relocating the gate to maximize management options. Fewer people at one time combined with better traffic management will help to minimize traffic.	Same as Alternative 2, but a PAOT of 294 may increase possibility of traffic accidents from trying to accommodate so many vehicles in a relatively small area.
Facilities that meet the *Forest Service Outdoor Accessibility Guidelines* (FSOAG)	No change. Facilities would not meet FSOAG.	Facilities would meet FSOAG.	Same as Alternative 2.

Table 4. Comparison of effects by alternative

Visitor Experience Maintaining a natural visual setting	No change. Damage to natural resources would continue.	Short-term visual impacts from construction and vegetation management activities, but long-term benefits to aesthetic appeal by promoting a healthier overstory and reducing effects of future fire events.	Same as Alternative 2, but in trying to accommodate so many people, there is less space between picnic units, thereby limiting privacy among visitor groups.
Number of user-created trails	No change. Mismanaged user created trails would result in loss of natural vegetation.	While there may be better opportunities to view wildlife, having more open space may increase the number of user-created trails, as visitors “explore” in the natural environment for better viewing opportunities.	Additional picnic units at the southern end of the picnic site would likely increase the number of user created trails as people cut through open areas to get to parking and restroom facilities.
Miles of nature trails	No nature trails	Creates 1.41 miles of nature trails	Creates 0.92 miles of nature trails
Providing safety and interpretive information	No change. Safety and interpretive information will continue to be limited.	Provides opportunity to better disseminate safety and interpretation information.	Same as Alternative 2.
Facility Protection and Maintenance Amount of above ground infrastructure within an avalanche path	No change. Picnic unit furniture would remain in the avalanche path.	No picnic units would be located within the avalanche path. This would maximize protection of investments and eliminate the need for maintenance and repair in the event of an avalanche.	A number of single and group picnic units would be located in the avalanche path; but no facilities (i.e., restrooms and buildings) and this area would be closed during the winter months.
Amount of picnic unit furniture maintenance relative to visitor use	No change. Under-used group picnic facilities and over-used restroom facilities would both continue to incur excessive maintenance and repair investments.	A reduction in the number of picnic units would ensure that all units would be used more efficiently. There would be fewer picnic units left unoccupied due to lack of demand. This would reduce unnecessary maintenance on furniture that is not being used.	Visitor use is distributed over more site furniture. On the other hand, it also increases maintenance costs in the long run as furniture weathers and ages.

Table 4. Comparison of effects by alternative

Time and money spent on maintenance and repair	Deteriorating picnic units would have to be replaced individually, which would not be economical	Proposed replacement of all roads, utilities, restrooms, and other infrastructure of the picnic site, which will cut down on the cost of maintenance and repair. Parking configuration may contribute to greater maintenance costs as the asphalt deteriorates, compared to having a more consolidated parking configuration (i.e., each picnic unit has its own parking spaces).	Same as Alternative 2, except parking would be more consolidated, so repaving would likely be less costly in the future.
Flexibility in fee management options	Managing fee structures within the picnic site would remain limited, since there is no physical distinction between parking for hikers and overflow picnic parking. Parking for hikers along State Highway 157 would still be free.	Two host sites would be strategically located in order to increase efficiency in fee collection.	Three host sites would be strategically located to facilitate efficient management of the site There would be no distinction between picnicking and trail use parking. This would make managing options less flexible if the concessionaire wishes to impose different fee structures based on visitors' activity.
HERITAGE RESOURCES			
Historic property impacts	On-going vandalism would go unchecked and may affect remnants and features through defacement, disfigurement or destruction.	Historic sites would be protected per design criteria	Historic sites would be protected per design criteria
Maintain Historic Characteristics	Historic theme has been maintained but quality of workmanship suffers	Historic theme would be enhanced by following the SMNRA Built Environment Image Guidelines	Historic theme would be enhanced by following the SMNRA Built Environment Image Guidelines
WATERSHED AND SOILS			
Runoff	No change. There is currently no trend in hydrologic function that indicates improvement or degradation.	There would be a minor increase in runoff due to increased paved surface.	Same as Alternative 2.

Table 4. Comparison of effects by alternative

Sedimentation	No change. Construction, earthmoving and recontouring of the some areas of the picnic grounds would not occur.	Likelihood of accelerated erosion and transport of sediment off of construction sites during high intensity rainfall in the summer monsoonal months of July through September. Sedimentation would be mitigated using standard best management practices. Effects from sedimentation would be minimal.	Same as Alternative 2
Soil Productivity	No change. There is currently no trend in soil productivity that indicates improvement or degradation.	Approximately 0.3 acre additional area would be dedicated to parking lot and restroom facilities and would not be managed for soil productivity.	Approximately 0.7 acre additional area would be dedicated to parking lot and restroom facilities and would not be managed for soil productivity.
WILDLIFE AND PLANTS			
Threatened and Endangered Species	No effect	No effect	No effect
Sensitive Species	No Change. For all sensitive species analyzed in detail, determinations include no effect, no impact, or may impact but not likely to cause a trend toward federal listing or loss of viability.	For all sensitive species analyzed in detail, determinations include no effect, no impact, or may impact but not likely to cause a trend toward federal listing or loss of viability.	For most sensitive species analyzed in detail, Alternative 3 would have similar effects as Alternative 2. In some cases, increased picnicking and development would lead to more disturbance to species or habitat.
Management Indicator and Conservation Assessment Species	No Change. For all wildlife species analyzed in detail, the proposed project would not impact species viability in the Spring Mountains National Recreation Area, or across the Forest. Short-term effects may occur to some plant species.	For all wildlife species analyzed in detail, Alternative 2 would not impact species viability in the Spring Mountains National Recreation Area or across the Forest. Short-term effects may occur to some plant species; however, design criteria and conservation measures would minimize long-term effects.	For most species analyzed in detail, Alternative 3 would have similar effects as Alternative 2. In some cases, increased picnicking would lead to more disturbances to species or habitat.
SILVICULTURE/VEGETATION MANAGEMENT			
Tree stocking and species composition	No change from current high number of trees. Does not change species composition, and white fir increasing with time	White fir reduced and stand pushed back toward historic species composition	Same as Alternative 2
Tree growth and vigor	Tree growth and vigor would continue to decline	Increased tree growth and vigor	Same as Alternative 2

Table 4. Comparison of effects by alternative

Tree and stand bark beetle risk Tree disease presence and impacts	No change to bark beetle risk; continues to be high. Does not change dwarf mistletoe; continues to increase.	Reduced bark beetle risk, and dwarf mistletoe presence and impacts	Same as Alternative 2
Understory vegetation coverage and vigor	Does not change; continues to decline	Increases understory vegetation coverage and vigor	Increases understory vegetation coverage and vigor due to tree thinning effects, but may reduce coverage in areas due to increased picnic units and use impacts.
Area Impacted - amount of area dedicated to permanent infrastructure (i.e., roads, parking spaces, picnic units)	No Change	Increase in area impacted. Due to decommissioning facilities in the south loop portion of the picnic area, there would be a decrease in area impacted in, and east of the Griffith Peak avalanche path.	Alternative 3 would permanently impact a greater area than Alternative 2 because of the increase in permanent infrastructure including the area on the southeast side of the picnic site.
ENVIRONMENTAL JUSTICE			
Picnic Site Rehabilitation	No effect	No effect	No effect

Environmental Consequences

This section provides a summary of the environmental impacts of the alternatives considered in detail. It provides the information to determine whether it is necessary to prepare an environmental impact statement. The associated Finding of No Significant Impact (FONSI) discusses whether the proposed action has significant effects. Further analysis and conclusion about the potential effects are available in reports for each resource and other supporting documentation cited in those reports. These documents are available online at http://www.fs.fed.us/r4/htnf/projects/ or upon request from the Spring Mountains National Recreation Area office.

The effects analysis in this section discloses the direct, indirect and cumulative effects of the proposed action and alternatives, as directed by Forest Service NEPA procedures (36 CFR part 220). The analysis of cumulative effects considers the effects of past, present and reasonably foreseeable actions in combination with effects predicted from the proposed action and alternatives. Regarding the consideration of past actions, the Forest Service NEPA procedures follow guidance provided by the Council on Environmental Quality.

A summary list of the past, present, and reasonably foreseeable actions that could contribute to cumulative effects are shown in Appendix C. Past actions and natural processes contribute to present effects or existing environmental conditions. Not all listed actions may be considered in each cumulative effects analysis; each analysis examines only those actions and events that are relevant to the resource in question.

Recreation

Effects of the alternatives on recreation are evaluated both qualitatively and quantitatively. Measurement indicators include visitor capacity, public safety, visitor experience, and facility protection and maintenance. See the Recreation Report for more information.

Alternative 1

Direct and Indirect Effects

Visitor Capacity

In the short term, there would be no displacement of visitors due to a construction phase. Visitors would continue to have the same recreation opportunities that exist currently. The number of persons at one time (PAOT) would remain at 476. There would be no changes to the number of picnic units, parking spaces, or the flexibility in the range of group sizes the picnic units can accommodate.

Public Safety

Visitors would continue to be exposed to potential danger from the Griffith Peak avalanche path. Snowplay in this hazardous area would continue, putting visitors at risk.

Sanitation would remain a concern at the picnic facility. Restrooms would remain inadequate to accommodate current use and any additional use that may result after the new trail construction project. Inadequate trash receptacles would add to litter and sanitation risks.

Safety issues related to traffic congestion along State Highway 157 and within the picnic site would persist. Additional demand for parking after trail reconstruction is complete would only increase the probability of traffic accidents and potential injury.

Site furniture would continue to deteriorate under this alternative, resulting in a greater disparity between current conditions and the desired conditions as listed in the *Forest Service Outdoor Accessibility Guidelines*. Dilapidated facilities present a potential safety risk to all visitors.

Visitor Experience

Damage to natural resources would continue under the no action alternative. Mismanaged parking and user created trails would result in loss of natural vegetation that would be increasingly difficult to restore. Such impacts to the natural visual setting would eventually diminish the picnic site's desirability as a recreation destination. This destruction of the resource may be mitigated with the development of additional picnic facilities at the Middle Kyle Complex[2].

Under this alternative, safety and interpretive information would continue to be limited. Without this information, visitors would be uninformed about potential safety concerns and may be less appreciative of the natural resources of the area, potentially continuing the trend of natural resource damage (i.e., user-created trails) occurring at the picnic site. Interpretive information from the Interpretive Designs and Displays Project and the Middle Kyle Complex may be able to mitigate these effects in the future.

Facility Protection and Maintenance

The No Action Alternative would result in inefficient use of time and money spent on facility protection and maintenance.

Under-used group picnic facilities and over-used restroom facilities would both continue to incur excessive maintenance and repair investments under this alternative. Deteriorating picnic units would have to be replaced individually, which would not be economical due to economies of scale.

Managing fee structures within the picnic site would remain limited, since there is no physical distinction between parking for hikers and overflow picnic parking. Visitors would continue to be charged equally regardless of whether they are hiking or picnicking. Some visitors

[2] Recreation complex development to include construction and operation of new recreational opportunities and facilities within the middle Kyle Canyon area in order to reduce the recreational pressure on sensitive species and their habitats within the upper Kyle and Lee Canyons.

would continue to park for free along the lower trailhead and walk into the fee area from the trail that runs between the two areas.

Cumulative Effects

The No Action Alternative would not meet current or future demand for picnic facilities in forested areas. After completion of the Cathedral Rock Trails Project, there would be an even greater need for parking spaces in the area. Over time, however, additional picnic site development at the Middle Kyle Complex could help to absorb demand for picnic facilities in the NRA.

Alternative 2

Direct and Indirect Effects

Visitor Capacity

Alternative 2 decreases PAOT from 476 to 459. This represents a shift in emphasis from picnicking to hiking, as the estimated hiking PAOT would increase from 53 to 275, while the picnicking PAOT would decrease from 423 to 184.

Currently, this decrease in picnicing PAOT does not meet visitor demand for picnic units, as occupancy is often at 90% on the weekends. However, over time, additional picnicking facilities at the Middle Kyle Complex may help to meet current and future demands.

There would be an estimated 110 trailhead parking sites in Alternative 2. Single-family picnic units would have space for two cars, and double-family picnic units would have space for four cars.

Public Safety

Of the presented alternatives, this one is best in protecting visitors and infrastructure from avalanche events, because visitor access is closed during the winter and no above ground infrastructure would be placed within the avalanche path.

This alternative provides the greatest number of restroom facilities. The Regional Standard is that one toilet hole accommodates 35 people and 4 people per single picnic table. For the 459 total PAOTS in Alternative 2 this equates to 13 stalls. There would be 8 double toilet facilities, which provide a total of 16 stalls. This would better accommodate current and future restroom demands.

Visitor Experience

Decreasing picnicking PAOT limits the number of visitors allowed at the picnic site at any given time but may result in improving the visitor experience for those present at the picnic site. Fewer picnic units spread over the same area increases privacy by allowing more space between sites. Fewer people at one time may also help to minimize resource damage, which improves visitor satisfaction in the long run.

Fewer people at one time combined with better traffic management would help to minimize traffic and associated air and noise pollution.

While both action alternatives include nature trails, Alternative 2 provides 1.41 miles of nature trail while Alternative 3 provides 0.92 miles of nature trail. Additionally, because there are no single-family picnic units among the nature trails, visitors can experience a more secluded and primitive walking experience.

Having more open space may increase the number of user-created trails, as visitors “explore” in the natural environment for better viewing opportunities. Additional signage or barriers may be required to keep visitors on the trails. While this may slightly decrease the visual quality, in the long-term, barriers protect natural views offered by the vegetation.

Facility Protection and Maintenance

There are no picnic units proposed within the Griffith Peak avalanche path in Alternative 2. This maximizes protection of investments and eliminates the need for maintenance and repair in the event of an avalanche.

Maintenance costs are reduced in a number of ways under this alternative. Firstly, this alternative decreases PAOT while providing for 16 restroom stalls — the most of the three alternatives. Distributing use across so many stalls reduces maintenance and repair costs in the long term. Secondly, reducing the number of picnic units would ensure that all units would be used more efficiently. There would be fewer units left unoccupied due to lack of demand. This reduces unnecessary maintenance on site furniture that is not being used.

One potential increase in the level of maintenance required relates each picnic unit having its own parking spaces. This may contribute to greater maintenance costs as the asphalt deteriorates, compared to having a more consolidated parking configuration.

In regards to site management, this alternative includes 2 host sites that are strategically located in order to increase efficiency in fee collection.

Cumulative Effects

This action would reinforce the current Interpretive Designs and Displays Project. Over time, additional picnicking facilities at the Middle Kyle Complex, may help to meet current and future demands.

Alternative 3

Direct and Indirect Effects

Visitor Capacity

Alternative 3 would increase PAOT from 476 to 734. This alternative emphasizes picnicking by creating 552 picnicking PAOTS and 182 hiking PAOTS. It would also provide 294 total parking spaces, the most out of the three alternatives. Increasing PAOT would better meet visitor demand for picnic units during peak visitation times.

Alternative 3 would include 94 single picnic units, comprised of one table and one cooking surface, and 9 group sites that could accommodate 40 people each. While there has been a trend in visitation toward larger group sizes, the market does not support this many large group sites (Pricewaterhouse Coopers 2008). Additionally, these group sites would not be as flexible in accommodating multiple groups of smaller sizes.

Public Safety

A number of single and group picnic units are located in the Griffith Peak avalanche path under this alternative. While this area would be closed during the winter months, it does create challenges for maintenance.

Although PAOT is significantly increased relative to Alternative 2, the number of restroom stalls is not. For the 734 total PAOTS in Alternative 3 this equates to 21 stalls. This alternative proposes 10 buildings with a total of 14 stalls. It is not clear if this number would be sufficient relative to the number of people permitted at the site.

This alternative includes a total of 294 parking spaces. There may be a heightened possibility of traffic accidents from trying to accommodate so many vehicles in a relatively small area.

Visitor Experience

Additional parking spaces allow for more vehicles in the area, which increases associated noise and air pollution. This diminishes the experience of visitors who come to the area to experience a more primitive environment.

This Alternative creates 0.92 miles of nature trails within the picnic site. Additional mileage of nature trails represents a greater recreation opportunity for those who can not hike the steep trails characteristic of nearby trails. Clearly delineated walking paths may also reduce the number of user created trails within the picnic site.

Facility Protection and Maintenance

In increasing PAOT, visitor use is distributed over more site furniture. On the other hand, it also increases maintenance costs in the long run as furniture weathers and ages. As mentioned above, the market may not support 9 large group picnic units of this size; consequently, these sites may cost more to upkeep than they would provide in revenue.

Restroom facilities are also more costly in this alternative, because stalls are distributed among ten buildings, as opposed to 8. This increases infrastructure investment and maintenance costs in the long run. Additionally, this alternative supports more visitors but provides fewer restroom stalls, which may increase repair costs over the life of the facilities.

Alternative 3 would create approximately 294 parking spaces, and there would be no distinction between picnicking and trail use parking. A one-fee structure system could be used and be easier to operate and maintain than a two-fee structure. Parking would be more consolidated, so repaving would likely be less costly in the future. Finally, three host sites are proposed, which would increase management flexibility in the winter months.

Cumulative Effects

This action would reinforce the current Interpretive Designs and Displays Project. The future development of Middle Kyle Complex would likely have little impact on visitation at Cathedral Rock in the long term because Cathedral Rock is in a popular forested setting.

Effects Common to Alternatives 2 and 3

Visitor Capacity

During the construction phase of the action alternatives, the Lower Cathedral Rock Trailhead parking area along State Highway 157 would remain open for continued parking and trail access until trailhead parking for the new Cathedral Rock Overlook and South Loop Trailheads becomes available; however, the picnic site and trailheads inside the picnic site would be closed. Recreationists would be directed to the Sawmill Trailhead and Old Mill Picnic Areas on State Highway 156 in upper Lee Canyon and the Foxtail Group Picnic Site on State Highway 156 in Lee Canyon. Many of these picnic sites are already at capacity during the weekends, so recreationists could choose to recreate in non-designated picnic units.

Public Safety

During the construction phase of the project, the picnic site would be closed, which would help prevent visitor access to the avalanche path. As a direct result of either action alternative, public safety would be enhanced.

Restroom capacity would be increased in both action alternatives as the current water lines and sewer system would be abandoned in place of a new winterized water system, septic tanks, and leach fields. Sanitation would be further improved by placing conveniently located garbage cans at each picnic unit and creating pads for large dumpsters that are accessible to garbage trucks.

Both action alternatives would improve traffic management by providing a bus and shuttle turn-around, decreasing steepness of the entry, and relocating the gate to maximize management options. Additionally, there would be two new trailheads; the Cathedral Rock Overlook Trailhead would have 43 adjacent parking spaces, and the South Loop Trailhead would have 15 adjacent parking spaces.

All infrastructure would be completely replaced in the action alternatives, as to meet Forest Service Accessibility Guidelines. Lighting around the picnic site, trailheads, and toilets would further contribute to visitor safety. We also propose to remove and replace all utilities, and use a mix of low-flow flush toilets and vault toilets, and this could potentially lead to less water usage.

Visitor Experience

During the construction phase of the action alternatives, visual quality may be impacted. During this time, the Vegetation Management Plan (see Silviculture Report, Appendix H) would be implemented that would remove smaller trees and prescribe burn the understory vegetation. From a visitor perspective, a bare understory may be negatively perceived, but in the long-term, this

would increase the aesthetic appeal by promoting a healthier overstory, increasing the understory coverage of flowering shrubs and plants, and reducing effects of future fire events. Implementing the Vegetation Management Plan compliments fuel reduction projects currently taking place and those proposed in the Spring Mountains National Recreation Area. After implementation, the visual quality of the natural landscape and built infrastructure would be improved.

As mentioned, the Vegetation Management Plan would enhance the growth of larger ponderosa pine, aspen, oak, and mountain mahogany. Forest composition would be shifted to more historic conditions, which could provide educational opportunities for visitors. Weed management (see Non-native Invasive Species Report) would encourage native plant recolonization and help sustain populations of sensitive plants and butterfly host/nectar species in the picnic area.

All new facilities would comply with the SMNRA Built Environment Image Guidelines and Forest Service Built Environment Design Criteria, which ensures that facility development compliments the natural surroundings. This includes building naturally appearing barriers to control parking.

Both action alternatives would include development and implementation of an environmental education theme and infrastructure. This presents an opportunity to better disseminate safety and interpretation information. Ideally, this would not only provide for a more enriching visitor experience, but also promote better visitor stewardship of the land in the long-term.

Facility Protection and Maintenance

Both alternatives would replace all of the roads, utilities, restrooms, and other infrastructure of the picnic site, which would minimize the cost of maintenance and repair in the long-term. Additionally, winterizing the water facilities (i.e., installing system drains) would reduce damage to the water lines when temperatures reach below freezing.

Infrastructure would be better protected from fire by implementing the Vegetation Management Plan (see Silviculture Report, Appendix H).

Management options would be improved in both alternatives. The northern trailhead could operate year round with access to the trail and restrooms. The southern trailhead could be closed in the winter due to lack of demand and protect visitors from accessing the avalanche area.

The trail connecting the non-fee and fee areas would be rehabilitated so that all visitors must pass through the host sites in order to get to the trailheads. This would facilitate more efficient fee management.

Heritage Resources

Effects to heritage resources consist of qualitative determinations as to whether historic features and recorded sites are preserved and protected. See the Heritage Report for details.

Alternative 1

Direct and Indirect Effects

There would be no direct effects to heritage resources if no remodeling or maintenance activities occurred. Ongoing vandalism would go unchecked and may affect remnants and features through defacement, disfigurement or destruction. Indirect effects could occur from lack of maintenance, causing historic remnants and features (i.e., Civilian Conservation Corps (CCC)-style rock walls or steps, CCC-era wading pool remnants) to further decay.

Cumulative Effects

Unauthorized maintenance and/or lack of attention to the preservation of historic features, and unchecked avalanche hazards, would continue to degrade the historic setting of the recreational area.

Alternatives 2 and 3

Direct and Indirect Effects

No direct effects are anticipated with implementation of design criteria for heritage and recreation (see Appendix C). Indirect effects could occur through inadvertent maintenance activities or through site vandalism. Avalanche hazards could continue to degrade the historic setting of the recreational area.

Cumulative Effects

The Cathedral Rock Picnic Area has received numerous facilities “upgrades” that have affected the historic resources. Because design criteria would be followed, it is unlikely additional cumulative effects would occur.

Watershed and Soils

The effects analysis of proposed activities on watershed and soil resources evaluates the potential for storm runoff from paved areas, sedimentation during construction and avalanche risks.

Alternative 1

Direct, Indirect and Cumulative Effects

Alternative 1 would not alter hydrologic function or adversely impact soil productivity. There is currently no trend in hydrologic function that indicates improvement or degradation. Therefore, no direct, indirect, or cumulative effects are anticipated to occur under Alternative 1.

Alternatives 2 and 3

Direct and Indirect Effects

The action alternatives have similar effects and would not result in long-term adverse effects to watershed resources. The main risks are from erosive storm runoff within the picnic site,

sedimentation during construction, and avalanche run-out within the south picnic site. Effects were evaluated for the two distinct phases of the project: (1) obliteration of old campground, reconstruction and restoration of old template, and (2) the harvest of trees and underbrush removal for forest thinning efforts.

The storm runoff analysis used the Rational Method (Dunne and Leopold, 1978) to compare alternatives. Results showed very little differences in runoff from the current picnic pavement area compared to the proposed with only a half acre more impervious surface proposed. However, the analysis highlighted that the picnic grounds paved areas contributes roughly 20 percent of the total runoff for Mazie Canyon watershed despite the picnic site consisting of only 3 percent of the watershed area. This highlights the overall runoff potential.

Sedimentation would be mitigated using standard best management practices (State of Nevada 1994, 2004), including silt fences and controlling erosion along roads and log skidding routes and landings. Although most work appears that it will avoid direct action within the natural channels, there is a likelihood of accelerated erosion and transport of sediment off of construction sites during high intensity rainfall in the summer monsoonal months of July through September.

Avalanche risk remains within the south portion of the picnic site for both action alternatives where the 2005 avalanche extended from the Griffith Peak avalanche chute. The avalanche assessment commissioned by the Forest Service found annual risk is from 1 to 3 percent probability for an avalanche that could damage facilities (Mears 2008). The 2005 avalanche was a 100-year event, while the damaging avalanches in 1965 and 1969 were 30-year events. Another avalanche similar in magnitude to the 2005 event would likely extend 30 to 50 feet given the extensive forest destruction (from past avalanches).

Soil impacts would be primarily due to removal and reconstruction of roadways, parking lots and facilities. These areas are dedicated to development and therefore not managed for productivity purposes. Approximately 0.5-acre additional area would be dedicated to parking lot and restroom facilities over existing conditions. Thinning white-fir within the project area would not have adverse effects on soils and hydrology since the planned cable systems could remove the trees with very minimal, temporary impacts.

Cumulative Effects

The proposed project coincides with a fuel reduction project that will remove some of the trees and shrubs on slopes above, below, and around the picnic site. This “tree thinning” complements proposed treatment within the picnic site. Cumulative effects from the larger scale thinning project are not anticipated. Soils and hydrology risks from the fuels reduction project and the picnic ground reconstruction incorporate the some of the same design features to minimize effects (see Watershed Report for more details).

Increased risk for avalanche onto the existing picnic site and town below was not found from the cumulative actions of reconstruction of the picnic site with greater impervious surface and

tree thinning. The location of the runout zones and the retention of large trees were factors that decreased risk (see Watershed Report for more details).

Wildlife and Plants

Effects to wildlife and plant species are analyzed in a variety of ways. For wildlife species, effects are focused on changes to habitat features and disturbance and displacement of individuals. For plants, effects are focused on habitat degradation and the potential for direct loss of individuals due to ground disturbance and trampling by people or animals.

Species Analyzed

The effects analysis for wildlife and plants is focused on special status species and their habitat that the Forest Service is required to protect and conserve according to laws, regulations, and agency policies. Species that were analyzed in detail are those that are known to occur or have habitat in the project area, and would potentially be impacted by proposed activities. The biological assessment and evaluation, and the MIS and Specialist Report for Animals and Plants contain more detailed descriptions of the regulatory framework; analysis methodology; existing condition; direct, indirect and cumulative effects to wildlife and plant species and their habitat; consistency with regulatory direction; and the supporting rationale for wildlife and plant species not analyzed in detail.

Federally Listed Threatened, Endangered, or Candidate Species

Our analysis showed that the southwestern willow flycatcher, the desert tortoise, and the Lahontan cutthroat trout listed under the Endangered Species Act, as amended, would not be affected by this project, and no further consultation with the USFWS regarding these species has been initiated (see Table 5). Therefore, these species are discussed and analyzed in detail in the Biological Assessment and Evaluation but not in this EA. No federally listed threatened, endangered, or candidate plant species are known or suspected to occur within the Spring Mountains NRA.

Other Special Status Species

Management Indicator Species - The National Forest Management Act (36CFR 219.19 (a)(1)) requires the Forest Service to identify species that are indicators of ecosystem health and the success of management of resources; these species are called “management indicator species”. The Forest Plan (1994) has designated MIS animals and plants in the Spring Mountains National Recreation Area (SMNRA).

Region 4 Toiyabe National Forest Sensitive Species – Forest Service Sensitive species are those for which population viability is a concern. Sensitive species are designated by the Regional Forester.

Other Species of Concern - In addition to the animal and plant species listed above, the Spring Mountains NRA also evaluates species listed under the following conservation documents, which may occur within its designated boundaries:

- Conservation Agreement (CA) for the Spring Mountains National Recreation Area, Clark and Nye Counties, Nevada – Species of Concern (U.S. Forest Service 1998).
- Clark County Multiple Species Habitat Conservation Plan (RECON 2000) –"Covered" species listed for the Spring Mountains NRA
- Neotropical Migratory Bird Act

Table 5 summarizes effects for all animal and plant species analyzed in detail. The following section provides general effects analysis for wildlife and plants.

Alternative 1

Direct, Indirect and Cumulative Effects to Wildlife and Plants

The site is currently impacted by high levels of recreational use. Under Alternative 1 there would be no change in the recreational use types or levels at Cathedral Rock Picnic Area. The existing infrastructure would remain. There would be no direct or indirect effects of this alternative on any wildlife or plant species; therefore, there would also be no cumulative effects.

Alternatives 2 and 3

Direct and Indirect Effects to Wildlife

The following section summarizes general effects from Alternatives 2 and 3 that would be applicable to many wildlife species, some of which can be classified into similar groups.

Noise and Human Presence Disturbances

During implementation, the proposed Cathedral Rock Picnic Area Rehabilitation Project would have some short-term negative effects on some animal species. Use of heavy equipment, small machinery, blasting and presence of crews would result in higher than usual noise levels, which would locally displace animals that regularly forage, den, or nest in the area. The amount of recreational activities that occurs under all alternatives likely contributes a substantial amount of disturbance within the local area.

Behavioral disturbance impacts on wildlife species have been fairly well documented for a number of species including deer, small mammals, reptiles, and nesting and perching birds (Miller et al. 2001; Taylor and Knight 2003). Most species exhibit a "flight" response to disturbance resulting in temporary, or if disturbance is constant, permanent displacement. Flight responses from disturbances can negatively affect animal health by requiring increased energy expenditures (Miller et al. 2001; Taylor and Knight 2003). These effects include alteration of habitat use (avoidance or abandonment of an area – either temporarily or permanently),

interruption of reproductive activities (courtship, mating, prenatal care, nesting, etc.); and increased predation (especially of abandoned nests).

Relatively high levels of disturbance already exist since all of the proposed project area is bordered by or adjacent to roads/trails, campgrounds, picnic units, and private properties. As a result, some resident animals may be acclimated to human disturbance, or have already changed their behaviors accordingly. Use of the area for walking, mountain biking, and driving probably already has resulted in lower numbers of species in the area as well as a reduced diversity of species.

A limited operations period would limit the period of disturbance from implementation of vegetation treatments to that time when many wildlife species are relatively inactive and during the non-breeding season.

Snag-dependent Species

A number of species depend on snags for denning, foraging, and breeding (including various bat species, woodpeckers, chickadees, nuthatches, woodpeckers, and owls).

Some individual animals may be injured or killed during the felling of trees and snags. By dropping these trees before breeding season (March 15th to July 15th), impacts to nesting birds can be largely avoided. Nesting birds would seek alternate nest sites if those snags are not available to them. Presently large snags are widely distributed throughout the SMNRA.

The protection measures in the project design criteria call for retention of snags (where public safety is not compromised). This measure should help reduce the potential for losses of nesting and denning habitat as well as individuals.

Fossorial and Small Terrestrial Species

Responses of small mammals to fuel reduction treatments are likely determined by responses of critical habitat components, including shrub and herbaceous vegetation and coarse woody debris. Understory vegetation, which provides a source of cover, as well as vegetation and seed food sources (Goodwin and Hungerford 1979, Wilson and Carey 2000), and coarse woody debris, which provides nesting and travel cover and insect and fungal food sources (Bowman et al. 2000, Carey and Harrington 2001), strongly influence small-mammal populations. These species may be affected by the removal of downed logs, which are utilized for cover, shade, and denning purposes; and disturbance to soils by heavy machinery. Limiting all vehicle use to existing roads or designated temporary routes and skid-trails would help limit potential impacts to those species. If logs are removed without ground disturbance within a week or two after being dropped, and if piles are burned quickly after being created, impacts to wildlife species would be relatively less likely because they would not have enough time to colonize the downed logs. Dropping the snags and immediate removal of the logs in fall and winter months when temperatures are low would help ensure that animals would not seek shelter in or under the logs and ensure there would be no impacts to these species. Wildlife design criteria 1 and 2 are intended to reduce impacts associated with changes in the dead and down woody components:

Bats

Cave and large snag roosting habitat does not exist in the project area. Project activities would not likely impact actively foraging bats since these bats are nocturnal and project activities would take place during the day. Foraging habitat would be affected by changes in vegetation structure. Thinning out the trees in overly dense stands of trees would open up the tree canopy allowing for easier foraging activities (Humes et al. 1999). To mitigate impacts in the project area, snags and logs would be left to meet Forest Plan standards, and additional trees showing signs of mortality may be left for future snag and down log recruitment. None of the bats potentially present in the project area use snags for maternity colony sites, so losses of reproductive colonies are not expected.

Neotropical Migratory Birds

Numerous species of neotropical migratory birds inhabit the SMNRA (GBBO 2006) and breeding bird surveys have been completed for the Spring Mountains Hazardous Fuel Reduction Project (USDA Forest Service 2007). The proposed project would alter less than 35 acres of forest habitat that is presently potential foraging, nesting, brood-rearing, and migratory habitat utilized by neotropical birds.

The USFWS holds conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 et. seq.). Under the MBTA, nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed. Such destruction may be in violation of the MBTA. Therefore, USFWS recommends land clearing, or other surface disturbance associated with proposed projects, be conducted outside the avian breeding season to avoid potential destruction of bird nests or young, or birds that breed in the area (USFWS, August 1, 2005 (File Number 1-5-05-SP-523)). If this is not feasible, USFWS recommends a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active (USFWS, August 1, 2005 (File Number 1-5-05-SP-523)).

Management for neotropical migratory birds is generally accomplished by focusing on providing a diversity of habitat conditions at appropriate levels across landscapes. The Nevada Partners in Flight Bird Conservation Plan is pertinent to evaluating effects on neotropical migratory birds. The conservation plan includes recommendations for habitat conservation. Direction for the action alternatives of the Cathedral Rock project is consistent with those recommendations.

Potential effects on neotropical migratory birds at the local scale include modification of habitat and disturbance/destruction of individuals from vegetation treatments and recreational activities. More specifically, effects could involve:

- mortality of young in the nest due to physical disruption or nest abandonment by the adults who are intolerant to disturbance;
- loss or adverse modification of nesting, roosting, or foraging habitat;
- forest vegetation changes due to climatic changes;
- forest vegetation changes due to alteration of disturbance regimes;
- loss of habitat from wildfire;
- changes in vegetation from wild horse and burro grazing;
- human disturbance associated with land use and recreation; and
- changes to stand structure from outbreaks of insects and diseases.

The design criteria in the project description call for retention of snags where those snags do not present a safety hazard. A limited operations period (vegetation manipulation would occur only during the non-breeding and non-brooding rearing seasons) would prevent direct mortality of individuals (USFWS, August 1, 2005 (File Number 1-5-05-SP-523)) because of abandonment of chicks or when chicks or eggs are in the nest. Treatment prescriptions would maintain native vegetation across the project area, albeit with a more open canopy and understory. This measure should help reduce the potential for losses of nesting, roosting, thermal, and cover habitat as well as individuals.

Herpetofauna

Numerous reptile species potentially occur within the project area (see species accounts below). Most of these species burrow in soft dirt or move into rock crevices or under decaying logs. These species would be subject to differing levels of loss or injury depending on whether they were active or inactive in the project area during implementation. The use of heavy equipment can cause direct mortality of individuals by crushing and collapse of aestivation burrows. Impacts from heavy equipment usage would be lower as the project would be implemented during winter months when herpetofauna would be hibernating and would not be active within the project areas. Disturbance of the soil could result in the direct mortality of individuals occupying disturbed sites. See also the discussion above (fossorial and small terrestrial species) for impacts resulting from manipulation, burning, and removal of downed logs and woody debris piles.

Structural changes to the vegetation (i.e., a more open condition) would result from the fuel reduction treatment which is currently underway. This includes the thinning out the vegetation in the understory and overstory in an area extending up to 300 feet from private lands and other developed areas and on both sides of travel corridors within the project area. These structural changes to the vegetation would result in a more dry condition within the sites and increased spatial heterogeneity. Treated areas would be similar to the vegetation community that existed before treatment, with canopy cover varying depending on site and vegetative characteristics (see Table 2 in the biological evaluation and assessment).

General Cumulative Effects to Wildlife

The Spring Mountains are subject to a number of natural and human-caused disturbances. Private land development, roads, water impoundment, water extraction, introduction of exotic and invasive species, recreation, and other factors have impacted and continue to impact native species and their habitats. The effects of past actions have been analyzed in the Final Clark County MSHCP and Environmental Impact Statement for Issuance of a Permit to Allow Incidental Take of 79 Species in Clark County, Nevada September 2000. The results of these documents are incorporated by reference into this analysis. Appendix C includes a list of all past, present and reasonably foreseeable future actions that were considered in the cumulative effects analysis.

The cumulative effects study area for all wildlife species is the SMNRA unless otherwise noted. All snag-dependent, fossorial, small terrestrial, bat, and neotropical migratory bird species occurring within the Spring Mountains are likely to have been affected by past activities and may be impacted by ongoing and future projects, especially close to mountain communities, where permanent habitat loss has occurred over time. Ongoing activities would continue to result in some inadvertent losses of individuals and disturbances to habitat. Given the amount and distribution of habitats in the SMNRA, the impacts from the proposed Cathedral Rock Picnic Area Rehabilitation Project, individually or cumulatively, would be localized and of a magnitude that would not result in substantial effects to the wildlife species groups in the SMNRA.

Direct, Indirect, and Cumulative Effects to Plant Species

The effects on plants vary by action alternative and plant species. Some species would be avoided in both alternatives and overall impacts could be reduced due to managing recreation of the area. Others could be more impacted depending on the alterative. The project was designed to minimize potential impacts to sensitive plants and overall viability is not expected to be reduced; therefore, cumulative effects to plant species from the proposed alternatives are likely to be minimal and not discernable.

Effects Summary for Wildlife and Plant Species Analyzed in Detail

Over 150 wildlife, fish, and plant special status species were considered for analysis; 25 were analyzed in detail. Species not analyzed in detail are species that do not occur, nor have the probability to occur, in the Cathedral Rock action area (i.e., the area of potential effect), and therefore would not be affected by proposed activities. The following tables summarize the detailed effects analysis from the Biological Assessment and Evaluation, and the MIS and Specialist Report for Wildlife and Plant Species.

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Species	Status	Determination of Effects	Rationale for Alternative 2	Rationale for Alternative 3
Western pale big-eared bat (*Corynorhinus townsendii pallescens*) Spotted bat (*Euderma maculatum*)	Sensitive	no impact	• The site is currently impacted by high levels of recreational use • No loss or fragmentation of habitat is expected as a result of this project. • Foraging habitat is available across the SMNRA, and it has been determined that no caves, mines or structures exist within proposed project boundaries. • The proposed project activities are of short duration in any one area and effects caused by noise are likely to be minimal to non-existent at the known roost sites. • Foraging habitat would be unaffected over the long-term.	Same as Alternative 2
Northern goshawk (*Accipiter gentilis*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The site is currently impacted by high levels of recreational use • Breeding individuals were not recorded in the project area; however, they have been detected adjacent to this area in the recent past. • Foraging habitat is available across the SMNRA (Table 5); no loss or fragmentation of habitat is expected as a result of this project. • Limited operating period would prevent direct disturbance during the breeding and fledging seasons. • Snags and dead and down wood would be retained as specified in Forest Plan standards; this retention would reduce, but not totally mitigate for any potential impact on the prey base. • Treatment prescriptions would retain the largest trees within forested habitat types.	Same as Alternative 2 except the increased new construction would result in additional foraging habitat loss within the project area. The increased recreational activities associated with picnicking would increase the disturbance level of any goshawk that might use the area for foraging. However, the decreased hiking PAOT would result in less hiking dispersal outside the project area and therefore potentially less disturbance to foraging and/or nesting goshawk beyond the project area.
Spring Mountains (Mt. Charleston) blue butterfly (*Icarcia shasta charlestonensis*)	Sensitive	No impact	• No loss or fragmentation of habitat is expected as a result of this project. • Treatments would enhance habitat for the larval and nectar host plants of the species. • Known habitats are outside the project area and within the Mt. Charleston Wilderness Area • A limited operating period would minimize direct mortality during the flight season and pupal and larval stages.	Same as Alternative 2

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Spring Mountain checkerspot butterfly (*Chlosyne acastus robusta*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• Treatment prescriptions would maintain larval host plants in breeding colonies; no loss or fragmentation of habitat is expected as a result of this project. • Treatments would enhance habitat for the larval and nectar host plants of the species. • Limited operating period would minimize direct mortality during the flight season and pupal and larval stages.	Same as Alternative 2
Dark blue butterfly (*Euphilotes ancilla purpura*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• Treatment prescriptions would maintain larval host plants. • Treatments would enhance habitat for the larval and nectar host plants of the species. • Treatments and removal methods within larval host plant patches would prevent direct mortality of potentially occurring pupae and larvae. • Limited operating period would minimize direct mortality during the flight season and pupal and larval stages.	Same as Alternative 2
Morand's checkerspot butterfly (*Euphydryas anicia morandi*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The species' known occupied sites are not within the proposed project boundaries. • Treatments would enhance habitat for the larval and nectar host plants of the species. • Most habitats are outside the project area and within the Mt. Charleston Wilderness Area. • Treatments and removal methods within larval host plant patches would minimize ground disturbance and direct mortality of larvae. • Limited operating period would minimize direct mortality during the flight season and pupal and larval stages.	Same as Alternative 2 and: • Development of new facilities and infrastructure would likely impact some larval host plants

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Flammulated owl (*Otus flammeolus*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The site is currently impacted by high levels of recreational use • Breeding individuals were not recorded in the project area; however, they have been detected adjacent to this area in the recent past. • Foraging and nesting habitat is available across the SMNRA; no loss or fragmentation of habitat is expected as a result of this project. • Limited operating period would prevent direct disturbance during the breeding season. • Snags and dead and down wood would be retained to forest plan standards; the retention of these habitat components would reduce potential impacts on the prey base. • Treatment prescriptions would retain the largest trees within forested habitat types.	Same as Alternative 2
Yellow-rumped warbler (*Dendroica coronata formerly D. auduboni*) Brown-headed cowbird (*Molothrus ater*) Western tanager (*Piranga ludoviciana*)	MIS	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Individuals or habitat would not be harmed or removed. Habitat proposed for treatment will continue to function as habitat; suitable habitat is widely distributed across the SMNRA.	Same as Alternative 2

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Palmer's chipmunk (*Neotamias palmeri*)	MIS and CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Potentially suitable denning and foraging habitat would be treated (table 3 of BE/BA). Mortality of individuals could occur as a result of den collapse/removal caused by tree felling and mechanical activities (see above general wildlife impacts). Structural changes (i.e., a more open condition) from thinning would result in a more dry condition within the sites and increased spatial heterogeneity. Woody debris may be the best predictor of chipmunk densities based on chipmunks' use of logs and stumps for traveling, nesting, and feeding platforms (Converse et al. 2006(a)). Design criteria would allow for the retention and in many instances creation of cover sites, in the form of down logs and down woody debris to be left on site, improving opportunities in minimal habitat sites. Treated areas will be maintained as mixed-conifer wooded areas with structure and canopy closure depending on site vegetation and characteristics. Increased spatial heterogeneity is expected to promote variety in fine-scale plant associations, foliage height diversity, and increased abundance of small mammals (Carey and Wilson 2001). Information is lacking on the effects of tree thinning on Palmer's chipmunk. Research suggests lower tree density is related to higher chipmunk densities and as such chipmunks benefit from thinning in southwestern ponderosa pine forests (Goodwin and Hungerford 1979; Converse et al. 2006(a)(b)(c)). Thinning has also been shown to increase herbaceous cover within the first few growing seasons after treatment (Covington et al. 1997) and increases in cone production are also expected; both of which would benefit Palmer's chipmunk.	Direct and indirect effects of Alternative 3 are very similar to those of Alternative 2. Differences include primarily the amount of new construction to accommodate an increase in picnic PAOT and decreased hiking PAOT. The increased new construction would result in additional foraging habitat loss within the project area. The increased recreational activities associated with picnicking would increase the disturbance level of Palmer's chipmunk. However, the decreased hiking PAOT would result in less hiking dispersal outside the project area and therefore potentially less disturbance to chipmunks beyond the project area.
Allen's big-eared bat (*Idionycteris phyllotis*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Foraging habitat would be affected by changes in vegetation structure; however, this would not be a negative change as thinning of stands would result in an immediate and long-term beneficial impact to foraging habitat.	Same as Alternative 2

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Silver-haired bat (*Lasionycteris noctivagans*) Western small-footed myotis (*Myotis ciliolabrum*) Long-eared myotis (*Myotis evotis*) Fringed myotis (*Myotis thysanodes*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Project implementation and recreational activities would not likely impact foraging since these bats are nocturnal and these activities would take place during the day. No additional effects are anticipated beyond those discussed under the General Project Impacts discussion above. Foraging habitat would be affected by changes in vegetation structure; however, this would not be a negative change as thinning of stands would result in an immediate and long-term beneficial impact to foraging habitat	Same as Alternative 2
Western red-tailed skink (*Eumeces gilberti rubricaudatus*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	This species would be subject to loss or injury if it were in the treatment area during vegetation treatments and construction activities. The species inhabits microhabitat features on the ground such as down logs, rock outcrops, leaf litter and other surface debris. Project activities will remove some of these habitat features. However, design criteria would ensure that not all of these components will be removed, and that there will be enough dead or dying trees left for future down log recruitment. Impacts may be lower if the project work is implemented during winter months when herpetofauna would be hibernating and would not be active within the project areas.	Same as Alternative 2
Spring Mountains comma skipper (*Hesperia comma mojavensis*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Depending on the timing of vegetation treatments, butterflies that feed on and live in live vegetation during some life stage can be immediately affected through direct mortality or loss of food or cover (Pilliod et al. 2006). Impacts are primarily from removal of larval host plants, particularly where there are known colonies or areas that have a high potential for breeding colonies; as discussed above the Cathedral Rock Project area does not have a known breeding colony and potential for one is low. Some mortality of ova might be expected; however, considering the widespread nature of this species, proposed project activities overall would have little negative impact upon its viability or overall habitat.	Same as Alternative 2

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Nevada admiral (Limenitus weidemeyerii nevadae)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	The Cathedral Rock project would create the open/disturbed area preferred by the larval host plant. In the long term, benefits from changes in structural diversity caused by vegetation treatments may increase the amount of light reaching foliage and the forest floor. Disturbance particularly in the case of the larval host plants can be advantageous to these species. The design criteria for larval host plants would also minimize ground disturbance and direct mortality of any potential Nevada admiral larvae occupying those sites. Implementation activities are not proposed during the flight seasons of the species nor when larvae are expected to be active.	The effects of Alternative 3 would be similar to those of Alternative 2. However, the development of new picnic units, parking spaces, and a new road through the area containing larval host plants would likely have more of a direct effect on this habitat component (i.e., increased recreation resulting in host plant trampling and loss of habitat from development of infrastructure). Design criteria for larval host plants would minimize effects from construction activities. Implementation activities are not proposed during the flight season(s) of the species or when larvae are expected to be active (see Wildlife Design Criteria 6).
Spring Mountains icarioides blue (*Icaricia icarioides austinorum*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Vegetation treatments in areas where larval and nectar host plants occur and those areas nearby would result in a more open canopy which creates an environment favorable to the maintenance and localized expansion of host plants (Weiss et al. 1997). Design criteria for larval host plants would also minimize ground disturbance, and therefore direct mortality of Spring Mountains icarioides blue larvae occupying those sites. Implementation activities are not proposed during the flight season(s) of the species nor when larvae are expected to be active. Some mortality of larva might be expected as the species larva is cryptic in winter; however, considering the widespread nature of this species, proposed project activities overall would have little negative impact upon its viability or overall habitat.	The effects of Alternative 3 would be similar to those of Alternative 2. However, the development of new picnic units, parking spaces, and a new road through the area containing larval host plants would likely have more of a direct effect on this habitat component (i.e., increased recreation resulting in host plant trampling and loss of habitat from development of infrastructure). Design criteria for larval host plants would minimize effects from construction activities. Implementation activities are not proposed during the flight season(s) of the species or when larvae are expected to be active (see Wildlife Design Criteria 6).

Table 5. Summary of wildlife and fish species analyzed in detail and determination of effects for Alternatives 2 and 3

Carole's silverspot butterfly (*Speyeria zerene carolae*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	Vegetation treatments in areas where larval and nectar host plants occur and those areas nearby would result in a more open canopy which creates an environment favorable to the maintenance and localized expansion of host plants (Weiss et al. 1997). Design criteria for larval host plants would also minimize ground disturbance, and therefore direct mortality of Carole's silverspot butterfly larvae occupying those sites. Design Criteria W4 and W5 would minimize effects to larval and nectar host plants within the project area. A LOP (Design Criteria W6) would be applied during the larval active feeding periods to prevent cutting while the larvae are actively feeding on the plants. Also, there is the potential for the removal of butterfly nectar plants.	The effects of Alternative 3 would be similar to those of Alternative 2. However, the development of new picnic units, parking spaces, and a new road through the area containing larval host plants would likely have more of a direct effect on this habitat component (i.e., increased recreation resulting in host plant trampling and loss of habitat from development of infrastructure). Design criteria for larval host plants would minimize effects from construction activities. Implementation activities are not proposed during the flight season(s) of the species or when larvae are expected to be active (see Wildlife Design Criteria 6).
Charleston ant (*Lasius nevadensis*)	CA	The proposed project would not negatively or positively impact species viability on the NRA or across the Forest	No additional effects are anticipated beyond those discussed under the General Project Impacts above. Conservation measures in the proposed action (i.e., retention of cover piles, retention of vegetative cover.) would help minimize adverse impacts to habitat and direct mortality of individuals. As the actual distribution of this species has not been documented, impacts of the proposed project cannot be addressed.	Same as Alternative 2

Table 6. Summary of plant species analyzed in detail and determination of effects for Alternatives 2 and 3

Species	Status	Determination of Effects	Rationale for Alternative 2	Rationale for Alternative 3
Rough Angelica (*Angelica scabrida*)	Sensitive and MIS	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The project area has a long history of high levels of recreational use and disturbance (from avalanche) and the plants have continued to exist on the site. And large numbers of plants are extant in Kyle Canyon. • The minimum impacts necessary would be allowed to occur under either alternative via use of a biological monitor to establish areas to avoid and practices during construction to minimize impacts as outlined in the design criteria. Less overall impacts would be expected from Alternative 2 in the long term than the current condition. • Some habitat/occurrence areas now being impacted would no longer be used and allowed to restore. • Rough angelica is highly disturbance tolerant and likely will spread both by seed and rhizomatously into adjacent disturbed areas. • Seed from plants that would be otherwise lost would be used in revegetation in well-suited locations (moister/more northerly and/or where deep soil disturbance/rehab has occurred such as from trenching or site removal). • Environmental education would occur – (such as with signage, brochures, and site host) as well as education of construction crews in avoidance of impact to this species.	Overall, more long-term impacts than Alternative 2 due to additional parking area and picnic table development in the area of known occurrences/ habitat.
Jaeger ivesia (*Ivesia jaegeri*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The project area has a long history of high levels of recreational use and the plants have continued to exist on the site • The use of a biological monitor to establish areas to avoid during construction to minimize impacts (complete avoidance) as outlined in the design criteria. Less overall impacts would be expected from alternative 2 in the long term due to lower recreation use. • Some habitat/occurrences now being impacted would no longer be used and allowed to restore. • Environmental education would occur – (such as with signage, brochures, and site host) as well as education of construction crews in avoidance of impact to plant species.	Same as Alternative 2

Table 6. Summary of plant species analyzed in detail and determination of effects for Alternatives 2 and 3

Hitchcock bladderpod (*Lesquerella hitchockii*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The project area has a long history of high levels of recreational use and the plants have continued to exist on the site • The use of a biological monitor to establish areas to avoid during construction to minimize impacts as outlined in the design criteria. Less overall impacts would be expected from alternative 2 in the long term due to lower recreation use and potential more flexibility in parking lot placement. • Some habitat/occurrences now being impacted would no longer be used and allowed to restore. • Environmental education would occur – (such as with signage, brochures, and site host) as well as education of construction crews in avoidance of impact to plant species.	Same as Alternative 2
Charleston grounddaisy (*Townsendia jonesii*)	Sensitive	May impact individuals, but is not likely to cause a trend to federal listing or loss of viability	• The project area has a long history of high levels of recreational use and the plants have continued to exist on the site • The use of a biological monitor to establish areas to avoid during construction to minimize impacts as outlined in the design criteria. Less overall impacts would be expected from alternative 2 in the long term due to lower recreation use. • Some habitat/occurrences now being impacted would no longer be used and allowed to restore. • Environmental education would occur – (such as with signage, brochures, and site host) as well as education of construction crews in avoidance of impact to plant species.	Same as Alternative 2
Cheat grass (*Bromus tectorum*)	MIS[3]	A moderate risk of NNIS spread and invasion is expected, of which cheat grass is a component	• The limited site disturbance would help confine weed infestations to narrow corridors and within this 35-acre site with easy access for monitoring where infestations may be controlled more effectively. • Weed prevention measures from project implementation, engaging in management of the site, and improved visibility/access by land stewards would allow for improved management of this species in this site. • Federal agencies, including the Forest Service and Clark County have a cooperative program to watch for and eliminate initial weed infestations. While this vigilance may help to slow the occurrence of this species, it is unlikely that infestations can be entirely stopped or eliminated. • Measures to prevent introduction of weeds have been developed for this project, including the use of clean equipment and weed free erosion control materials.	Same as Alternative 2 except the risk of weed introduction/spread would be somewhat higher with increased use.

[3] *also discussed in the Non-Native Invasive Species Report for this project

Table 6. Summary of plant species analyzed in detail and determination of effects for Alternatives 2 and 3

Blue gramma grass (*Bouteloua gracilis*)	MIS	Proposed treatments would occur in areas where this plant is known to occur and direct and indirect effects to individuals would occur. Plants present where construction activities occur are most vulnerable to direct effects.	The proposed actions would incorporate conservation measures including specifications for weed-free equipment and maintaining soil covers to prevent erosion, which would minimize adverse effects to habitat and direct mortality of individuals.	Same as Alternative 2
Silk Tassel (*Garrya flavescens*)	MIS	Plants that would be directly affected by development of infrastructure would be the most vulnerable to impacts such as digging them up in the development of roads, and other infrastructure. If any aboveground portions of silk tassel are removed, they would readily resprout and the effects would be of short duration.	The proposed action would incorporate conservation measures including avoiding when possible/preferred species retention, specifications for weed free equipment, and soil covers. These measures would minimize adverse effects to habitat and direct mortality of individuals. In general, unless mature plants are disturbed during construction it is not likely that this species would suffer any long-term effects over the current condition due to its ability to vigorously resprout after disturbance.	Same as Alternative 2
Aspen (*Populus tremuloides*)	MIS	Treatments are proposed to occur in areas where this plant is known to occur and direct and indirect effects to individuals could occur. In both alternatives, aspen would be retained on the site. Some aspen could be lost during reconstruction of the picnic site.	Conservation measures would minimize adverse effects to habitat and direct mortality of individuals. The general vegetation treatments and site rehabilitation of decommissioned areas would likely generally improve habitat overall for aspen within the 35-acre site.	Same as Alternative 2

Table 6. Summary of plant species analyzed in detail and determination of effects for Alternatives 2 and 3

Clokey paintbrush (*Castilleja martinii var clokeyi*) Charleston pinewood lousewort (*Pedicularis semibarbata var. charlestonensis*) Jaeger beardtongue (*Penstemon thompsoniae spp. jaegeri*) Charleston violet (*Viola charlestonensis*)	CA	By applying design criteria, potential impacts will be nominal at most and not discernibly add to past, current, and reasonably foreseeable actions to these species.	• A project biological monitor is required during construction/treatments to train and supervise contractors to follow species and habitat protection design criteria. Environmental education about the protection of the native flora would be developed for the public. • Species occurrences that have been mapped and others that are found at the time of project layout unit treatments will be flagged and avoided where possible. Vegetation removal would be limited to hand treatments within the flagged areas to minimize impacts to plants, soil, and habitat • These species are widespread across the Spring Mountains. • Burn piles will be located in roads and other non-occupied areas to minimize impacts to soil, soil sterilization, and the potential for weed infestation. • A weed risk assessment will establish invasive weed monitoring and control measures. • A plant monitoring plan will be prepared and implemented to evaluate the treatment effects and provide for adaptive management over time.	Same as Alternative 2

Silviculture / Vegetation Management

Alternative effects will be discussed and compared below using (1) tree stocking, (2) tree species compositions, (3) tree growth and vigor, (4) tree and stand bark beetle risk, (5) tree disease presence and impacts, (6) understory vegetation coverage and vigor. These indicators and alternative effects will largely be discussed in general and qualitative terms (see Silviculture Report, Appendix H).

Alternative 1

Direct and Indirect Effects

No vegetation management would take place in this alternative. Resource objectives would not be met. The high conifer stocking levels would persist. In the absence of bark beetle mortality, stand stocking would continue to increase resulting in increased mortality due to competition for site resources. Stand tree species compositions would continue to transition from dominance by ponderosa pine to dominance by the climax species, white fir, over most of the area. Understory tree species such as mountain mahogany and aspen would continue to decline in vigor and site occupancy except for aspen in the avalanche path, which would continue to thrive. Shrubs, grass, and herbaceous understory species would continue to decline in vigor and site occupancy except for areas such as the avalanche path and the rocky ridge, which would continue to have very open tree canopies.

Trees would continue to generally have low and declining growth and vigor due to high tree stocking. Bark beetle mortality in the white fir would continue to be relatively high, the risk of bark beetle mortality in the ponderosa pine in portions of the area would continue to be high and, sooner or later, mortality can be expected to increase. The large and majestic ponderosa pine would continue to be at risk to bark beetles. Dwarf mistletoes would continue to increase due to the heavier tree stocking and multi-story nature of the stands. The area would not be pushed back toward a more historic stocking level and species composition. The removal of trees deemed hazardous would continue.

Cumulative Effects

In the past, an area east of the picnic site had trees removed by timber harvest. The harvest appears to have selectively removed some of the overstory ponderosa pine but had little lasting effects on stand stocking levels. We suspect that it may have been a salvage removal of bark beetle mortality. The spatial extent of this treatment has not been determined but it appears to have been a narrow strip adjacent to the community of Mount Charleston with acreage less than 100 acres. Also, within the project area, scattered large and old ponderosa pine stumps can be seen. Their small number indicates to us that they may be the result of the removal of dead trees. Their death and removal also had almost no impact on stand structure except for a small reduction in the large tree component and almost no impact on stocking. Other projects or activities within

the area include a fuel break (52 acres) east of Mt. Charleston and vegetation treatment around summer homes (40 acres). The Fletcher Fire burned in Kyle Canyon in 1965 but did not burn any of the white fir-ponderosa pine forest type found in the project area. All together, these latter activities only reduced stocking on roughly 92 acres of mixed conifer, which is a very small portion of the almost 3,200 acres of ponderosa pine-white fir mixed conifer Kyle Canyon.

There are two present activities being considered in this analysis because they may affect white fir-ponderosa pine mixed-conifer stands within Kyle Canyon. The first present activity in the area is the Kyle Canyon portion of the Spring Mountains National Recreation Area Wildland Urban Interface project. This project would treat about 188 acres of white fir-ponderosa pine forest in Kyle Canyon, including the area previously treated as a fuelbreak east of the village. In addition, a present action considered is the Upper Kyle Canyon Trailhead Improvement Project, with an associated EA that was completed in 2004. The project is currently on hold, but for this analysis we are assuming that the project will eventually impact about 7 acres (USDA Forest Service 2006) in the vicinity of Mary Jane Falls, Ski Tow, and Trail Canyon trailheads. There are no future actions being considered here.

All together, past, present, and future activities would reduce stocking on roughly 280 acres, or about 9 percent of the white fir-ponderosa pine forest type within Kyle Canyon. The proportion of the landscape being treated in the forest type by all past, present, and future activities is small.

Alternative 2

Direct and Indirect Effects

At most, 35 acres would be thinned to reduce stocking in Alternative 2. The actual amount would be less because some stands would receive little to no thinning and other stands would receive only scattered thinning. A rough estimate is that only about 20 acres would be substantially thinned. Maps accompanying the analysis in the Silviculture Report show the proposed roads and parking spaces located to require the removal of several large trees.

The tree thinning activity would be “from below” removing small trees before larger ones, but would also retain uneven-aged stand structure with relatively even diameter distributions. In addition, ponderosa pine would be favored for retaining over white fir and pinyon pine. Pinyon pine would be favored for retaining over white fir. Trees considered hazardous, very diseased, or mortally infested by bark beetles would be removed. Very few trees greater than 20 inches DBH would be cut. Needle litter and duff accumulations would be reduced using either mechanical (e.g., raking and removing) or low-intensity prescribed burning. Hardwoods and shrubs would not be removed.

In Alternative 2, the number of parking spaces would increase about 84 percent over Alternative 1. Single picnic units would decrease about 68 percent, group sites would increase from 0 units in Alternative 1 to 11 units in Alternative 2, and toilet facilities would double from 4 in Alternative 1 to 8 in Alternative 2.

Tree stocking in this alternative would be only slightly reduced in two stands, would be moderately reduced in three stands, and would be substantially reduced in three other stands. Most of the trees removed would be white fir except for in two stands, which would also have a number of ponderosa pine removed. Tree species present would be pushed back toward a more historic composition. The natural transition over most of the area from dominance by the seral species (e.g., ponderosa pine that is long-lived and can attain great heights) to the climax species (e.g., white fir that will remain essentially unchanged in terms of species composition for as long as the site remains undisturbed), would be reversed. Reducing tree stocking would increase site resources (e.g., water) available to remaining trees, increasing tree vigor and growth rates. Remaining trees would be more able to resist insects and diseases. Bark beetle risk and mortality would be reduced. Dwarf mistletoe levels would be reduced due to selective removal of the most infected trees and due to the removal of infected midstory and understory trees but presence in the overstory would not be affected. Understory hardwoods, shrubs, and herbaceous vegetation would increase in vigor and some species would increase in ground coverage. Stand structures would be pushed back toward a more historic condition with fewer conifers in the mid-stories and understories and a “flatter” diameter distribution.

The amount of area dedicated to facilities such as roads, picnic units, toilets, and foot paths would increase in the picnic site, and the increase would be concentrated in the western 2/3 of the area because the area in and to the east of the avalanche path would be decommissioned.

Cumulative Effects

Past treatment activities are the same as discussed above under Alternative 1. The present activities in the area are the Kyle Canyon portion of the Spring Mountains National Recreation Area Wildland Urban Interface project (about 188 acres of white fir-ponderosa pine forest in Kyle Canyon) and the Upper Kyle Canyon Trailhead Improvement Project (about 7 acres).

All together, past, present, and future activities would reduce stocking on roughly 298 acres, or about 9 percent of the white fir-ponderosa pine forest type within Kyle Canyon. The proportion of the white fir-ponderosa pine on the landscape being treated by all past, present, and future activities is small.

Alternative 3

Direct and Indirect Effects

Vegetation would be managed in this alternative in a similar fashion as in Alternative 2. The main difference between alternatives 2 and 3 is in the number and location of picnic and parking sites. Alternative 2 appears to largely maintain the picnic site and parking locations along the center loop, in which picnic units are located close to the parking locations. In Alternative 3, picnic units are relocated farther away from the road and parking sites with a system of paths created to connect picnic units to the parking sites.

Under Alternative 3, the same area would be thinned to reduce stocking in the same way. The same maximum of 35 acres and rough estimate of about 20 acres of substantial thinning also applies to this alternative. Maps accompanying the Silviculture Report show the proposed roads and parking spaces in this alternative also requiring the removal of several large trees would be avoided. The tree thinning activity would be as described above for Alternative 2.

In Alternative 3, the number of parking spaces would increase about 167 percent over Alternative 1. Single picnic units would decrease about 27 percent, group sites would increase about 350 percent as compared to Alternative 1, and toilet facilities would increase from 4 in Alternative 1 to 10 in Alternative 3.

The direct and indirect effects discussed above for Alternative 2 also apply to Alternative 3. The transition from dominance by ponderosa pine to white fir would be reversed and stands pushed back toward a more historic species composition. Tree vigor and growth rates would increase and trees would be more able to resist insects and diseases. Bark beetle risk and mortality and risk would be reduced. Dwarf mistletoe levels would be reduced. Understory hardwoods, shrubs, and herbaceous vegetation would increase in vigor and some species would increase in ground coverage.

The amount of area dedicated to facilities such as roads, picnic units, toilets, and foot paths would increase in the picnic site with the increases occurring over the entire area.

Cumulative Effects

Cumulative effects for Alternative 3 for the white fir-ponderosa pine forest type would be the same as above for Alternative 2.

Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (Feb. 11, 1994) requires all Federal agencies to make environmental justice part of each agencies mission, by identifying and addressing, as appropriate, disproportionately high, and negative human health or environmental effects on minority populations or low-income populations.

The picnic area is located close to the community of Mt. Charleston and surrounding subdivisions; however, these communities are not considered minority or low income as a whole. In addition to the absence of health or environmental impacts to low income or minorities in the area, there would be no unique effects from any of the alternatives for this project on any forest user.

This analysis only addresses the reconstruction of the picnic site facilities. The decision will not include whether to charge fees for trailhead parking. It is not anticipated that reconstruction of the picnic site would have negative human health or environmental effects on minority populations or low-income populations under any of the alternatives for this project.

Consultation and Coordination

The following people contributed to the development of this environmental assessment:

Interdisciplinary Team Members

Humboldt-Toiyabe National Forests

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Robert Ronzo	Project Manager
Terrie Jarrell	Engineer
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Annice Ellis	Landscape Architect
Erik Walker	Recreation Staff
Joanne Baggs	Forest Botanist
Judy Suing	Recreation
Kelly Turner	Heritage
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Blaze Baker	Botanist[4]
Eric Moser	Hydrologist/Soils
Vince Archer	Soil Scientist
Larry Amell	Silviculture

[4] Formerly with TEAMS, now with Above and Beyond Ecosystems Enterprise Unit

The Forest Service informed or consulted with the following Federal and State agencies and tribes during the development of this environmental assessment:

Federal, State and Local Agencies

- U.S. Fish and Wildlife Service
- Nevada Department of Wildlife
- Nevada Department of Transportation

Tribes

- Cedar Band of Paiutes Indians
- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Indian Peaks Band of Paiute Indians
- Kaibab Band of Paiute Indians
- Las Vegas Paiute Tribe
- Moapa Band of Paiute Indians
- Pahrump Paiute Tribe
- Paiute Indian Tribe of Utah
- Shivwits Band of Paiute Indians

Appendix A - Public Comments

Table 7. Summary of written scoping comments received for the Cathedral Rock Picnic Area Rehabilitation Project

Name	Date	Comment	Response
Pubic Involvement			
Red Rock Audubon	9/24/07	How was the public notified about this project, other than the mailings to specific individuals or groups? Was there any on-site notification to inform the public about this major project and the reduced parking available during the construction?	There was a legal notice printed in *the Las Vegas-Review Journal* and *Las Vegas Sun* newspapers on August 24, 2007, and a scoping package was mailed to addresses on the Spring Mountains mailing list. Personal contacts were also made by the Ranger, Public Affairs Officer, SMNRA staff and Deputy Forest Supervisor in August and September, 2007. Several meetings have been held with the concessionaire who is currently managing the Cathedral Rock Picnic Area. NDOT has also been notified. We will post on-site notification of construction and locations for alternative parking.
Project Timing/Phases/Design Criteria			
Ursula Wilson-Booth	8/30/07	Voiced concern regarding the development of this project and how activities would insure the preservation of the forest and disturb resources as little as possible. Hopes that this will be the case by closing the existing picnic area and incorporating the avalanche damaged land.	The design of this project is intended to minimize impacts to soils and sensitive species. The forest vegetation will also be thinned to maintain its health. Some trees and other vegetation will be removed to enhance the health of the remaining vegetation. The proposed action locates permanent facilities outside of avalanche paths to protect investments.
Steve Hamilton	9/18/07	Recommends earlier implementation.	We anticipate implementation to begin in the spring of 2009 at the earliest due to the preparation of the Environmental Assessment.
Steve Hamilton	9/18/07	Finds it unreasonable to close the entire picnic area for two years while construction takes place and recommends that a few sites should be provided to the public during the construction phase.	Phased construction is not cost effective. There are picnic sites at Sawmill and Old Mill Picnic Areas on State Highway 156 in Upper Lee Canyon. Groups can make reservations for Foxtail Group Picnic Site on State Highway 156 in Upper Lee Canyon by calling (702) 872-5577.
Red Rock Audubon	9/24/07	Recommends reversing the order of first ripping asphalt before the logging activities (improving forest stand conditions) and the removal of old picnic sites in order to avoid problems caused by dust or tracking mud out onto State Highway 157.	This suggestion will be considered during implementation.

Name	Date	Comment	Response
Red Rock Audubon	9/24/07	Feels that 2.5 years for construction is longer than necessary.	We will try to keep duration as short as possible. Several factors can enter into duration of a project, such as seasonal construction constraints and other unexpected construction delays.
Red Rock Audubon	9/24/07	Always supports any attempts to recycle, but questions how much can be recycled from 40-year old facilities, other than picnic tables.	We often request contractors to recycle as much as possible.
Times of Use			
Red Rock Audubon	9/24/07	Did not specify in the plan if the project area would be open year-round. The project area definitely needs year-round garbage pick up. The plan states the South Trail Head would be closed in winter. We recommend during snow-free winter days the South Trail Head area should remain open for hikers and only close when there is snow.	Operational timeframes are subject to administrative decision. Garbage pick-up will be available during seasons of operation. The Cathedral Rock, South Loop and Little Fall Trailheads on State Highway 157 will be available throughout construction. The newly constructed South Loop trailhead will be closed in winter due to its proximity to the avalanche paths.
Parking			
Dick Taylor	9/4/07	Was unclear and voiced concern that if the "trailhead parking" is eliminated, where will people park who want to take the Fletcher Canyon Trail, a popular and easy hike.	Fletcher Canyon Trail is located over two miles away from Cathedral Rock picnic area. The project will not affect the current parking availability for Fletcher Canyon Trail.
Ed Dodrill (Southern Nevada Regional Trails Partnership)	9/5/07	Recommends planning the facility to eliminate as much backing as possible, making the slots drive-through as much as possible	This will be considered in the design, but our ability to provide pull through slots is limited due to terrain and vegetation.
Red Rock Audubon	9/24/07	Would like to know if the trail heads would be open and accessible for hikers during the 2 ½-year construction phase, especially the South Loop Trail.	Existing parking along State Highway 157 will be available during construction for access to Cathedral Rock, South Loop and Little Fall Trails.

Name	Date	Comment	Response
Red Rock Audubon	9/24/07	Voiced concern that trail head would be open on Hwy 157, but that would only provide parking for a dozen vehicles. Recommends that temporary parking sites are needed as current visitation by hikers often exceeds 50 vehicles per day, especially in summer and fall. Does not see a reason to close trailhead parking on State Highway 157 and to remove the toilet and kiosk after construction is complete.	Visitors may park at the Mary Jane Falls Trailhead and hike up to the South Loop/Cathedral Rock trails on an old existing road that connects the two. This route will be signed during reconstruction. We recommend that visitors try to use the trails during off-peak times (Mon-Fri). The trailhead on State Highway 157 would remain open during construction until the new trailhead parking is available. One of project objectives was to reduce the congestion and parking problems on Hwy 157. We believe that closing the parking and removing the toilets on Hwy. 157 would help to eliminate the congestion.
Red Rock Audubon	9/24/07	Asks if the purpose of this action is to force visitors to enter the fee area.	The answer is no. A need for the project is reduced traffic congestion at the upper end of State Highway 157 and increased parking capacity at trailheads and picnic units.
Red Rock Audubon	9/24/07	Requests information for hikers wanting to park before the gates are opened to the picnic area.	We will work with the concessionaire to ensure early morning trailhead parking is available.
Ursula Wilson-Booth	8/30/07	Concerned over existing trailheads for Cathedral Rock and the South Loop that have become somewhat obsolete, because of lack of parking, parking fees for day hikers and the existing access point from the staircase near the parking lot, which is overused, eroded and impractical for hikers to access the trails.	We agree that there are problems with the existing conditions at Cathedral Rock and that is why we are moving forward with this project to reconstruct the site to better serve the public and to enhance resource conditions.
Grace Sayles	9/1/07	States that approximately 150 cars enter, and out of these, 100 cars have to be turned away due to lack of parking and picnic facilities. Recommends 100 parking spaces and 100 tables and picnic facilities. Also states that here are on an average 2 cars that occupy each picnic unit, and recommends 2 parking spaces should be provided for each picnic unit.	Alternative 2 does provide for two parking spaces for each single picnic site (24 sites) and four parking spaces for each double picnic site (11 sites). Note that double sites can be split into two single sites for a total of 46 single sites. Alternative 3 provides a maximum of 294 parking spaces, but does not differentiate between parking for picnicking and hiking.
Enforcement Issues			
Chris Munhall	9/4/07	Voiced concern that people will still find a free place to park, and there would continue to be enforcement issues.	This is probably true. We realize that there are no perfect solutions, and that law enforcement efforts will still be needed to control traffic and illegal parking.
Picnic Units			

Name	Date	Comment	Response
Red Rock Audubon	9/24/07	Strongly supports constructing clearly defined pathways in the picnic area to eliminate user-created trails, but states that this can only be successful if physical barriers are placed in strategic places.	We agree. The placement of the pathways will be critical. We will construct clearly defined pathways and install appropriate barriers where necessary.
Ursula Wilson-Booth	8/30/07	Voiced concern that existing group sites take up enormous space and are hardly used effectively except on rare occasions. States that there are group sites available in other locations, and with the double picnic sites, these can also be used by somewhat larger gatherings.	We are evaluating different approaches to group uses in Alternatives 2 and 3. Under Alternative 2, there will be no large group sites. Alternative 3 provides nine group sites accommodating up to 40 persons each. Sizes and configuration will vary based on anticipated need, available parking spaces, and site limitations.
Signage			
Steve Hamilton	9/18/07	Recommends placing a sign, directing hikers where to find the South Loop trail as people are leaving the trail and going straight up, then getting lost because there is no sign directing them to go down to find the South Loop trailhead.	We agree we need to put up signs and we anticipate installing signs in the near future.
Red Rock Audubon	9/24/07	Regarding the installation of an educational sign to interpret the natural resources, commenter states that not only is there Palmer's chipmunk and a sensitive butterfly species, but also a number of sensitive and endemic plants, including *Angelica*, that need to be included in the educational information.	Sensitive species will be addressed in the interpretive plan.
Grace Sayles	9/1/07	Commenter feels that it would be very beneficial if vegetation were identified and marked so that visitors would have a better understanding and appreciation of what exists in this area.	The interpretive plan will provide methods for visitors to gain a better understanding of the natural environment on the NRA.
Utilities			
Dick Taylor	9/4/07	Voiced concern about visuals and recommends that utility wires be placed underground and avoid using more utility poles.	Utility lines will be buried.
Facilities			

Name	Date	Comment	Response
Dick Taylor	9/4/07	Voiced concern over closing and rehabilitating the parking area on HWY 157, as well as removing the information kiosk. Feels this is important and convenient to first-time visitors to the area.	Information signs will be placed at the newly constructed trailheads.
Sensitive Areas			
Nevada Department of Wildlife	9/13/07	Agency suggests that park patrons who use trails should be directed away from designated biodiversity hotspots, including springs and riparian areas with appropriate signs and natural traffic control devices such as boulders or strategically planted shrubs, or fencing where practical. States that these sensitive areas should not be touted as destinations for carrying out day use or overnight camping activities.	All actions include resource-specific design criteria that guide the manner in which the actions are implemented to minimize or reduce anticipated effects. Overnight camping is not permitted in the Cathedral Rock Picnic Area.
Nevada Department of Wildlife	9/13/07	Agency requests that the U.S. Forest Service ensure that wildlife not be adversely impacted by construction activities, improved parking facilities, or increased foot traffic on upgraded trails. Agency states that weather-related events, such as avalanches, have changed the vegetation in the area, and although conditions are still favorable for a diverse array of high elevation species, these events have reduced the number of cover sites.	All actions include resource-specific design criteria for biological species that guide the manner in which the actions are implemented.

Name	Date	Comment	Response
Nevada Department of Wildlife	9/13/07	Agency recommends that at least five cover sites per acre are maintained in the new picnic and trailhead, like the one's discussed during scoping for the hazardous fuels reduction project (i.e., protocols for down and dead trees, snags, and other forest litter as refugia for the Palmer's chipmunk as delineated in the Conservation Agreement for the Spring Mountains National Recreation Area Clark and Nye Counties, Nevada (April 1998)).	Design criteria would provide a minimum of 10 wildlife cover sites per acre within developed or primitive recreation sites by maintaining or adding dead and down wood material or rocks at appropriate locations.
Water			
Barbara Orcutt	9/4/07	Voiced concerns about her well, which is located downhill from one of our proposed leach fields.	The private well has been identified on our maps and the USFS would comply with County standards and go through a permitting process regarding septic systems. The leach fields would be placed far enough away that there would be no impacts to the well.
Steve Hamilton	9/18/07	Alerted the Forest Service that the water source (which originates at Little Spring) for the summer homes in Kyle Canyon has a pipe that goes through the picnic area. Commenter wanted to make sure the Forest Service knew this so it won't get dug up and broken.	This water pipe has been identified on our maps. The water line to the picnic site is supplied by Las Vegas Valley Water District. The water line in the picnic site is only for the picnic site and doesn't supply anyone else. The water for the summer homes is supplied from a well and storage tank located on a mesa up on the mountain from Cathedral Rock. It is on its own separate system.
Red Rock Audubon	9/24/07	Commenter states that in this area with limited water resources there is potential for a significant impact on the water supply, and asks if the expected water usage been evaluated, and how does it fit in the conservation plan for the Kyle Canyon area	Regarding limited water sources in the area, and the use of flush toilets impacting the water supply in the area, there are already flush toilets there now, and the design is feasible for long-term, low-flow toilets.
Grace Sayles	9/1/07	Commenter states repairs are needed to water pressure and water leaks.	The water system will be replaced.
Trailhead			
Chris Munhall	9/4/07	Voiced concern that trail users will need to now park in the day use picnic site, which is a fee area, and disagrees with charge for parking to use a trail.	Alternative 2 allows for flexible fee structure by separating the trailhead parking from the picnic area. Alternative 3 does not allow for this flexibility. This analysis only addresses the layout and design of the facilities. The decision will not include whether to charge fees for trailhead parking.

Name	Date	Comment	Response
Barbara Washington	9/1/07	Commenter objects to placing the trailhead parking within the perimeter of the day use area, which would require hikers bringing vehicles to pay the parking fee. This type of fee collection puts the opportunities for hiking some of the Mt. Charleston trails off-limits to those in the community who are unable to afford the fee.	Please refer to the previous response to trailhead comments.
Barbara Washington	9/1/07	Commenter is concerned about the incremental increase in fees serving to line the pockets of the concessionaires.	Please refer to the previous response to trailhead comments.
Ursula Wilson-Booth	8/30/07	Commenter disagrees that picnic site is managed by a subcontractor and that the parking fees for day hikers were so high. Commenter hopes that the availability of hosts will eliminate an outsourcing of the maintenance on site, and if fees are to be charged, they should differentiate between picnickers and hikers; also, the federal passes should be accommodated in the fee structure.	Management of the picnic area is an administrative decision. The picnic area is currently managed by a concessionaire. What the fees are and how they are determined will not be part of the decision.
Use			
Ed Dodrill (Southern Nevada Regional Trails Partnership)	9/5/07	Commenter states that with the growing population, 100 [trailhead] spaces may prove to be too small.	Alternative 3 provides for a maximum of 294 parking spaces for picnicking and trailhead use. Due to the terrain, vegetation, sensitive plants and wildlife, and private property there is a limit to the amount of parking that can be available on National Forest System lands
Chris Munhall	9/4/07	Commenter disagrees with decreasing number of picnic sites, and recommends developing additional picnic sites in area outside the avalanche path.	Alternative 3 was designed with the maximum number of People at One Time (PAOTs) on the site (approximately 700). More picnic units are included.
Barbara Orcutt	9/4/07	Voiced concern that with the decrease in picnic sites, people will try to park at the end of the road (HWY 157), adjacent to private property.	Alternative 3 increases the number of picnic units and parking spaces.

Name	Date	Comment	Response
Grace Sayles	9/1/07	Voiced concern of the lack of parking and picnic facilities for users every weekend, and having to turn cars away.	Alternative 3 was designed with the maximum number of People at One Time (PAOTs) on the site (approximately 700). More picnic units are included. Due to the terrain, vegetation, sensitive plants and wildlife, and private property there is a limit to the amount of parking that can be available on National Forest System lands
Accessibility			
Grace Sayles	9/1/07	There is a need for handicap facilities.	Facility designs will comply with current accessibility standards for people with disabilities.
Grace Sayles	9/1/07	There is a need for more directional signage on streets within [picnic site] as the streets are one way, and presently it is easy to go the wrong way.	Appropriate and adequate signage would be provided.

Appendix B - Project Design Criteria

The design criteria for botany and wildlife were developed to conserve and to reduce the potential for impacts to wildlife and plants in balance with the practical rehabilitation of the Cathedral Rock Campground.

The types of potential impacts in this type of project can include permanently altered sites resulting from buildings, roads, camp sites, parking lots and installation of underground infrastructure (i.e., water and power lines), long-term changes from use (i.e., increases in human use or changes in pattern of use in the area), and temporary use areas (e.g., sites disturbed during construction and rehabilitation activities such as supply storage areas and access roads). Some design criteria are to be fully followed in all cases such as in noxious weed prevention. In other cases they are to be implemented "where possible." "Where possible" means that in cases where a preferred option exists but resources of concern will be impacted and suitable feasible alternate options are available that would result in fewer/no impacts – the latter option would be selected. For example while it might not be preferred to shift the location of an outhouse it will be attempted if alternate sites exist that meet engineering standards and it is feasible to do so. "Where possible" may also mean that the least impacting method (i.e., tool, equipment, process) needed to accomplish a task will be used (e.g., not to use a piece of heavy equipment that causes high degrees of incidental ground disturbance when it is feasible to use less impacting equipment).

Specific rehabilitation recommendations from soil disturbance (e.g., weed free materials use, use of native plants) have been developed for disturbed areas in the design criteria. In addition, long- term environmental education about the endemic species of the area and ways members of the public can reduce their effects on use of the area would be developed for this area. This was not performed in the past and is intended to reduce the impacts from any increases or changes of site use.

Table 8. Project Design Criteria

No.	Wildlife
W1	**Cover Sites** (Palmers Chipmunk, reptiles, small birds and mammals) - Provide a minimum of 5 wildlife cover sites per acre within developed or primitive recreation sites by maintaining or adding dead and down wood material or rocks at appropriate locations. (SMNRA GMP Standard 0.38). **Intent:** Woody debris piles provide important cover/foraging sites to a number of species (e.g., Palmers chipmunk and other species (small mammals, reptiles, neotropical birds)).
W2	**Snags -** Retain all snags that do not pose a threat to public safety or extreme fire danger. Pinyon/Juniper, Mixed Conifer, and Bristlecone Pine Land Type Associations in all cases. (SMNRA GMP Standard 0.36). Allow collection of snags only between the months of October and the end of February (SMNRA GMP Standard 0.61). **Intent:** Snags are retained to provide habitat for cavity nesting animals (e.g., bats, woodpeckers, chickadees, flammulated, western screech, and pygmy owls) and animals that feed upon the insects living within dead trees.

W3	**Pile Treatment -** Remove and chip if possible If burning piles use the following order of preference: 1. cut and burn material immediately 2. pile and burn material within the season of treatment 3. if it's not possible to burn material within the season that piles are created, then, disassemble and reassemble the pile before burning Prior to removing/burning brush piles, disturb the piles of brush to encourage animals to move out of the piles. When possible, light piles directionally to encourage wildlife to exit. Locate burn piles on already disturbed sites such as dirt roads, clearings, or parking areas where feasible **Intent:** Minimize direct mortality of animals that use dead and down piles for cover sites.
W4	**Butterfly larval host plants** - Avoid where possible occurrences of larval host plants: (quaking aspen and sulfur-flowered buckwheat), lupine (*Lupinus argenteus*), rubber rabbitbrush, and linear-leaved paintbrush. Areas containing larval host plants will be mapped/designated by biologist and where possible given a 5 meter/15 foot buffer. Minimize ground disturbing mechanized equipment in areas containing larval host plants. **Intent:** Butterfly larvae occupy larval host plants and the surrounding duff and soils; these design criteria will prevent direct mortality of adults and larvae in the most important locations. Additional specifics on avoidance are listed in criteria B1.
W5	**Butterfly nectar host plants -** Minimize direct impacts, soil compaction, and disturbance from ground-based mechanical equipment, etc. Where possible avoid individuals and occurrences of nectar host plant populations: rough angelica, spreading dogbane, Arizona thistle, golden-eye, and woods rose. Areas containing nectar host plants will be mapped/designated by biologist/project monitor and dust-causing work would not occur adjacent to any protected occurrences while they are blooming. **Intent:** Ensure nectar host plants remain available for the butterfly species that utilize the area. This likely would coincide with the neotropical bird limited operation period and have little additional effect on the project.
W6	**Raptors, neotropical birds, breeding birds, small mammal, and reptiles** Limiting operating period (LOP) – no vegetation manipulation from March 15 – July 31 ***Exception(s) in consultation with staff Wildlife Biologist; survey for breeding songbirds and goshawk, flammulated owl and other raptors **Intent:** Implementing treatments outside the breeding season will minimize direct mortality of individuals.
W7	**Public Information/Education** - Design and Install information and educational signs in accordance with Interagency Agreement #14-48-0001-94605 between the FS and USFWS for Spring Mtn NRA. Signs will provide information on low impact recreation and ecological resource protections (CA 7.7) Design and Install signs specifically addressing Palmer's chipmunk conservation at all developed recreation sites located within its habitat (CA 7.8) **Intent:** Contribute towards conservation of sensitive resources
W8	**Education of implementation crews** - Implementation activities in areas of sensitive species habitats will include oversight or coordination with wildlife staff/project monitor. Coordination may include training of crews in: the identification sensitive species; avoidance of impacts to sensitive species (e.g., identification/avoidance of wildlife use/habitat elements, including nests, cavities, and snags); notification of the Forest Service Resource Specialist if a sensitive, threatened, or endangered species is encountered; and that individuals must not be picked up or removed without a permit. **Intent:** Prevent adverse impacts to sensitive resources

No.	Botany
B1	**Avoid all occurrences of Jaeger's ivesia, during project layout and implementation with a 5 meter/15 foot buffer -** Where possible avoid individuals and occurrences of (listed in order of priority); rough angelica, Charleston grounddaisy, and Charleston violet during project layout and implementation where possible with the same 5 meter/15 foot buffer. The lowest priority of avoidance (due to ongoing changes in management) are: Hitchcock bladderpod, Charleston pinewood lousewort, and Clokey's paintbrush – avoidance consideration of these species would be determined by: 1) their presence with other species to avoid, and 2) the ease of avoidance with the same 5 meter/15 foot buffer. Flagging or snow fencing for avoidance must be done during the peak growing season for each species (see Spring Mountains NRA Sensitive Plant and Butterfly Plant Primary Survey Time Periods table). Hand treatments may be used only within flagged areas in consultation with the unit biologist or biological monitor at any time of year to prevent direct impacts, soil compaction, and disturbance from ground-based mechanical equipment, etc. Mechanical work can be done outside the flagged/fenced areas following Design Criteria for other factors as soil erosion, weed prevention, etc. **Implementation:** A Project Biological Monitor will identify, locate and flag or snow fence plant polygons and occurrences (butterfly host plants and other plant locations to avoid), and guide contractors in avoidance techniques. The Project Biological Monitor will train the contractor and their staff in avoidance techniques and work with them in their initial unit treatments until the Monitor is satisfied the contractor can operate independently. Thereafter, if the Monitor or Contractor determines there is a need for onsite monitoring during treatments (such as in units with high priority species, difficult terrain, etc), the Monitor would be on site to guide implementation.
B2	**Collect seed from rough angelica and Hitchcock bladderpod -** Collect seed from rough angelica and Hitchcock bladderpod to use in revegetation in restoration/decommissioned areas in suitable habitat. Areas suitable for revegetation with rough angelica and Hitchcock bladderpod will be defined prior to implementation of revegetation/restoration activities. Include these species in interpretive materials for the area. **Intent:** Utilization of native plants for restoration, use of seed from plants that would be lost from construction, and to maintain the genetic variability of those species in the area.
B3	**Weeds -** Employ USFS and Humboldt-Toiyabe National Forest Best Management Practices for Weeds. Especially insure that equipment coming and going from treatment areas, mulches, etc. be weed-free (i.e., washing). Use native plant material and/or weed-free mulches for rehabilitation of disturbed areas. Prior to initiating this project, a weed risk-assessment must be prepared (see Humboldt-Toiyabe National Forest Noxious Weed Control Program EA, Appendix B) and develop a weed mitigation plan per the US Forest Service Manual 2000, Chapter 2080 policy for Noxious Weed Management.
B4	**Fuel Reduction** - If burn piles are used to reduce biomass, locate burn piles in disturbed areas (e.g. gravel roads, open rocky areas in washes, etc.) to minimize impacts to soil, soil sterilization, and the potential for weed infestation. Limit the number of burn piles by spacing them as far apart as possible. Feed brush and limbs into burn piles as it is cut within or between units. Do not pile burn in occupied habitat (e.g., within flagged/fenced areas). Especially on sloping ground that will be more erosion prone from vegetation removal/construction activities, leaving slash or wood chips is desirable to deter erosion. Chipping woody material and blowing back over disturbed area is okay up to a maximum depth of 2 inches; however, this depth should only occur in scattered patches and not cover more than 50% of the area where chips are scattered. If chips will be deeper, they need to be removed and stored at other locations (or made available to local residents for landscaping, etc.)
B5	**Monitoring** - Prior to initiating the project, a monitoring program will be developed and implemented to evaluate and document direct, indirect, and cumulative effects of construction activities on sensitive species and to evaluate the seeding/recruitment success of seeding rough angelica, Hitchcock bladderpod, and other butterfly host plants. Work with NRA botanists to establish pre-and post-control and treatment monitoring plots.

B6	**Remaining Trees and Shrubs** - In selecting shrubs and trees to remain in a treatment area, select for less fire-prone native shrubs (including snowberry, serviceberry, ephedra, etc.) and trees (such as aspen/ cottonwood, Rocky mountain maple, water birch, Gambel oak, etc.). Emphasize removing fire-prone shrubs (including manzanita, sagebrush, snakeweed) and trees (i.e., mountain mahogany, white fir, juniper, pinyon pine) where they are in excess of landscaping needs.
No.	**Silviculture**
S1	Do not cut, and minimize damage to, existing deciduous trees and shrubs, (e.g., aspen, elderberry, mountain mahogany, oak)
S2	Reduce needle and duff accumulations where needed by either mechanical means (e.g., raking and removing), or low-intensity prescribe fire to enhance growth and establishment of understory vegetation.
S3	Assess tree hazards within and immediately adjacent to the day use area using established methods and criteria (e.g., "Tree Hazards: Recognition and Reduction in Recreation Sires", http://www.na.fs.fed.us/spfo/pubs/hazardtrees/treehazards/thazards.pdf). Remove trees considered hazardous to public safety and private property.
S4	Reduce tree stocking to a level in which the large ponderosa pine in the stands would not be considered at risk to mountain or western pine beetle mortality and to which bark beetle activity would be considered no more than endemic. This level would generally be below the "upper management zone" in terms of stand density index.
S5	General species preference for thinning trees should be: bristlecone pine, ponderosa pine, single-leaf pinyon pine, Utah juniper, and white fir in descending order of preference to retain. This order of preference may be modified for portions of the project area to take into account site specific factors.
S6	Tree thinning should be "from below" to favor retaining larger trees over smaller trees and should use the uneven-aged single tree selection system.
S7	Vary spacing of leave trees during thinning to retain or enhance the natural appearance of the forest. Retain small 3-6 tree groups of small diameter trees in strategic locations to create future groups of large trees, retain visual diversity, and retain picnic site screening.
S8	Remove all young conifers (less than 14 inches diameter at breast height) from around aspen stems up to a distance of 20 feet from the aspen.
S9	Sporax (sodium tetraborate decahydrate) would be applied to all cut conifer stumps greater than 12" in stump diameter of live trees and dead trees that have died within the last year to prevent infection by annosus (Heterobasidion annosum) root disease.
No.	**Watershed**
WA1	Minimize disturbance area by using minimum spacing between cable corridors of 100 feet.
WA2	Burn piles on all cable units are placed on existing areas of disturbance or trails and landings whenever possible.
WA3	Disturbed areas on all cable units that have had ground cover removed should be treated by re-establishing cover composed of material 3 inches or less in diameter, with preferential use of fines such as remaining litter, duff, leaves or green foliage on limb wood.
WA4	Remaining ground cover on treated areas will be approximately 50%. Units affected are all with cable-based removal.
No.	**Heritage**
H1	Survey the project area per Section 106 of NHPA and Forest guidelines.
H2	If unanticipated resources are discovered during project implementation, all work will stop in the vicinity until cleared by a professional cultural resources manager.
H3	Avoid impacts to 26CK006347; 04170503274; TY 3274.
H4	Maintain a host and/or Forest Service presence within the recreational area to discourage and/or prevent vandalism.

No.	Recreation and Visuals/Scenery Management
R1	Accessibility for Persons with Disabilities Improve accessibility as much as possible and ask for deviation where slope or other condition does not allow full access. At least 20% of the travelways to sites would be fully accessible. All picnic pads at all sites would be fully accessible as well as the site furniture. Toilet buildings will be fully accessible. Accessible parking and travelways will be provided at all toilets.
R2	Separate Uses Separate the picnic and trailhead uses by distance and fences where needed to avoid trailhead trespass into the picnic site. Picnic and trailhead uses should be designed to allow for separate fee collections.
R3	Design Guidelines and Architectural Theme Follow *Spring Mountains National Recreation Area Built Environment Image Guide*, Feb. 2007, for the design of facilities. Renovate the picnic site in a similar style to the original CCC campground with appropriate consideration of historic precedents as the original but bringing everything up to date. One should have the feeling that they are in a convenient, but historic old picnic site done with great care using local natural resources.
R4	Season of Use Maintain the site open for use as long as possible, and fit into East Side Management strategy for recreation facilities.

Appendix C - Past, Present and Reasonably Foreseeable Future Activities

This appendix discloses a summary of actions considered in the cumulative effects sections of each resource in Chapter 3. The size of the cumulative effects analysis area varies by resource. Some resources, such as watershed and wildlife resources, include a larger scope of analysis than the project area.

Federal Activities

Numerous Forest Service actions have been implemented, are ongoing, or are planned within the SMNRA. These actions are summarized below.

Past Action	Location	Project Description	Decision Date	Implementation Date
Sign and Low Frequency Radio	Throughout SMNRA	Implement signage program/information radio station.	No date	02/28/08
Desert View Rehabilitation Project (EA)	State Rd. 158	USFS proposal to improve the Desert View Overlook (State Road 158) to provide for traffic safety at the turnout and improved interpretive abilities and viewscapes. Includes construction of off-highway parking lot and ADA accessible trail.	05/09/2008	09/2008
Spring Mountains National Recreation Area Motorized Trails Designation Project (EA)	Throughout SMNRA	This project was initiated because of the need to prevent the creation of new unofficial motorized trails, to protect the natural and cultural resources of the area from the impacts of vehicles traveling off roads and motorized trails and to provide OHV (Off-Highway Vehicles) users with recreation opportunities compatible with the resources on the Spring Mountains National Recreation Area.	6/2/2004	09/1/2004

Present Action	Location	Project Description	Decision Date	Implementation Date
Interpretive Signs and Displays	Throughout NRA	Install informational/interpretive signage	07/30/08	11/30/09

Present Action	Location	Project Description	Decision Date	Implementation Date
Fuel Reduction to Reduce Wildland Fire Danger adjacent to developed communities (EA)	Kyle, Lee, Lovell and Trout Canyons, Mountain Springs, Cold Creek	Implementation is ongoing. USFS proposal to mechanically reduce fuels (vegetation) on 2,900 acres of NFS lands adjacent to communities rated by the Nevada Fire Safe Council as at "high and extreme" risk of wildfire.	12/20/2007	03/2008
Cathedral Rock Day Use Area Reconstruction (EA)	Section 36, T19S, R56E, MDB&M. At the upper terminus of State Route 157 in the community of Mount Charleston.	USFS proposal to remove the existing Cathedral Rock infrastructure and replace it with new facilities and infrastructure, and convert a portion of the existing picnic site into trailhead parking for adjacent trails.	03/2009	06/2009

Reasonably Foreseeable Future Action	Location	Project Description	Decision Date	Implementation Date
Resource Protection Devices	Throughout NRA	Design devices to guide people in developed areas.	05/01/09	10/01/09
Upper Kyle Canyon Campground Day Use Complex (EA)	Kyle Canyon	USFS proposal to development a four-season recreation complex in the vicinity of Mary Jane Falls, Ski Tow, and Trail Canyon Trailheads. Note: This project is on hold; EA was completed November 2005 and the draft DN/FONSI was completed March 2007, but USFWS did not concur with effects determination. Alternatives being developed at this time.	10/2009	06/2009
Archery Range	Deer Creek	Develop picnic site and campgrounds	06/01/11	06/01/14
Mahogany Grove	Deer Creek	Develop picnic site and trails	05/01/14	06/01/16
Foxtail Group Picnic Area	Lee Canyon	Develop winter play/renovate picnic site. Note: This project is included in cumulative effects primarily because it is a day-use picnic site and may take the pressure off Cathedral Rock in terms of visitor numbers and visitor impacts from day-use picnic activities. It is on the Deer Creek Highway (highway running between	06/01/13	06/01/14

Reasonably Foreseeable Future Action	Location	Project Description	Decision Date	Implementation Date
		and connecting Lee and Kyle Canyons)		
Fencing and Interpretive Signage (Law Enforcement)	Kyle Canyon	Install winter fencing to prevent winter play at Cathedral Rock	09/30/08	11/30/08
Rd 6- Fuel Reduction in the SMNRA	Throughout NRA	Implement the removal of trees and brush for fire protection. Note: This project will encompass the WUIs that were not considered in the first round of fuels reduction projects and will start in 2011 and continue through time.	06/01/08	08/30/11
Middle Kyle Complex (EIS)	LEGAL – Sections 14-17, 21-29, 32, 34-36, T19S, R56E & Sections 18, 19, 30, 31, T19S, R57E MDB&M. Middle Kyle Complex	USFS proposal to construct a recreation complex (day-use picnic sites) to provide a variety of recreation and education opportunities in an environmentally sensitive manner. Opportunities could include a visitor center, campgrounds, picnic site, and multiple trail systems.	8/2009	3/2010
Cathedral Rock Trails Project	Kyle Canyon	Pre-NEPA planning. The trails project would involve trail rehabilitation and development of at least two new trails, including connector trails to increase recreation opportunities by connecting trails. The trails project also includes possible improvements to the overlook and trail amenities.	09/2010	04/2011

New Activities on Private Lands

Interagency and private planning efforts are underway for additional fuels reduction projects that would occur on private lands in the project area. It is reasonable to assume that development of private land in the community would continue, particularly within Kyle Canyon.

Roads

It is generally accepted that lower road densities have less adverse effects on wildlife and have a lower risk of weed introduction and spread, which can alter native ecosystems. There are low road densities (generally less than 2 miles per square mile) in the project area and in the SMNRA overall.