

Lake Mead

National Recreation Area
National Park Service
U.S. Department of the Interior



LAKE MEAD LODGE DISCONTINUATION AND ADAPTIVE RE-USE STUDY

ENVIRONMENTAL ASSESSMENT



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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

Introduction

The National Park Service (NPS) is considering options for the future of Lake Mead Lodge (Lodge) at Lake Mead National Recreation Area (NRA). The Lodge provided concessioner-operated visitor services until those services were discontinued and operations ceased at the end of 2008. The four-building complex has been sitting vacant since that time. The NPS has prepared this environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council of Environmental Quality's Regulations for Implementing the National Environmental Policy Act (1993), and NPS Director's Order 12: Conservation Planning, Environmental Impact and Decision Making (2000).

The EA evaluates the No Action alternative and five action alternatives. The alternatives analyzed are:

- Alternative A: No Action
- Alternative B: Demolish Lake Mead Lodge and Restore Site to Natural Condition
- Alternative C: Rehabilitate Entire Site for NPS Use
- Alternative D: Mothball Annex and One Lodge Building and Rehabilitate Two Buildings for NPS Use
- Alternative E: Demolish Annex and One Lodge Building and Rehabilitate Two Buildings for NPS Use
- Alternative F: Rehabilitate Site for Non-Commercial Use by Non-Profit Organization.

Also included is a discussion of alternatives that have been ruled out and justifications for their elimination. The EA analyzes impacts of the alternatives on the human and natural environment. It outlines project alternatives, describes existing conditions in the project area, and analyzes the effects of each project alternative on the environment. Alternative F has been identified as the Management-preferred alternative. However, this alternative can be implemented only if a qualified non-profit organization steps forward with both the interest and financial capability to rehabilitate and maintain the site for a non-commercial use authorized by the NPS. If no such organization is identified, Alternative B would be the alternative preferred for implementation.

Purpose and Need

Lake Mead Lodge is a historic resource that has been vacant for over two years. The Management of Lake Mead NRA must make a decision about the site's future use in order to avoid the environmental impacts and operational issues that stem from prolonged vacancy and lack of regular maintenance, sometimes referred to as benign neglect. The

Lodge's former purpose, to provide commercial overnight accommodations to park visitors, was determined to be no longer necessary and appropriate, given the abundance of lodging options available in nearby communities and the NPS policy not to provide services that either are, or could be, provided by others in the local area. The park is now exploring options for the site that do not involve commercial activities. A thorough analysis of the impacts to the natural and human environment is needed before such a decision can be made.

Background

Lake Mead Lodge, originally called Hualapai Lodge, was built in 1941 by NPS concessioner Grand Canyon Boulder Dam Tours, Inc. and consisted of an administration building and two lodging buildings. A fourth "annex" building and a swimming pool were added in 1954, resulting in the present layout (Figure 1). The Lodge played a significant role in the early development of commercial operations and tourism in the park, offering the first overnight accommodations on Lake Mead. The Lodge originally included a dining room and bar and it was a popular nightspot for local Boulder City residents as it was the only bar in the area. The Lodge was also a favored weekend getaway of Las Vegas-based celebrities such as Andy Williams, Don Rickles, and Harry Belafonte. In 1961, McCullough Corporation took over management of the Lodge and built Lake Mead Marina, which included the world's largest floating restaurant, resulting in the closure of the Lake Mead Lodge restaurant and bar. Seven Crown Resorts took over the operation in 1979 and its operations ceased at the end of 2008.

In 2007, due to a number of changes, including for example the pending sale and relocation of the floating docks and structures at Lake Mead Marina, dropping water levels, and the availability of similar services in the local area outside the park, the NPS made a decision to discontinue commercial lodging services at this location. This discontinuation of commercial services became effective December 31, 2008.

The NPS had initially determined that Lake Mead Lodge would be demolished, but after a study was completed determining that the Lodge was eligible for listing on the National Register of Historic Places, the NPS began the process of formally evaluating the impacts of either demolishing the lodging complex or adaptively reusing it for non-commercial purposes.

Project Area Location

Lake Mead NRA is located in southeastern Nevada and northwestern Arizona (Figure 2). The park is approximately 1.5 million acres in size and includes both Lake Mead, formed by Hoover Dam, and Lake Mohave, formed by Davis Dam (Figure 3). Lake Mead Lodge is located near Boulder Beach at 322 Lakeshore Road (Figure 4).

Figure 1. Site Layout of Lake Mead Lodge (from MACTEC 2010).

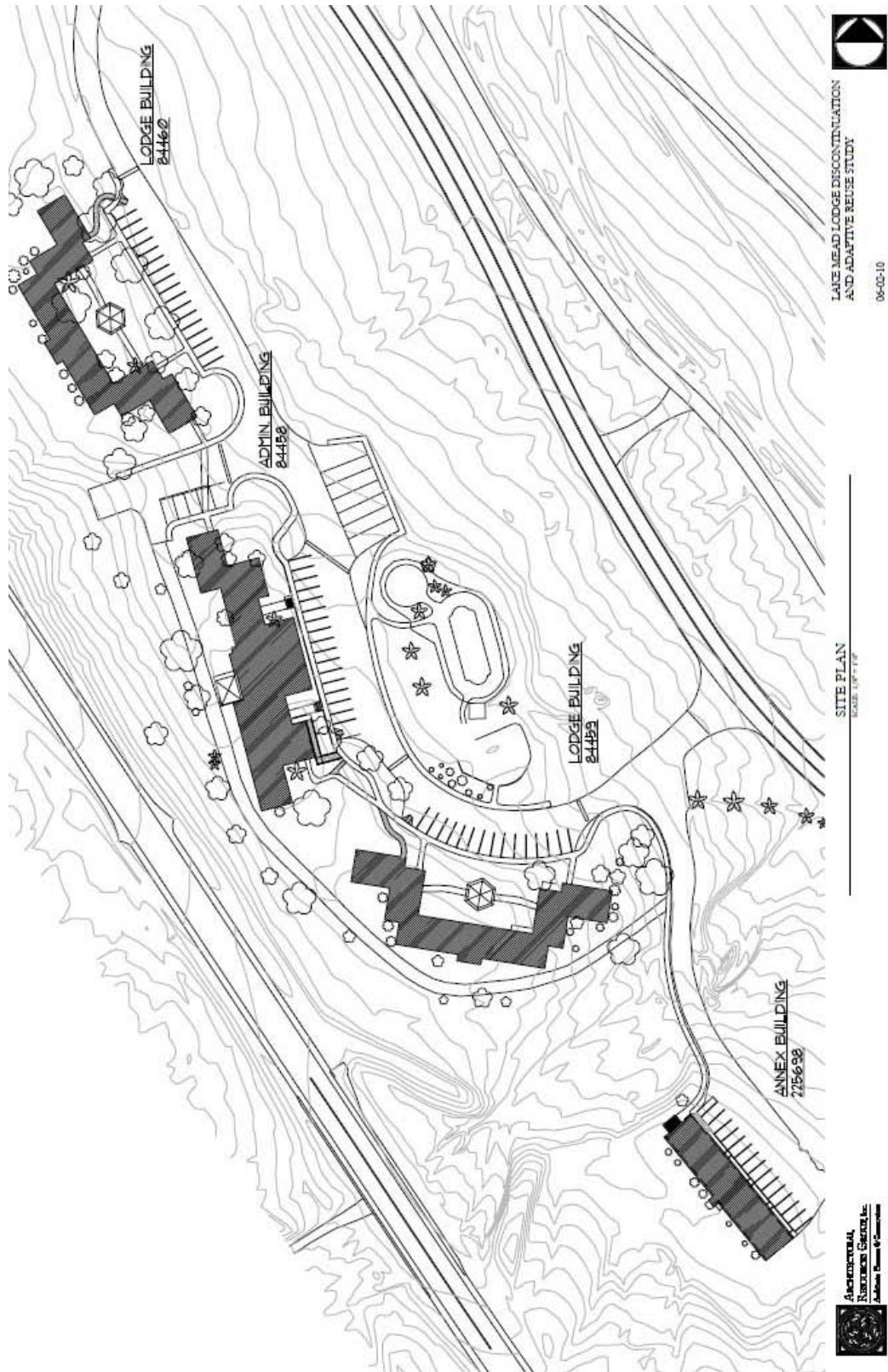


Figure 2. Regional Map
Lake Mead National Recreation Area

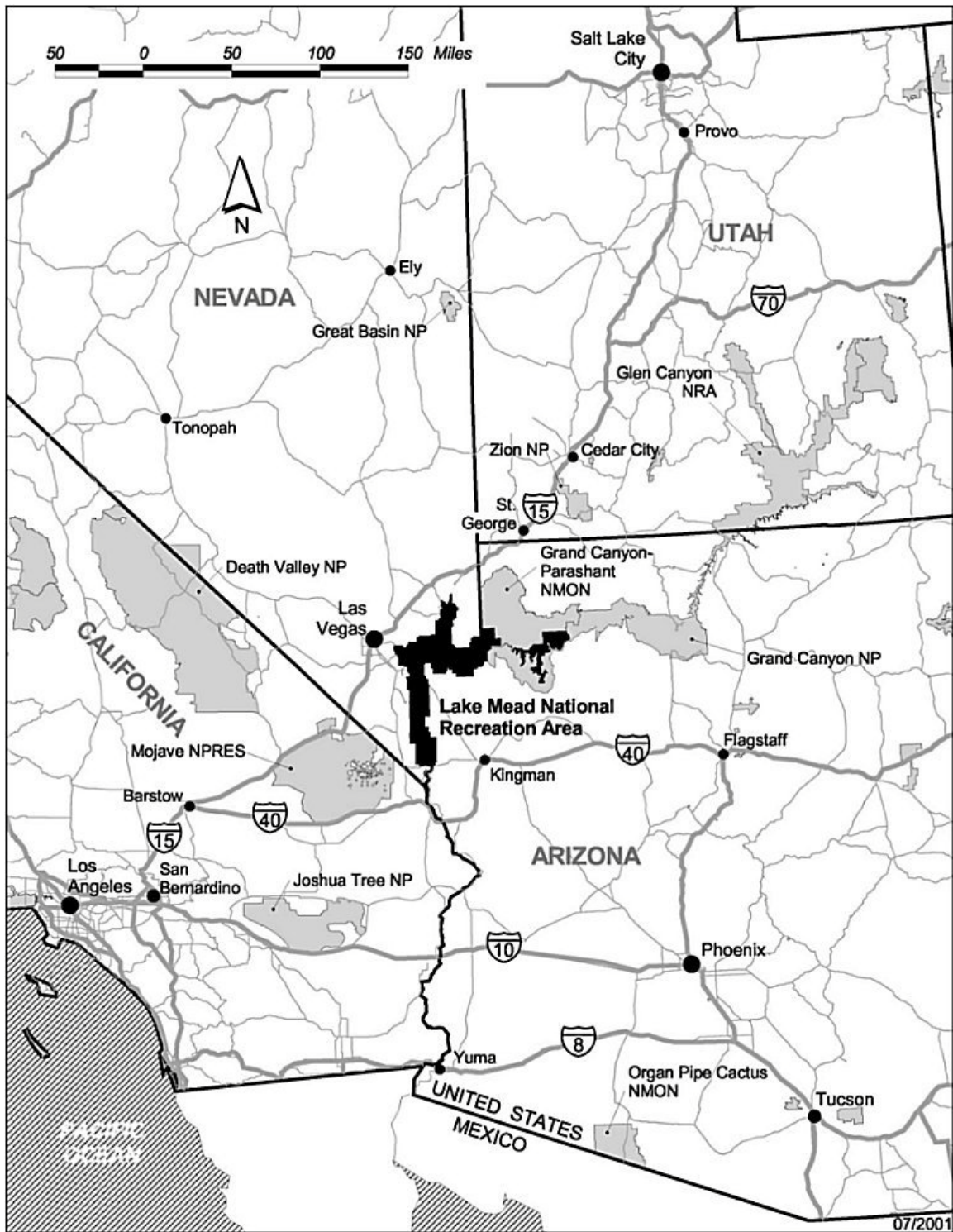


Figure 3. Area Map
Lake Mead National Recreation Area

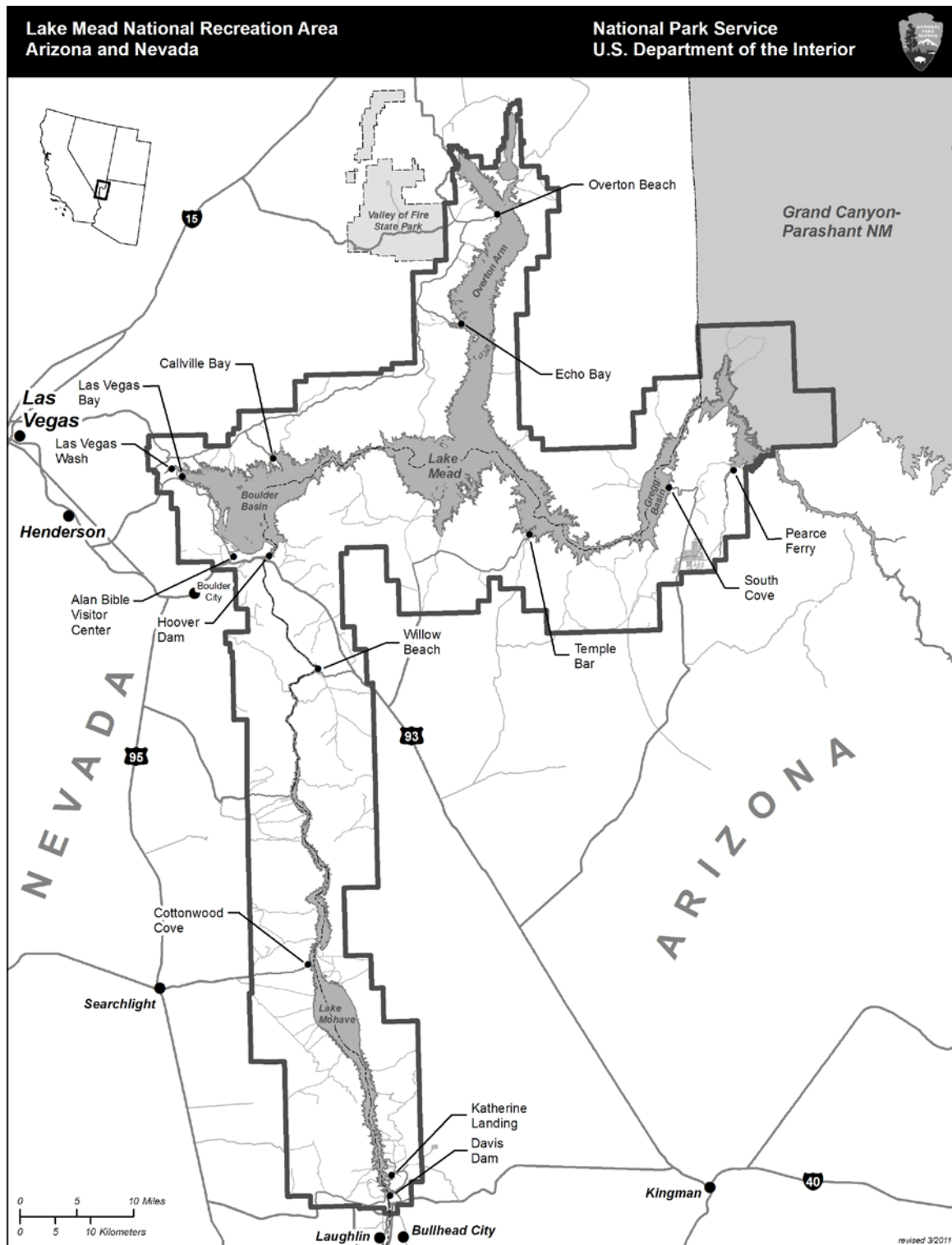
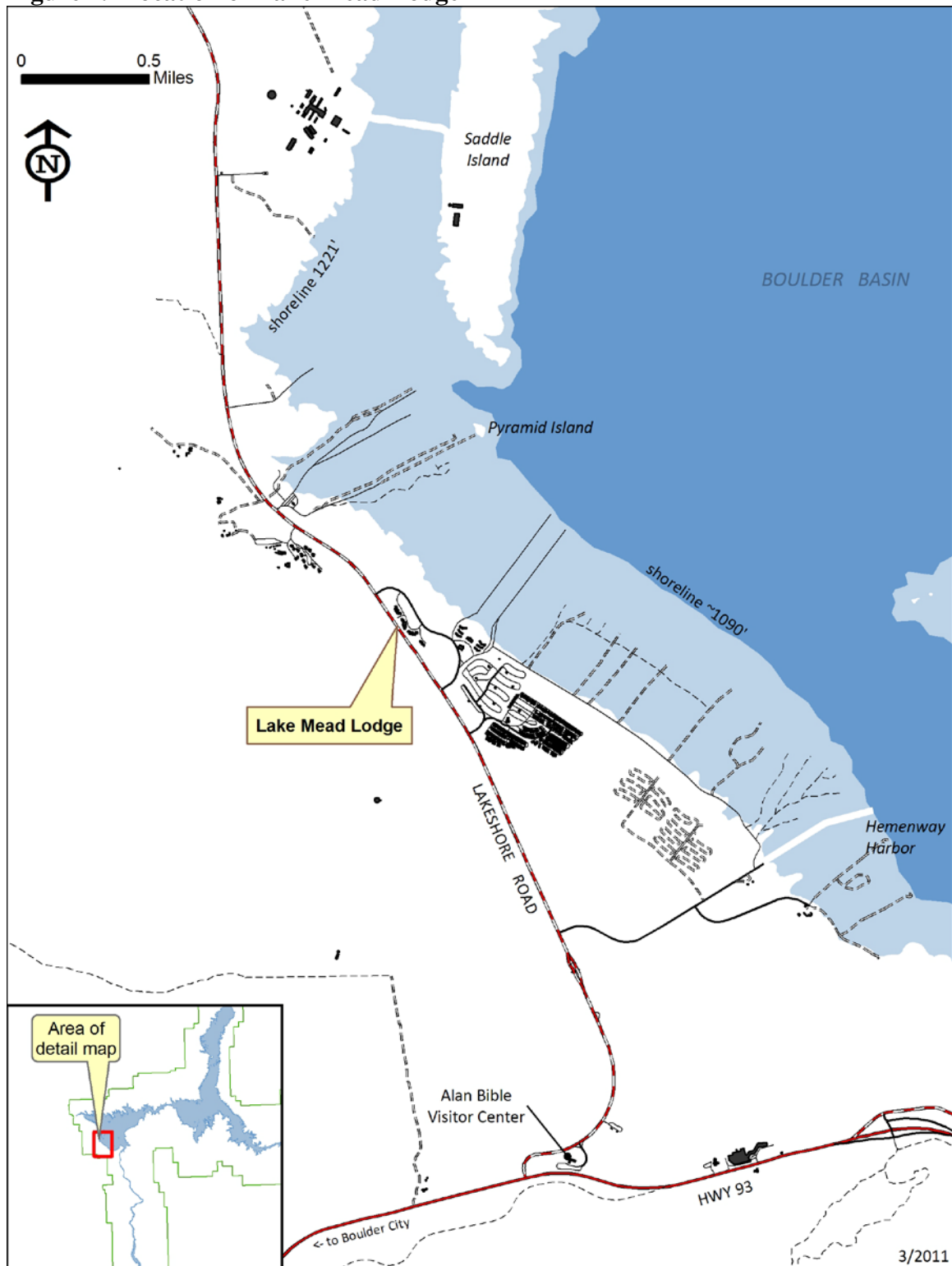


Figure 4. Location of Lake Mead Lodge



Related Laws, Legislation, and Other Planning and Management Documents

The NPS Organic Act of 1916 directs the NPS to manage units “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations.” Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.” The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts. An action constitutes an impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values.”

NPS Management Policies (2006) requires the analysis of potential effects of each alternative to determine if actions would impair park resources. To determine impairment, the NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.” The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However, the laws give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment to the affected resources and values.

NPS units vary based on their enabling legislation, natural and cultural resources, missions, and the recreational opportunities appropriate for each unit, or for areas within each unit. The enabling legislation for Lake Mead NRA (Public Law 88-639), established the recreation area “for the general purposes of public recreation, benefit, and use, and in a manner that will preserve, develop and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area, consistent with applicable reservations and limitations relating to such area and with other authorized uses of the lands and properties within such area.” An action appropriate at Lake Mead NRA, as designated by the enabling legislation, may impair resources in another unit. This EA analyzes the context, duration, and intensity of impacts related to options for the future of the Lake Mead Lodge site, as well as the potential for resource impairment, as required by Director’s Order 12: Conservation Planning, Environmental Impact Analysis and Decision Making (2000).

NPS determined in 2007 to discontinue commercial services at Lake Mead Lodge. Consequently, no commercial activities are considered as potential alternatives in this EA.

Issues and Impact Topics

Issues are related to potential environmental effects of project alternatives and were identified by the project interdisciplinary team during internal park scoping. Public scoping drew comments supporting preservation of the Lodge, which is captured under the topics of Cultural Resources and Visitor Use and Experience. Once issues were identified, they were used to help formulate the alternatives and mitigation measures. Impact topics based on substantive issues, environmental statutes, regulations, and executive orders were selected for detailed analysis. A summary of the impact topics and rationale for their inclusion or dismissal is given below.

Issues and Impact Topics Identified for Further Analysis

The following relevant impact topics are analyzed in the EA:

Geology and Soils: Some action alternatives call for the removal of one or more buildings and subsequent restoration of the area's soil.

Biological Resources: Partial or total site restoration, as described in some action alternatives, would affect the vegetation and wildlife present in the area.

Cultural Resources: Lake Mead Lodge is eligible for listing on the National Register of Historic Places, so changes to the structure could constitute an impact to cultural resources.

Visual Resources: Rehabilitation or removal of the existing buildings, as well as any restoration, would affect the visual appearance of a heavily used area of the park.

Park Operations: Some of the action alternatives involve administrative use of the buildings by the NPS, which would affect park operations.

Safety and Visitor Use and Experience: Retention of the site for use by the NPS or another entity may influence visitor use and experience.

Impact Topics Considered but Dismissed from Further Consideration

The following topics are not further addressed in this document because there are no potential effects to these resources, which are not in the project area or would be imperceptibly impacted:

- Designated ecologically significant or critical areas
- Special status species
- Wild or scenic rivers
- Wilderness Areas
- Wetlands
- Floodplains
- Water Resources
- Designated coastal zones
- Indian Trust Resources
- Prime and unique agricultural lands
- Sites on the US Department of the Interior's National Registry of Natural Landmarks
- Sole or principal drinking water aquifers

Although impacts to air quality (mainly dust) could arise as a result of demolition or rehabilitation of existing buildings, these impacts would be slight and temporary. None of the alternatives analyzed would, when implemented, result in a measurable change in the area's air quality, so this topic was dismissed from analysis. Similarly, demolition and/or rehabilitation activities may have small temporary impacts to soundscapes, but none of the options for future use of the site would result in measurable change to the soundscape of this busy area of the park, so impacts to soundscapes were dismissed from analysis.

Socioeconomics was also dismissed as a topic of analysis due to the fact that none of the alternatives include any stipulation for commercial services. Therefore, there are no socioeconomic criteria by which to select any alternative over the others.

The NPS would pursue sustainable practices wherever applicable, utilizing energy conservation technologies and renewable energy sources as appropriate. However, energy requirements associated with the alternatives are negligible when viewed in the context of local and regional rates of consumption.

There are no potential conflicts between the project and land use plans, policies, or controls (including state, local, or Native American) for the project area. The project area of effect is not populated and, per Executive Order 12898 on Environmental Justice, there are no potential effects on minorities, Native Americans, women, or the civil liberties (associated with age, race, creed, color, national origin, or sex) of any American citizen. No disproportionate high or adverse effects to minority populations or low-income populations would occur as a result of implementing any alternative.

CHAPTER 2: DESCRIPTION OF ALTERNATIVES

Introduction

This section describes the alternatives considered, including the No Action alternative. The range of alternatives was determined through a value analysis study, which was completed in June of 2010. A team comprised of Lake Mead staff and outside consultants performed an evaluation of existing conditions and used the results to determine viable alternatives based on environmental effects, operational issues, feasibility, and cost. During the public scoping period, options for re-use of the site were suggested, and adaptive re-use is an element of several of the alternatives developed.

The alternatives described include mitigation measures and monitoring activities proposed to minimize or avoid environmental impacts. This section also includes a description of alternatives considered early in the process but later eliminated from further study; reasons for their dismissal are provided. The section concludes with a comparison of impacts of the alternatives considered.

Alternative A: No Action

Under the No Action alternative, Lake Mead Lodge would be left vacant. Commercial services at the Lodge were discontinued effective at the end of 2008, and the buildings would remain in their present state. Gates have been installed on the entrance road; doors have been locked; the pool has been drained; a minimal amount of irrigation has been maintained to keep the trees alive. The buildings and landscaping would not be removed, and the site would not be restored. There would be no use of the facilities by the NPS or any other parties.

Alternative B: Demolish Lake Mead Lodge and Restore Site to Natural Condition

Under Alternative B, all four buildings would be demolished and removed from the site. All associated landscaping, parking, and entrance roads would be removed. The pool would be removed. Underground utilities would be capped and abandoned in place. The site, just over 10 acres in size, would then be restored to natural conditions to the greatest extent possible. Soil would be decompacted, and the area would be re-contoured to match the surrounding landscape and allow for natural drainage patterns. Landscaping would include seeding or planting to achieve species composition and density that is commensurate with the surrounding area. Rock placement would also match the surrounding area, and a simulated desert varnish would be applied as necessary to ensure that rock colors blend effectively.

Alternative C: Rehabilitate Entire Site for NPS Use

Under Alternative C, the entire site, including all four buildings, would be rehabilitated for administrative use by the NPS. Building rehabilitation would include structural, electrical, communication, plumbing, and climate components. Substantial structural upgrade is not anticipated but localized improvements could be needed to repair frame damage or to accommodate additional loads to the framing system. Interior layout changes and remodeling would be needed to convert former motel rooms into suitable offices and meeting space. A new electrical distribution system and new branch circuit and equipment wiring would be required. The exterior lighting circuit would be re-run as necessary to meet codes. New efficient interior lighting fixtures would be installed, and emergency lighting would be added. Fiber runs in and between the buildings would accommodate telecommunication needs. An intrusion detection system and a fire protection system, including automatic sprinklers, would be installed.

Water and sewer service leading up to the site was recently upgraded as part of a park-wide improvement project, but interior plumbing fixtures and piping would be replaced. Water heaters would be evaluated for age and efficiency and replaced as needed with high-efficiency models. A new heating, ventilation, and air conditioning system with digital controls would be installed to achieve the best practical energy efficiency ratio. Complete building rehabilitation would achieve Silver Certification under the Leadership in Energy and Environmental Design certification system.

In addition to the buildings themselves, driveways and parking areas would also be rehabilitated. A similar layout would be used, but the drive aisles would be widened for safety, and all drives and parking areas would be repaved with a pervious paving material. Handicap parking stalls and ramps meeting Americans with Disabilities Act (ADA) requirements would be added, and the parking area would be restriped to match the new design. Sidewalks and curbs would also be reconstructed in roughly their current locations but would meet ADA requirements. The retaining wall in front of the current administration building would be rebuilt. The pool would be removed. Landscaping would include the removal of palm trees and all dead vegetation. Living trees and shrubs would be limbed and trimmed as needed. Replacement of landscape vegetation would occur on a gradual as-needed basis and would include the replacement of non-native species with natives grown at the park's nursery. Existing grass areas would be redesigned with native plants.

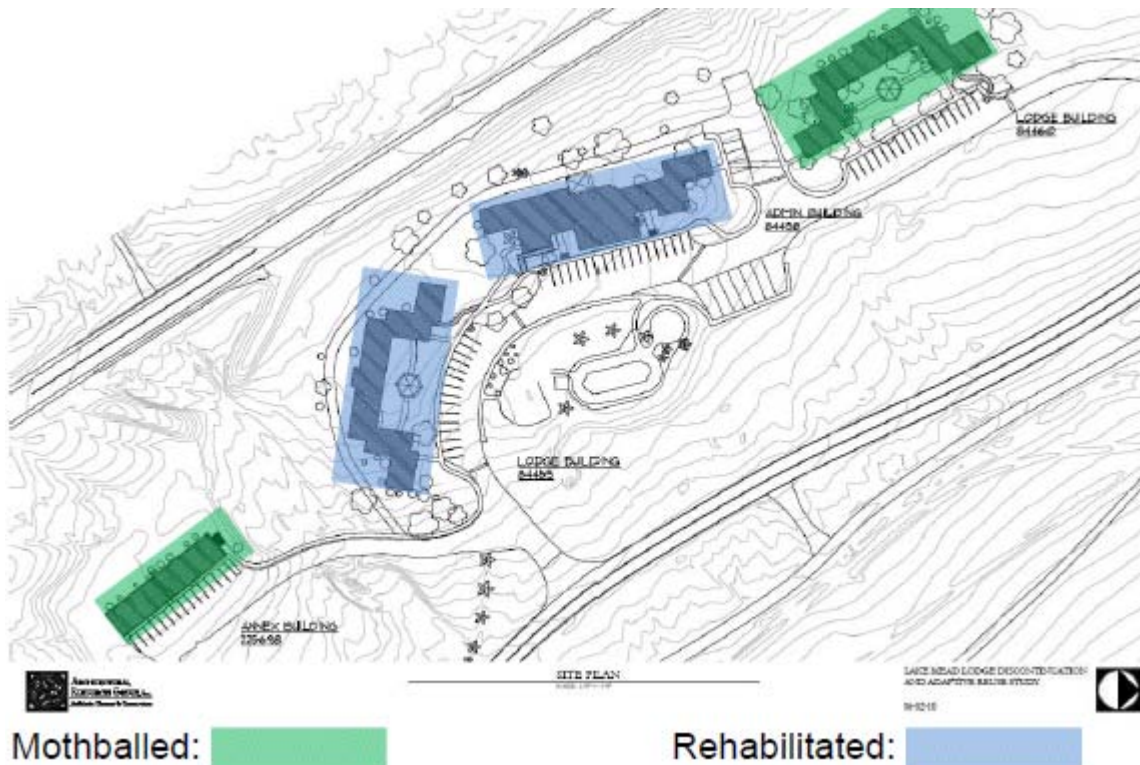
Once rehabilitated, the buildings would be used for offices for NPS personnel or for NPS meeting space. Specific occupancy has not been determined, but Lake Mead staff that could be sensibly located at this site include members of the Ranger Division (Fee, Fire, and Special Agents) and the Visitor Services Division (Environmental Education). In addition to Lake Mead staff, office space is also needed for regional or network employees who are either based at Lake Mead NRA or share duties among different parks.

Alternative D: Mothball Annex and One Lodge Building and Rehabilitate Two Buildings for NPS Use

Under Alternative D, the annex and the northernmost lodge building would be mothballed, while the other two lodge buildings would be rehabilitated for NPS use (Figure 5). The buildings retained for NPS use would undergo the same rehabilitation and would have the same re-use options as described under Alternative C. The mothballing of the other two buildings would be designed to protect them until funding becomes available to rehabilitate them in a manner similar to that described under Alternative C. Steps in the mothballing process follow Park (1993) and would be as follows:

1. Document the architectural and historical significance of the buildings.
2. Prepare a condition assessment of the buildings.
3. Structurally stabilize the buildings, based on a professional condition assessment.
4. Exterminate or control pests.
5. Protect the exteriors from moisture penetration.
6. Secure the buildings and their component features to reduce vandalism or break-ins.
7. Provide adequate ventilation to the interiors.
8. Secure or modify utilities and mechanical systems.
9. Develop and implement a maintenance and monitoring plan for protection.

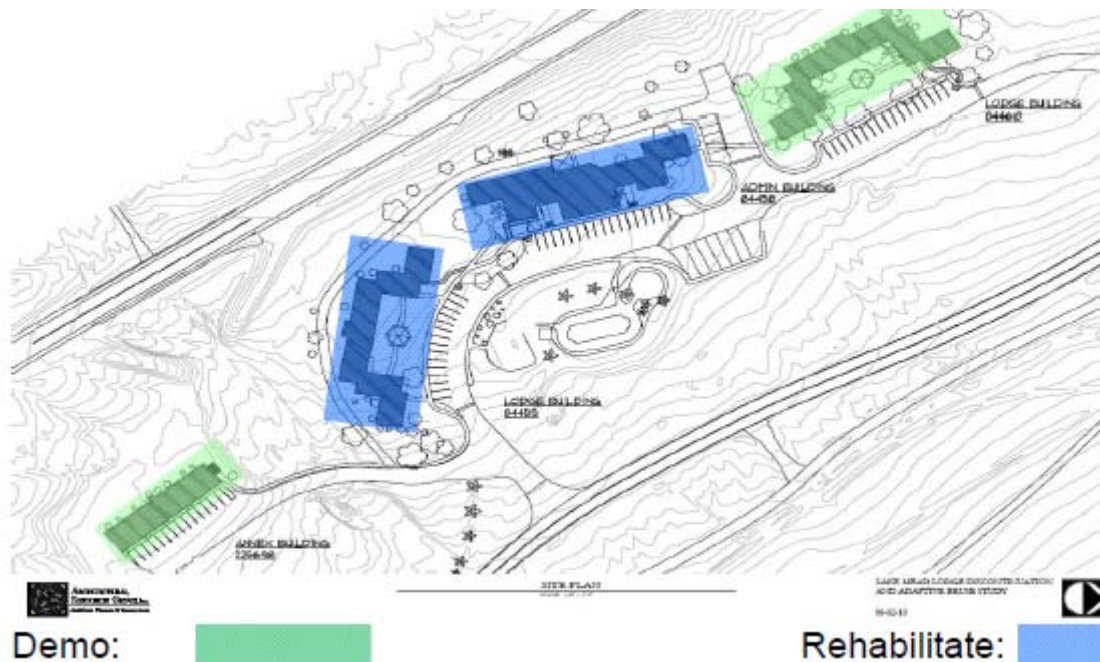
Figure 5. Illustration of Alternative D (from MACTEC 2010).



Alternative E: Demolish Annex and One Lodge Building and Rehabilitate Two Buildings for NPS Use

Under Alternative E, the annex and the northernmost lodge building would be demolished, while the other two lodge buildings would be rehabilitated for NPS use (Figure 6). The buildings retained for NPS use would undergo the same rehabilitation and would have the same re-use options as described under Alternative C. Following demolition and removal of the annex and northernmost lodge building, those areas, totaling approximately 4 acres, would be restored to natural conditions to the greatest extent possible using the techniques described under Alternative B.

Figure 6. Illustration of Alternative E (from MACTEC 2010).



Alternative F: Rehabilitate Site for Non-Commercial Use by Non-Profit Organization (Management-Preferred Alternative)

Under Alternative F, the Lake Mead Lodge site would be turned over to a non-profit or governmental organization for rehabilitation and non-commercial use. No such organization has been identified at this time, but the NPS is soliciting proposals, which will be accepted until the closing of the public review period of this EA. In order to qualify, an organization must have a mission complementary to the NPS (furthering the purposes for which the park was established) as well as the financial capacity to complete the rehabilitation and cover ongoing operational and maintenance costs for a non-commercial use. Rehabilitation requirements would be the same as those described under

Alternative C. This alternative does not include provisions to provide commercial services, and commercial enterprises would not be permitted to occupy the site.

The Lake Mead Lodge site would be assigned to a qualified non-profit organization through a cooperative agreement under 16 U.S.C. 1g for use in the public purposes of carrying out NPS programs, or through another authority authorizing the assignment of Federal facilities for non-commercial purposes. The agreement would be for an appropriate term. Upon termination or expiration of the agreement, the NPS would seek other non-profit organizations interested in and qualified to use the site for non-commercial purposes.

Alternatives Considered but Dismissed from Further Evaluation

Several other options for the Lake Mead Lodge site were initially considered but ultimately dismissed from further analysis. One option was to convert the Lodge to a training center for use by the NPS and other state and federal agencies. However, this would require extensive daily housekeeping and facility upkeep along with reception and information technology staff. Such an investment would not be practical for a facility that may receive only occasional use, nor does the NPS have funding to support the additional staff and resources required to manage such a labor-intensive operation. Another option was to convert the site to housing quarters for NPS seasonal employees. This was dismissed because the workload associated with management and maintenance of additional NPS housing is not warranted since the park currently has excess housing capacity and other accommodations are available in the gateway communities.

Finally, consideration was given to demolishing the entire site and constructing new buildings to serve as NPS administrative facilities. This option was initially considered since rehabilitation of the buildings could cost as much or more than the construction of new facilities designed specifically for their intended use. However, this alternative was ultimately dismissed since it removes the historic element of the site entirely and because all new construction should follow the park's approved master plan, which is intended to consolidate operations and does not allow the location of administrative facilities in such a heavily used visitor area.

Mitigation and Monitoring

Mitigation measures are specific actions designed to reduce, minimize, or eliminate impacts of alternatives and to protect Lake Mead NRA resources and visitors. Monitoring activities are actions to be implemented during or following project implementation to assess levels of impact. The following measures would be implemented under all applicable alternatives and are assumed in the analysis of effects for each alternative.

- Comments from the Nevada State Historic Preservation Office (SHPO) will be considered when selecting an alternative and mitigating adverse effects to a historic property.
- Lake Mead Lodge has been recorded and documented according to the requirements of the Historic American Building Survey (HABS).
- Native plants or their seed, cultivated from the local area, will be used in all revegetation activities.
- All equipment will be cleaned prior to working on site to avoid the introduction or spread of non-native vegetation in the project area.
- Dust abatement measures will be implemented for any alternative involving demolition or other ground-disturbing activities.
- A stormwater pollution prevention plan would be developed and implemented to prevent erosion impacts during any construction or demolition activities.

Coordination, Consultation, and Permitting

The NPS is consulting with the Nevada SHPO to determine the significance of the resources and the potential effect of the project on the resources. If the effect is adverse, the NPS will continue consultation with the SHPO to develop a plan to mitigate the adverse effect. The SHPO prefers preservation and/or rehabilitation whenever feasible but evaluates such opportunities in light of other issues and considerations.

For alternatives involving demolition, county dust permits will be obtained and measures will be taken to protect air quality during demolition. Disposal of waste material will comply with area regulations. For alternatives involving site rehabilitation, project elements will comply with the following building and safety codes:

- 2009 International Building Code
- 2009 International Mechanical Code
- 2009 International Plumbing Code
- NFPA 70 National Electric Code 2008
- NFPA 1 Fire Prevention Code 2009
- NFPA 101 Life Safety Code 2009
- NFPA 13 Fire Sprinkler Code 2010
- NFPA 72 National Fire Alarm Code 2010
- NFPA 101B Code for Means of Egress for Buildings and Structures
- ADA-ABA Accessibility Guidelines 2004

Environmentally Preferred Alternative

The environmentally preferred alternative is the alternative that will promote NEPA, as expressed in Section 101 of NEPA. This alternative will satisfy the following requirements:

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

Alternative B is the environmentally preferable alternative because overall it would best meet the requirements in Section 101 of NEPA. By providing for complete restoration of the site to a natural condition, Alternative B results in the greatest beneficial effect to geology and soils, biological resources, and visual resources and satisfies criteria 1, 2, 4, and 6 above. Although Alternatives C and F offer greater potential to preserve a historic resource (criterion 4 above), benefits to the natural environment are reduced under these alternatives. Alternatives D and E do not effectively preserve the historic resource and offer reduced natural resource and visual benefits relative to Alternative B. The No Action alternative results in impacts to both natural and cultural resources while failing to provide any benefit to the park, its staff, or the public. A full comparison of the impacts of the different alternatives is provided in Chapter 4.

Comparison of Impacts

Table 1 summarizes the potential long-term impacts of the proposed alternatives. Short-term impacts are not included in this table, but are analyzed in the Environmental Consequences section. Impact intensity, context, and duration are also defined in the Environmental Consequences section.

Table 1: Comparison of Long-Term Impacts

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Geology and Soils	No effect	Moderate beneficial effects	No effect	No effect	Minor beneficial effects	No effect
Biological Resources	Minor adverse impacts	Moderate beneficial effects	Minor beneficial effects	Minor beneficial effects	Minor beneficial effects	Minor beneficial effects
Cultural Resources	Major adverse impacts	Moderate adverse impacts	Minor adverse impacts	Moderate adverse impacts	Moderate adverse impacts	Minor adverse impacts
Visual Resources	Moderate adverse impacts	Moderate beneficial effects	Minor beneficial effects	Minor beneficial effects	Minor beneficial effects	Minor beneficial effects
Park Operations	Minor adverse impacts	Moderate beneficial effects	Minor beneficial effects and moderate adverse impacts	Minor beneficial effects and moderate adverse impacts	Minor beneficial effects and moderate adverse impacts	Negligible adverse impacts
Visitor Use and Experience	No effect	No effect	Potentially minor beneficial effects	Potentially minor beneficial effects	Potentially minor beneficial effects	Potentially moderate beneficial effects

CHAPTER 3: AFFECTED ENVIRONMENT

Introduction

This section provides a description of the existing environment in the project area and the resources that may be affected by the proposals and alternatives under consideration. Complete and detailed descriptions of the environment and existing use at Lake Mead NRA are found in the Lake Mead NRA Lake Management Plan and Final Environmental Impact Statement (2002), Lake Mead NRA Resource Management Plan (NPS 2000), the Lake Mead NRA General Management Plan (NPS 1986), and the Low Water General Management Plan Amendment (2005).

Location and General Description of the Project Area

Lake Mead Lodge is located at 322 Lakeshore Road within the Boulder Beach developed area. The Lodge is located on the east side of Lakeshore Road. The Lodge is comprised of four structures. The administration building and two lodging buildings were part of the original 1941 construction; another lodging building, referred to as the Annex, was added in 1954. The buildings are all single-story and constructed of concrete masonry units with low-sloped concrete, shake tile roofs. They are modest single-story structures with simple details that reference Spanish-style architecture. Landscape features include a swimming pool, barbeque area, two gazebos, lawns, palm trees and other non-native plantings, pedestrian walkways connecting the buildings, and an entrance road and parking lot.

Geology and Soils

The Boulder Beach area sits at the base of Hemenway Valley. Upslope and to the west, the River Mountains run along the western boundary of Lake Mead NRA and are dissected by deep ravines opening into broad alluvial fans. Adjoining fans commonly coalesce and form a continuous alluvial apron along the base of the mountains. These slopes extend eastward where they merge with the shoreline of Lake Mead. The underlying strata of these slopes consist chiefly of Tertiary and Quaternary deposits.

Biological Resources

The Boulder Beach area is a low-desert plant community dominated by creosote bush, white bursage, and several species of cactus. No rare or sensitive plant species are known to occur in this area of the park. Areas near the lake's shoreline are populated with non-native tamarisk. The desert setting supports numerous species of reptiles and small mammals. Coyotes are commonly seen. The River Mountains to the west are home to large populations of desert tortoise and bighorn sheep. Lake Mead Lodge itself is landscaped with palm trees, eucalyptus, pine trees, elm, olive, oleander, and lawn areas. As the Lodge is situated between the heavily traveled Lakeshore Road and the popular visitor use area of Boulder Beach, wildlife in the immediate project area is scarce.

but may include desert cottontail rabbits, small rodents, lizards, mourning doves, Gambel's quail, and various songbirds.

Cultural Resources

The Boulder Beach area has been inventoried for cultural resources. Several prehistoric sites have been identified including lithic scatters, rock shelters, and rock rings. There are three prehistoric sites and one historic site within one mile of the Lodge. The prehistoric sites are small rock shelters that contain a small number of flakes but no diagnostic artifacts. The historic site is a dump that appears to be associated with powerline construction. Several historic structures are in the Boulder Beach area. They include the Six Companies Railroad Grade located approximately 0.5 miles west of the Lodge and several structures in the government housing area located 0.75 miles northwest of the Lodge. All of these structures are west of Lakeshore Road and not within the viewshed of the Lodge.

Visual Resources

The scenic quality of the Boulder Beach area of Lake Mead NRA is a composite of landscape effects created by both natural and man-made features. To the west, the striking River Mountains run along the park boundary. To the northeast, the colorful Paint Pots area of Fortification Hill is a scenic example of volcanic activity and erosion and provides a magnificent backdrop to the blue expanse of Lake Mead's Boulder Basin.

The Lodge site is within the Boulder Beach development subzone (defined by the General Management Plan), and numerous man-made developments occupy the landscape as a result of the area's heavy visitor use. These include park facilities such as the Boulder Beach Ranger Station, the Water Safety Center, and employee housing; and visitor areas such as the Alan Bible Visitor Center, Lake Mead Marina, Las Vegas Boat Harbor, Lake Mead Cruises, and Boulder Beach campground. The River Mountain Loop Trail parallels Lakeshore Road, and several powerline corridors serve park and concessioner needs.

Park Operations

Due to the area's popularity, Lake Mead staff spends considerable time and effort in the Boulder Beach Area. Law enforcement rangers patrol regularly, responding to traffic and boating incidents and visitor conflicts, enforcing park regulations, and providing first response to medical emergencies. Maintenance staff is responsible for upkeep of park infrastructure. This includes day to day activities such as cleaning and trash pick-up, but also involves projects of greater scope, such as grading of beach and parking areas, the extension of launch ramps and associated features as the lake level continues to recede. The Visitor Services branch leads hikes, offers interpretive programs, and conducts roving patrols providing park information to visitors. The park's Commercial Services branch provides management oversight of concessioner activities in the area. The Resource Management Division is active in habitat protection and restoration and in

overseeing Quagga mussel management as it relates to boats entering and leaving the area.

Safety and Visitor Use and Experience

Boulder Beach provides a variety of recreational opportunities for park visitors. Hemenway Harbor is a popular launch area that allows boaters to access Lake Mead's Boulder Basin for boating, skiing, and fishing. Motorboats, sailboats, and personal watercraft are all popular. Las Vegas Boat Harbor offers boat rentals, storage slips, fuel, convenience stores, and restaurant and lounge service. Lake Mead Cruises offers excursions on a paddlewheel vessel. A fishing pier provides shoreline fishing opportunities. Boulder Beach campground offers a shady area for picnicking, grilling, and overnight camping. The beach in front of the campground is designated for swimming only, with no boats allowed. Walking and biking is popular along the River Mountain Loop Trail, which in its entirety is 35 miles long and connects Henderson, Boulder City, and Lake Mead NRA.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

Introduction

This section presents the likely beneficial and adverse effects to the natural and human environment that would result from implementing the alternatives under consideration. This section describes short-term and long-term effects, direct and indirect effects, cumulative effects, and the potential for each alternative to result in unacceptable impacts or impairment of park resources. Interpretation of impacts in terms of their duration, intensity (or magnitude), and context (local, regional, or national effects) are provided where possible.

Methodology

In describing potential environmental impacts, it is assumed that the mitigation identified in the Mitigation and Monitoring section of this EA would be implemented under any of the applicable alternatives. Impact analyses and conclusions are based on NPS staff knowledge of resources and the project area, review of existing literature, and information provided by experts in the NPS or other agencies. Any impacts described in this section are based on preliminary design of the alternatives under consideration. Effects are quantified where possible; in the absence of quantitative data, best professional judgment prevailed.

Impacts are characterized as negligible, minor, moderate, or major, according to definitions provided for each impact topic below. In addition, the following terms may also be used in characterizing impact type:

- *Localized Impact*: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts are detectable only in the localized area.
- *Direct Effect*: The effect is caused by the action and occurs at the same time and place.
- *Indirect Effect*: The effect is caused by the action and may occur later in time or be farther removed in distance, but is still reasonably foreseeable.
- *Short-Term Effect*: The effect occurs only during or immediately after implementation of the alternative.
- *Long-Term Effect*: The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

In the absence of quantitative data concerning the full extent of actions under a proposed alternative, best professional judgment prevailed.

Impairment Analysis

In addition to determining the environmental consequences of the alternatives, NPS Management Policies (2006) requires the analysis of potential effects to determine if actions would impair park resources. Under the NPS Organic Act of 1916 and the NPS General Authorities Act of 1970, as amended, the NPS may not allow the impairment of park resources and values except as authorized specifically by Congress. The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment to the affected resources and values.

Impairment to park resources and values has been analyzed within this document. Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park; is key to the cultural or natural integrity of the park or to opportunities for enjoyment of the park; or is identified as a goal in the park's general management plan or other relevant NPS planning document. An impact would be less likely to constitute an impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

Impairment may result from NPS activities in managing the recreation area, visitor activities, or from activities undertaken by concessioners, contractors, and others operating in the recreation area. In this "Environmental Consequences" section, a determination on impairment is made in the conclusion statement of the applicable resource impact topics for each alternative. The NPS does not analyze recreational values, visitor use and experience (unless impacts are resource based), socioeconomic values, health and safety, or park operations in terms of impairment.

Table 2. Impairment Definitions

Resource Topic	Definition of Impairment
Geology and Soils	The impact results in a permanent change in a large portion of the overall acreage of the park, affecting the resource to the point that the park's purpose cannot be fulfilled and the resource is degraded precluding the enjoyment of future generations.
Biological Resources	The impact contributes substantially to the deterioration of natural resources to the extent that the park's wildlife and habitat no longer functions as a natural system. Wildlife and its habitat are affected over the long-term to the point that the park's purpose is not fulfilled and the resource cannot be experienced and enjoyed by future generations.
Cultural Resources	There is loss, destruction, or degradation of a cultural property, resource, or value to the point that it negatively affects the park's purpose, and the resource cannot be enjoyed by future generations. For purposes of Section 106, the determination would be adverse effect.
Visual Resources	The impact occurs within an extremely visually sensitive area. The impact is not compatible with the overall visual character of the area, the landscape is unable to absorb the impact, and mitigation measures are unsuccessful in alleviating the impact. The impact contributes substantially to the degradation of the overall scenic quality to the point that the park's purpose cannot be fulfilled, and resource degradation precludes the enjoyment of future generations.

Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the NPS will apply a standard that offers greater assurance that impairment will not occur. NPS Management Policies (2006) requires that park managers evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable. Unacceptable impacts are impacts that fall short of impairment, but are still not acceptable within a particular park's environment.

Virtually every form of human activity that takes place within a park has some degree of effect on park resources or values, but that does not mean the impact is unacceptable or that a particular use must be disallowed. For the purposes of this analysis, an unacceptable impact is an impact that individually or cumulatively would

- be inconsistent with a park's purposes or values
- impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process
- create an unsafe or unhealthful environment for visitors or employees
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values
- unreasonably interfere with
 - park programs or activities
 - an appropriate use
 - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park
 - NPS concessioner or contractor operations or services

Cumulative Impacts

Cumulative effects are the direct and indirect effects of an alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action. Federal agencies are required to identify the temporal and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. This includes potential actions within and outside the recreation area boundary. The geographical boundaries of analysis vary depending on the impact topic and potential effects. While this information may be inexact at this time, major sources of impacts have been assessed as accurately and completely as possible, using all available data.

Specific projects or ongoing activities with the potential to cumulatively affect the resources (impact topics) evaluated for the project are identified in this document and described in the following narrative. Some impact topics would be affected by several or all of the described activities, while others could be affected very little or not at all. How each alternative would incrementally contribute to potential impacts for a resource is included in the cumulative effects discussion for each impact topic.

Boulder Beach is one of the busiest areas of the park. In 2010, over 2 million visitors accessed Boulder Beach via U.S. 93. The closure of the Las Vegas Bay launch ramp and the relocation of Las Vegas Boat Harbor marina has concentrated much of the visitor use at and adjacent to Boulder Beach. The area is heavily developed, including a launch ramp, two marinas, a campground, park roads and housing, the River Mountain Loop Trail, and numerous utility rights-of-way. The declining lake level has kept both Park Maintenance and the concessioners in a near-constant mode of moving and extending facilities to ensure continued visitor access and recreational opportunities.

On a park-wide level, natural resources are impacted by the spread of exotic species, off-road vehicle disturbance, and illegal collection. Cultural resources are subject to

vandalism and looting. Due to the greater visitor and park presence in the Boulder Beach area, most of the resource impacts in the immediate vicinity result from development. Construction can permanently remove desert habitat, and remodeling and rehabilitation projects (such as campgrounds or the Visitor Center) can alter the historic integrity of existing facilities.

Geology and Soils

Laws, Regulations, and Policies

NPS Management Policies (2006) stipulates that the NPS will preserve and protect geologic resources as integral components of park natural systems. Geologic resources include geologic features and geologic processes. The fundamental policy, as stated in the NPS reference manual Natural Resource Management (NPS-77, 1991) is the preservation of the geologic resources of parks in their natural condition whenever possible.

Soil resources would be protected by preventing or minimizing adverse, potentially irreversible impacts on soils, in accordance with NPS Management Policies (2006). NPS-77 specifies objectives for each management zone for soil resources management. These management objectives are defined as: (1) natural zone - preserve natural soils and the processes of soil genesis in a condition undisturbed by humans; (2) cultural zone - conserve soil resources to the extent possible consistent with maintenance of the historic and cultural scene and prevent soil erosion wherever possible; (3) park development zone - ensure that developments and their management are consistent with soil limitations and soil conservation practices; and, (4) special use zone - minimize soil loss and disturbance caused by special use activities, and ensure that soils retain their productivity and potential for reclamation.

Zones within the recreation area have been designated in the Lake Mead NRA General Management Plan, which provides the overall guidance and management direction for Lake Mead NRA.

Criteria and Thresholds for Impact Analysis

The following impact thresholds were established for analyzing impacts to geology and soils in the project area.

- *Negligible impacts:* Impacts have no measurable or perceptible changes in soil structure and occur in a relatively small area.
- *Minor impacts:* Impacts are measurable or perceptible, but localized in a relatively small area. The overall soil structure is not affected.
- *Moderate impacts:* Impacts are localized and small in size, but cause a permanent change in the soil structure in that particular area.

- *Major impacts:* Impact on the soil structure is substantial, highly noticeable, and permanent.

Alternative A

Under the No Action alternative, there would be no change to the existing buildings or to the site's landscaping. Structures would not be removed, nor would any of the associated roads, walkways, and parking areas, leaving no potential for restoring soil and geology to a natural condition.

Cumulative Effects: There would be no cumulative effects to geology and soils under the No Action alternative.

Conclusion: The No Action alternative has no effect on geology and soils, so there would be no unacceptable impacts and no impairment under this alternative.

Alternative B

Under Alternative B, all four buildings would be demolished and removed from the site. All roads, walkways, parking areas, and other site amenities would also be demolished and removed. This would allow the entire 10 acres of the site to be restored to a natural condition. Restoration would include recontouring to allow for natural drainage patterns and decompaction of the soil to allow for proper revegetation. Alternative B results in the greatest benefit to geology and soils.

Cumulative Effects: Altered soils and drainage patterns occur throughout the park as a result of development, roads, and rights-of-way. The rehabilitation of soil and restoration of natural contours that would occur under this alternative is a positive action, but at only 10 acres, it represents a small incremental cumulative effect to geology and soils.

Conclusion: The restoration of over 10 acres to a natural condition would result in moderate beneficial effects to geology and soils. There would be no unacceptable impacts and no impairment under Alternative B.

Alternative C

Under Alternative C, all four buildings comprising the Lake Mead Lodge site would be rehabilitated for adaptive re-use, as would the roads, walkways, and parking areas. Therefore, geology and soils would remain in their present condition.

Cumulative Effects: There would be no cumulative effects to geology and soils under Alternative C.

Conclusion: Alternative C has no effect on geology and soils, so there would be no unacceptable impacts and no impairment under this alternative.

Alternative D

Under Alternative D, two of the buildings would be rehabilitated for adaptive re-use, while the other two would be mothballed. Roads, walkways, and parking areas serving

the rehabilitated structures would also be rehabilitated, while the others would be left as they are. Therefore, geology and soils throughout the site would remain in their present condition.

Cumulative Effects: There would be no cumulative effects to geology and soils under Alternative D.

Conclusion: Alternative D has no effect on geology and soils, so there would be no unacceptable impacts and no impairment under this alternative.

Alternative E

Under Alternative E, two of the buildings would be demolished and removed from the site. This would allow approximately four acres of the site to be restored to a natural condition. Restoration would include recontouring to allow for natural drainage patterns and decompaction of the soil to allow for proper revegetation. This alternative results in less benefit to geology and soils than Alternative B, but greater benefit than Alternatives A, C, D, and F.

Cumulative Effects: Altered soils and drainage patterns occur throughout the park as a result of development, roads, and rights-of-way. The rehabilitation of soil and restoration of natural contours that would occur under this alternative is a positive action, but at only four acres, it represents a small incremental cumulative effect to geology and soils.

Conclusion: The restoration of approximately four acres to a natural condition would result in minor beneficial effects to geology and soils. There would be no unacceptable impacts and no impairment under Alternative E.

Alternative F

Under Alternative F, all four buildings comprising the Lake Mead Lodge site would be rehabilitated for adaptive non-commercial re-use, as would the roads, walkways, and parking areas. Therefore, geology and soils would remain in their present condition.

Cumulative Effects: There would be no cumulative effects to geology and soils under Alternative F.

Conclusion: Alternative F has no effect on geology and soils, so there would be no unacceptable impacts and no impairment under this alternative.

Biological Resources

Laws, Regulations, and Policies

The NPS Organic Act directs the parks to conserve the scenery and the natural objects for future generations. It also directs parks to conserve wildlife unimpaired, which is interpreted by the NPS to mean native animal life should be protected and perpetuated as part of the recreation area's natural ecosystem. NPS Management Policies (2006) defines

the general principles for managing biological resources as maintaining all native plants and animals as part of the natural ecosystem. Natural processes are relied on to maintain populations of native species to the greatest extent possible. Management goals for biological resources include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and ecological integrity of plants and animals. Restoration of native species and the control and eradication of exotic species are high priorities.

Criteria and Thresholds for Impact Analysis

The following impact thresholds were established for analyzing impacts to biological resources in the project area:

- *Negligible impacts:* There are no measurable or perceptible changes in the plant community; no species of concern are present, and impacts to wildlife, if any, are temporary.
- *Minor impacts:* Impacts are measurable or perceptible and localized within a relatively small area. The overall viability of the plant community is not affected and the area, if left alone, recovers. Occasional flight responses by wildlife are expected, but without interference with feeding, reproduction, or other activities necessary for survival. Mortality of species of concern is not expected.
- *Moderate impacts:* Impacts cause a change in the plant community (e.g. abundance, distribution, quantity, or quality); however, the impact remains localized. Breeding animals of concern are present, and mortality or interference with activities necessary for survival is expected on an occasional basis.
- *Major impacts:* Impacts to the plant community are substantial, highly noticeable, and permanent. Breeding animals of concern are present in relatively high numbers, and/or wildlife is present during particularly vulnerable life stages. Habitat targeted by actions has a history of use by wildlife during critical periods, and mortality is expected.

Alternative A

Under Alternative A, no changes to the site would occur. There would be no removal of the exotic plant species and no restoration of the site with native species. With no change in the plant community and no removal of the development, there would be no change in the amount or suitability of wildlife habitat. The exotic plant species occupying the site would continue to be a seed source within the park. This alternative results in the greatest impact to biological resources.

Cumulative Effects: Non-native plants enter the park through a variety of means, such as inadvertent transport on vehicles or growth from the seeds of already-established individuals. Although the non-native plants at Lake Mead Lodge have a low probability

of escape and expansion, their persistence at the site represents a small incremental cumulative impact to biological resources.

Conclusion: The retention of exotic species in the landscape of the Lake Mead Lodge site would result in minor adverse impacts to biological resources. There would be no unacceptable impacts and no impairment under Alternative A.

Alternative B

Under Alternative B, all exotic plant species would be removed, and the entire 10-acre site would be revegetated with native plant species. The site would no longer serve as a seed source for exotic plants, and the expanded habitat would be more suitable for native wildlife. Alternative B results in the greatest benefit to biological resources.

Cumulative Effects: Exotic plants are found in the landscaping at all of the park's developed areas. The park is working to replace them with appropriate native species as opportunities arise, either through active rehabilitation of an entire area or individual replacement of dead or dying plants. Removal of the exotic plants in the landscape of Lake Mead Lodge contributes to that effort and provides a beneficial cumulative effect to biological resources.

Conclusion: The restoration of over 10 acres to a natural condition would result in moderate beneficial effects to biological resources. There would be no unacceptable impacts and no impairment under Alternative B.

Alternative C

Although Alternative C retains the entire site for adaptive re-use by the NPS, rehabilitation would include changes to the landscaping that involve removal of exotic plants and replacement with natives. However, retention of the buildings and continued use of the site would limit the benefits to native wildlife. This alternative provides a greater benefit to biological resources than Alternatives A or D, the same benefit as Alternative F, and a smaller benefit than Alternatives B or E.

Cumulative Effects: Assuming complete replacement of exotic plants in the Lake Mead Lodge landscaping, the cumulative effects of Alternative C would be similar to Alternative B.

Conclusion: Alternative C has minor beneficial effects to biological resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative D

Since no facilities are removed under Alternative D, there is limited potential for restoration. However, the rehabilitation of two of the buildings would include limited changes to the landscaping, including removal of exotic plants and replacement with natives. This would result in a greater benefit to biological resources than the No Action alternative, but a smaller benefit than would occur under any of the other action alternatives.

Cumulative Effects: With non-native plants remaining at the mothballed buildings, cumulative effects would be similar to those of Alternative A.

Conclusion: Alternative D has minor beneficial effects to biological resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative E

Under Alternative E, the rehabilitation of two of the buildings would include changes to the landscaping, including removal of exotic plants and replacement with natives. The removal of the other two buildings would allow for restoration of approximately 4 acres to a natural condition. This would result in a smaller benefit to biological resources than Alternative B, but a greater benefit than would occur under any of the other alternatives.

Cumulative Effects: Assuming complete replacement of exotic plants in the Lake Mead Lodge landscaping, the cumulative effects of Alternative E would be similar to Alternative B.

Conclusion: Alternative E has minor beneficial effects to biological resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative F

Although Alternative F retains the entire site for adaptive non-commercial re-use by a non-profit organization, rehabilitation would include changes to the landscaping that involve removal of exotic plants and replacement with natives. This would be a greater benefit to biological resources than Alternatives A or D, the same benefit as Alternative C, and a smaller benefit than Alternatives B or E.

Cumulative Effects: Cumulative effects would be the same as under Alternative C.

Conclusion: Alternative F has minor beneficial effects to biological resources. There would be no unacceptable impacts and no impairment under this alternative.

Cultural Resources

Laws, Regulations, and Policies

Numerous legislative acts, regulations, and NPS policies provide direction for the protection, preservation, and management of cultural resources on public lands. Further, these laws and policies establish what must be considered in general management planning and how cultural resources must be managed in future undertakings resulting from the approved plan regardless of the final alternative chosen. Applicable laws and regulations include the NPS Organic Act of 1916, the Antiquities Act of 1906, the National Historic Preservation Act of 1966 (1992, as amended), the National Environmental Policy Act of 1969, and the Archeological Resources Protection Act of 1979. Applicable agency policies relevant to cultural resources include Chapter 5 of NPS

Management Policies (2006) and Director's Order 28: Cultural Resource Management (1998).

Section 106 of the National Historic Preservation Act requires that federal agencies with direct or indirect jurisdiction over undertakings take into account the effect of those undertakings on properties that are listed, or eligible for listing, on the National Register of Historic Places. Section 110 of the Act further requires federal land managers to establish programs in consultation with the SHPO to identify, evaluate, and nominate properties to the national register. This Act applies to all federal undertakings or projects requiring federal funds or permits.

Criteria and Thresholds for Impact Analysis

The following impact thresholds were established for analyzing impacts to cultural resources in the project area:

- *Negligible impacts:* The impact is at the lowest level of detection, with neither adverse nor beneficial consequences. The determination of effect under Section 106 would be no effect.
- *Minor impacts:* The alteration of a feature or features can be completed according to Secretary of Interior standards and does not diminish the integrity of the resource. The determination of effect under Section 106 would be no adverse effect.
- *Moderate impacts:* The alteration of a feature or features diminishes the integrity of the resource. The determination of effect under Section 106 would be adverse effect, but measures are identified to mitigate the impacts.
- *Major impacts:* The alteration of a feature or features diminishes the integrity of the resource. The determination of effect under Section 106 would be adverse effect, and no measures are developed to mitigate the impacts.

Alternative A

Taking no action on the Lake Mead Lodge site would result in continued deterioration of the structures and grounds. As time passes, effects of weathering and decomposition would become greater, and future opportunities for mitigation may be less likely to be effective or may be lost entirely.

Cumulative Effects: Cultural resources at Lake Mead NRA, including historic structures, are impacted by natural processes (such as aging and weathering), illegal activities (such as vandalism and looting), and legitimate endeavors (such as construction and development). Adverse effects to Lake Mead Lodge as a result of neglect and lack of mitigation would contribute cumulatively to impacts on the park's cultural resources.

Conclusion: There would be major adverse impacts to cultural resources under Alternative A. There would be no unacceptable impacts and no impairment under this alternative.

Alternative B

Under Alternative B the historical structures would be demolished and removed, but proper recording and documentation would ensure that the cultural significance of Lake Mead Lodge is preserved. This alternative results in the greatest physical impact to the resource.

Cumulative Effects: With appropriate mitigation, removal of the Lake Mead Lodge would have only a small contribution to cumulative effects on the park's cultural resources.

Conclusion: There would be moderate adverse impacts to cultural resources under Alternative B. There would be no unacceptable impacts and no impairment under this alternative.

Alternative C

Although all structures would be preserved under this alternative, the modifications that would be required to convert the Lodge into suitable office and meeting space would result in the loss of historic fabric. There may be a perceived lack of physical impact, especially compared to Alternative B, but the extensive remodeling would result in a loss of the site's historic integrity. Mitigation, including adoption of Secretary of Interior standards for rehabilitation, would be used to preserve the historic fabric to the extent possible.

Cumulative Effects: With appropriate mitigation, rehabilitation of Lake Mead Lodge would have only a small contribution to cumulative effects on the park's cultural resources.

Conclusion: There would be minor adverse impacts to cultural resources under Alternative C. There would be no unacceptable impacts and no impairment under this alternative.

Alternative D

Under Alternative D, loss of historic integrity would result from the extensive rehabilitation and remodeling of two buildings. Mothballing would preserve the other two buildings for a finite period of time, after which further action would be needed to prevent additional impacts from neglect (similar to Alternative A).

Cumulative Effects: With appropriate mitigation, rehabilitation of two buildings and mothballing of the others would have only a small contribution to cumulative effects on the park's cultural resources.

Conclusion: There would be moderate adverse impacts to cultural resources under Alternative D. There would be no unacceptable impacts and no impairment under this alternative.

Alternative E

Under Alternative E, loss of historic integrity would result from the demolition of two structures and the loss of historic fabric of the rehabilitated and remodeled structures.

Cumulative Effects: With appropriate mitigation, rehabilitation of two buildings and removal of the others would have only a small contribution to cumulative effects on the park's cultural resources.

Conclusion: There would be moderate adverse impacts to cultural resources under Alternative E. There would be no unacceptable impacts and no impairment under this alternative.

Alternative F

Although all structures would be preserved under this alternative, the modifications that would be required to convert the Lodge into suitable office and meeting space would result in the loss of historic fabric. There may be a perceived lack of physical impact, especially compared to Alternative B, but the extensive remodeling would result in a loss of the site's historic integrity. Mitigation, including adoption of Secretary of Interior standards for rehabilitation, would be used to preserve the historic fabric to the extent possible.

Cumulative Effects: With appropriate mitigation, rehabilitation of Lake Mead Lodge would have only a small contribution to cumulative effects on the park's cultural resources.

Conclusion: There would be minor adverse impacts to cultural resources under Alternative F. There would be no unacceptable impacts and no impairment under this alternative.

Visual Resources

Laws, Regulations, and Policies

The enabling legislation of Lake Mead NRA specifically addresses the preservation of the scenic features of the area. The NPS manages the natural resources of the park, including highly valued associated characteristics such as scenic views, to maintain them in an unimpaired condition for future generations.

The intent of this analysis is to identify how each alternative would affect the overall visual character of the area. The assessment of potential visual impacts involves a subjective judgment concerning the degree of landscape modification allowable before a threshold of impact is exceeded. Human preference for landscape types or characteristics

is not uniform across cultures and populations, but there are common preferences among visitors to federal lands, and natural-looking landscapes are thought to be the most appealing.

In determining impacts on the visual resource, the NPS considered the visual sensitivity of the area and the level of visual obtrusion each alternative would have on the existing landscape. Visual sensitivity is dependent on the ability of the landscape to absorb the potential impact and the compatibility of the change with the overall visual character of the area. Absorption relates to how well the project will blend into the landscape, taking into account factors such as form, line, and color. Compatibility considers the character of the visual unit and how much contrast is created by the project.

Criteria and Thresholds for Impact Analysis

The following impact thresholds were established for analyzing impacts to visual resources in the project area:

- *Negligible impacts:* The impact is at the lower level of detection and causes no measurable change. The effects of the project do not dominate the landscape and are essentially imperceptible. The ability of the landscape to absorb the effects is very high, and the change is compatible with the existing visual character of the area.
- *Minor impacts:* The impact is slight but detectable and the change would be small. The project effects are subordinate to the surrounding landscape and relatively low in dominance. The ability of the landscape to absorb the effects is high, and the change is compatible with the existing visual character of the area. If mitigation is needed to offset adverse effects, it is simple and likely to be successful.
- *Moderate impacts:* The impact is readily apparent and the change attracts attention and alters the view, and the dominance of the effects on the landscape is high. The ability of the landscape to absorb the impact is low, and the change is moderately compatible with the existing visual character of the area. Mitigation measures are necessary to offset adverse effects and are likely to be partially successful.
- *Major impacts:* The impact is severe and the change would be highly noticeable. The effects of the project dominate the landscape. The ability of the landscape to absorb the impact is very low, and the impact has very little compatibility with the overall visual character of the area. Extensive mitigation measures are needed to offset adverse effects, and their success is not guaranteed.

Alternative A

Under Alternative A, the structures would be neither rehabilitated nor removed, and there would be no potential for site restoration. With no use of the site there would be no

regular upkeep or maintenance, and the condition of the site would continue to deteriorate. The visual appearance of the area would continue to decline. This alternative results in the greatest impact to visual resources.

Cumulative Effects: The natural scenic quality of the Boulder Beach area has already been impacted by the infrastructure created to support recreation, although the existing facilities constitute less of an impact due to their location in a designated development zone. The level of impact is, however, influenced by the condition of the facility, and continued deterioration of the Lodge would result in incremental cumulative impacts to visual resources.

Conclusion: Alternative A results in moderate adverse impacts to visual resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative B

Under Alternative B, all facilities would be removed and the site would be restored to a natural condition. The site's geography and plant community would match that of the surrounding landscape. This alternative results in the greatest benefit to visual resources.

Cumulative Effects: Restoration of developed or disturbed sites to a natural condition has occurred within the park at cabin sites and on obsolete roads and staging areas. Such efforts improve an area's visual quality, and although Boulder Beach is part of a developed zone, restoration of the Lodge site would constitute a beneficial cumulative effect to visual resources.

Conclusion: Alternative B results in moderate beneficial effects to visual resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative C

Under Alternative C, all four buildings, the roads, walkways, parking areas, and landscaping would be rehabilitated. Re-use of the entire site by the NPS would ensure that the site received regular upkeep and maintenance. Although the site would remain developed, it would be kept in a condition that would not create visual impacts. This alternative provides greater benefits to visual resources than Alternatives A and D, the same benefits as Alternative F, and fewer benefits than Alternatives B and E.

Cumulative Effects: Rehabilitation of park facilities, including the current renovation of the Alan Bible Visitors Center and the planned upgrade to the Boulder Beach campground, improve the visual appearance of the developed area. Rehabilitating all four structures of Lake Mead Lodge would therefore represent an incremental cumulative beneficial effect to visual resources.

Conclusion: There would be minor beneficial effects to visual resources under Alternative C. There would be no unacceptable impacts and no impairment under this alternative.

Alternative D

Under Alternative D, the rehabilitation of two buildings and associated facilities would result in some improvement to the site's visual quality, but the mothballing of two other structures would create impacts similar to those described for the No Action alternative. This alternative results in both beneficial and adverse effects to visual resources. This alternative offers greater benefit to visual resources than the No Action alternative, but fewer benefits than any other action alternative.

Cumulative Effects: By rehabilitating two buildings while mothballing the others, Alternative D has cumulative effects similar to those of both Alternatives A and C.

Conclusion: Alternative D results in both minor adverse impacts and minor beneficial effects to visual resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative E

Under Alternative E, approximately 4 acres would be restored to a natural condition while the rest of the site would be rehabilitated for re-use. The size of the developed area would be reduced under this alternative, and re-use of the facilities would ensure that the site received regular upkeep and maintenance. This alternative provides less benefit to visual resources than Alternative B, but greater benefits than all other action alternatives.

Cumulative Effects: By incorporating both site restoration and building rehabilitation, Alternative E has cumulative effects similar to those of both Alternatives B and C.

Conclusion: Alternative E would result in minor beneficial effects to visual resources. There would be no unacceptable impacts and no impairment under this alternative.

Alternative F

Under Alternative F, all four buildings, the roads, walkways, parking areas, and landscaping would be rehabilitated. Non-commercial re-use of the entire site by a non-profit organization would ensure that the site received regular upkeep and maintenance. Although the site would remain developed, it would be kept in a condition that would not create visual impacts. This alternative provides greater benefits to visual resources than Alternatives A and D, the same benefits as Alternative C, and fewer benefits than Alternatives B and E.

Cumulative Effects: Cumulative effects would be the same as those of Alternative C.

Conclusion: There would be minor beneficial effects to visual resources under Alternative F. There would be no unacceptable impacts and no impairment under this alternative.

Park Operations

Criteria and Thresholds for Impact Analysis

Park operations refer to the ability of the park to adequately protect and preserve vital park resources and to provide for an enjoyable visitor experience. Operational efficiency is influenced not only by park staff, but also by the adequacy of the existing infrastructure used in the day to day operation of the park. Analysis of impacts to park operations must consider (1) employee and visitor health and safety, (2) the park's mission to protect and preserve resources, and (3) existing and needed facilities and infrastructure. The following impact thresholds were established for analyzing impacts to park operations in the project area:

- *Negligible impacts:* Park operations are not affected, or the effects are at low levels of detection and do not have an appreciable effect on park operations.
- *Minor impacts:* The effect is detectable and likely short-term, but is of a magnitude that does not have an appreciable effect on park operations. If mitigation is needed to offset adverse effects, it is simple and likely to be successful.
- *Moderate impacts:* The effects are readily apparent, likely long-term, and result in a substantial change in park operations in a manner noticeable to staff and to the public. Mitigation measures are necessary to offset adverse effects and are likely to be successful.
- *Major impacts:* The effects are readily apparent, long-term, and result in a substantial change in park operations in a manner noticeable to staff and the public. Changes are markedly different from existing operations. Extensive mitigation measures are needed to offset adverse effects, and their success is not guaranteed.

Alternative A

Under the No Action alternative, the site would remain in its current condition and would not receive regular attention from NPS staff. However, prolonged vacancy would increase natural deterioration as well as the potential for trespass and vandalism. Emergency maintenance or law enforcement responses would be needed on an occasional basis. These unplanned events would interrupt normal park operations, although the staff time involved would be less than that required by the re-use alternatives.

Cumulative Effects: With over two million visitors to Boulder Beach annually, considerable staff time is invested at Boulder Beach. Maintenance must clean, maintain, and repair facilities, and respond to the challenges of low water. Law enforcement must respond to visitor conflicts, crimes, and emergency medical incidents. The additional staff time required under the No Action alternative, while infrequent, represents a small incremental cumulative impact to park operations.

Conclusion: Alternative A would have minor adverse impacts on park operations.

Alternative B

The demolition of Lake Mead Lodge and restoration of the site to natural condition, once completed, would eliminate any future investment of staff time in the site. The Resource Management Division would be responsible for guiding the site's restoration. Until visitor services ceased at the Lodge in 2008, care of the site was a concessioner responsibility with little NPS input, and Alternative B is the only alternative which does not permanently increase park workloads and impact park operations.

Cumulative Effects: There are no cumulative effects to park operations under Alternative B.

Conclusion: Relative to the other alternatives, including No Action, Alternative B would have a moderate beneficial effect to park operations.

Alternative C

The re-use of Lake Mead Lodge by NPS staff would require the NPS to adopt full-time responsibility for the site's upkeep, maintenance, safety, and security. Since the site would be an addition to, rather than a replacement of, other staff facilities, this alternative would increase the workload of existing staff and negatively affect park operations. However, the relocation of staff to this site would reduce office crowding and may station certain employees closer to the field areas for which they are responsible.

Cumulative Effects: The routine and ongoing maintenance requirements of the re-use alternative, when added to the current responsibilities of park staff outlined under Alternative A, would create moderate cumulative impacts on park operations.

Conclusion: Under Alternative C there would be both minor beneficial effects and moderate adverse impacts to park operations.

Alternative D

Under Alternative D, NPS staff would assume the responsibilities described in Alternative C for only two of the buildings. However, occasional staff time would also be needed to maintain the other buildings in a mothballed state. The benefits of relocating staff to this site would be reduced relative to Alternative C since only two of the buildings would be occupied.

Cumulative Effects: The routine and ongoing maintenance requirements of re-using two buildings would create moderate cumulative impacts on park operations.

Conclusion: Under Alternative D there would be both minor beneficial effects and moderate adverse impacts to park operations.

Alternative E

Under Alternative E, only two of the buildings would be re-used by NPS staff while the others would be removed. Thus the effects to park operations would be similar to those described under Alternative C, but of smaller magnitude.

Cumulative Effects: Cumulative effects would be the same as under Alternative D.

Conclusion: Under Alternative E, there would be both minor beneficial effects and moderate adverse impacts to park operations.

Alternative F

Re-use of the Lake Mead Lodge site by a non-profit organization for non-commercial purposes would put the responsibility for the site's upkeep, maintenance, safety, and security on the non-profit organization occupying the buildings. The role of NPS would be reduced to oversight of the agreement authorizing the non-profit organization's non-commercial use (and infrequent law enforcement response in the case of emergencies). Impacts to park operations would be slightly greater than under Alternative B, but less than under any other alternative.

Cumulative Effects: With minimal NPS involvement, Alternative F would have negligible cumulative effects to park operations.

Conclusion: There would be negligible effects to park operations under Alternative F.

Safety and Visitor Use and Experience

Laws, Regulations, and Policies

NPS Management Policies (2006) states that the enjoyment of the park's resources is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitor enjoyment.

Part of the purpose of Lake Mead NRA is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of the park's facilities, services, and appropriate recreational opportunities.

Criteria and Thresholds for Impact Analysis

Public scoping input and observation of visitation patterns, combined with an assessment of what is available to visitors under current management, were used to estimate the effects of the actions in the various alternatives of this document. The impact on the ability of the visitor to safely experience a full range of Lake Mead NRA resources was analyzed by examining resources and objectives presented in the park's significance statement. The potential for change in visitor experience proposed by the alternatives was evaluated by identifying projected increases or decreases in use of the areas impacted

by the proposal, and determining how these projected changes would affect the desired visitor experience. The following impact thresholds were established for analyzing impacts to safety and visitor use and experience:

- *Negligible impacts:* Safety would not be affected, or the effects are at low levels of detection and do not have an appreciable effect on visitor or employee health and safety. The visitor is not affected, or changes in visitor use and experience are below or at the level of detection. The visitor is not likely to be aware of the effects associated with the alternative.
- *Minor impacts:* The effect is detectable, but does not have an appreciable effect on health and safety. Changes in visitor use and experience are detectable, although the changes would be slight. Some visitors are aware of the effects associated with the alternative, but the effects are slight and not noticeable by most visitors.
- *Moderate impacts:* The effects are readily apparent and result in substantial, noticeable effects to health and safety on a local scale. Changes in visitor use and experience are readily apparent to most visitors. Visitors are aware of the effects associated with the alternative and might express an opinion about the changes.
- *Major impacts:* The effects are readily apparent and result in substantial, noticeable effects to health and safety on a regional scale. Changes in visitor use and experience are readily apparent to all visitors. Visitors are aware of the effects associated with the alternative and are likely to express a strong opinion about the changes.

Alternative A

Since the Lake Mead Lodge would be neither removed nor rehabilitated under the No Action alternative, there would be no effect to visitor use and experience. (The site's appearance, which is affected under No Action, does have some effect on visitor experience, but this is captured under Visual Resources above.)

Cumulative Effects: There are no cumulative effects to visitor use and experience under Alternative A.

Conclusion: There is no effect to visitor use and experience under Alternative A.

Alternative B

Removal of all structures and facilities and restoration of the site to a natural state would have no effect to visitor use and experience, other than the beneficial effects to Visual Resources described above.

Cumulative Effects: There are no cumulative effects to visitor use and experience under Alternative B.

Conclusion: There is no effect to visitor use and experience under Alternative B.

Alternative C

Re-use of the Lake Mead Lodge as office space for park staff would allow certain employees to work in closer proximity to the field are for which they are responsible. Although specific assignments for the space have not been determined, personnel from Law Enforcement, Maintenance, and Visitor Services all contribute to the recreational value of the Boulder Beach area, and their relocation to this site may allow them to better serve visitor needs, either through faster response or greater accessibility.

Cumulative Effects: In order to improve the visitor experience, the park has completed a Lake Management Plan (2003) and a Low Water Amendment to the General Management Plan (2005). The challenges of low water have caused some impact to recreational opportunities and negatively affected the visitor experience. Having staff available at the Lake Mead Lodge site to serve the public would have a minor beneficial cumulative effect on visitor experience.

Conclusion: Under Alternative C, there would be potentially minor beneficial effects to visitor use and experience.

Alternative D

Under Alternative D, only two of the four buildings would be used for NPS staff, so benefits to visitor use and experience would be similar to those of Alternative C, but of a smaller magnitude.

Cumulative Effects: Utilizing only two of the buildings at the Lake Mead Lodge site would result in beneficial cumulative impacts that are similar, if somewhat smaller, than those under Alternative C.

Conclusion: Under Alternative D, there would be potentially minor beneficial effects to visitor use and experience.

Alternative E

Under Alternative E, only two of the four buildings would be used for NPS staff, so the benefits to visitor use and experience would be the same as those described under Alternative D.

Cumulative Effects: Cumulative effects would be the same as those under Alternative D.

Conclusion: Under Alternative E, there would be potentially minor beneficial effects to visitor use and experience.

Alternative F

Re-use of the Lake Mead Lodge by a non-profit organization for non-commercial purposes is not a visitor service as defined in 36 C.F.R., 51.3. However, such reuse could

potentially provide benefits to visitor use and experience not currently available in the Boulder Beach area. Although a specific entity has not been identified to occupy the site, only those non-profit organizations with a mission complementary to the NPS would be considered. While use of the site by a non-profit will be restricted to non-commercial purposes, nevertheless such use still would be for the public purposes of carrying out NPS programs.

Cumulative Effects: The beneficial effects resulting from the services of a non-profit entity for non-commercial purposes would be in addition to, and complementary to, any services provided by NPS. Therefore, there would be moderate cumulative beneficial effects under Alternative F.

Conclusion: Under Alternative F, there would be potentially moderate beneficial effects to visitor use and experience.

CHAPTER 5: PUBLIC AND AGENCY INVOLVEMENT

A 30-day public scoping period occurred from October 29 to November 30, 2010. A scoping press release (Appendix A) was sent to television stations, newspapers, magazines, and radio stations in Las Vegas, Henderson, Boulder City, Pahrump, Overton, Logandale, Laughlin, Nevada; Meadview, Kingman, Phoenix, and Bullhead City, Arizona; and Needles and Los Angeles, CA. The press release was also posted on the Lake Mead NRA internet website and on the NPS Planning, Environment, and Public Comment (PEPC) internet website. The scoping period was advertised in the Las Vegas Sun Home News. Five comments were received, generally opposing demolition and suggesting various options for adaptive re-use.

A press release announcing the availability of this environmental assessment is sent to the above entities and is posted on the park and PEPC websites. In addition, the announcement is posted in the public lobby of Lake Mead headquarters in Boulder City.

Lake Mead NRA's mailing list is comprised of 244 federal, state, and local agencies; individuals; businesses; and organizations. The environmental assessment is distributed to those individuals, agencies, and organizations likely to have an interest in this project. Entities on the park mailing list that do not receive a copy of the environmental assessment receive a letter notifying them of its availability and methods of accessing the document.

The environmental assessment is published on the Lake Mead NRA internet website at (<http://www.nps.gov/lame>) and on the NPS PEPC internet website at <http://parkplanning.nps.gov/>. Copies of the environmental assessment are available at area libraries, including: Boulder City Library, Clark County Community College (North Las Vegas), Clark County Library, Las Vegas Public Library, Green Valley Library (Henderson), James I. Gibson Library (Henderson), Sahara West Library (Las Vegas), Mohave County Library (Kingman, AZ), Sunrise Public Library (Las Vegas), University of Arizona Library (Tucson, AZ), University of Nevada Las Vegas James R. Dickinson Library, Meadview Community Library, Moapa Valley Library (Overton, NV), Mesquite Library, Mohave County Library (Lake Havasu City, AZ), Laughlin Library, Searchlight Library, and Washington County Library (St. George, UT).

Comments on this environmental assessment must be submitted during the 30-day public review and comment period. Comments on the EA can be submitted on the PEPC website at <http://parkplanning.nps.gov/> or may be submitted in writing to the following address:

National Park Service, Lake Mead NRA
Attention: Compliance Office
601 Nevada Way
Boulder City, Nevada 89005

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

CHAPTER 6: LIST OF PREPARERS

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CHAPTER 7: REFERENCES

Federal Regulation, Order, Law

All U.S. Public Laws, Codes, Federal Regulations, and Statutes can be found at the Office of the Federal Register, U.S. Government Printing Office, Washington, DC. Many can be found on the Internet at <http://www.gpo.gov>.

Antiquities Act of 1906. U.S. Code Vol. 16, secs. 431-3; ch. 3060, U.S. Public Law 209. U.S. Statutes at Large 34:225.

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APPENDIX A: SCOPING PRESS RELEASE

National Park Service
U.S. Department of the Interior

LAKE MEAD NATIONAL RECREATION AREA News Release

For Immediate Release: Oct. 29, 2010
Release No.: 2010-51
Contact: Andrew S. Muñoz, (702) 293-8691

NPS SEEKS PUBLIC COMMENT ON LAKE MEAD LODGE DISCONTINUATION OF SERVICE & ADAPTIVE REUSE STUDY

LAS VEGAS - The National Park Service is seeking public comment on its study of demolition or possible adaptive reuse of the Lake Mead Lodge complex located at 322 Lakeshore Road within Lake Mead National Recreation Area. The lodge is eligible for listing on the National Historic Register. Due to its historic status, the park service is required to evaluate the impacts of either demolishing the lodging complex or adaptively reusing it for noncommercial purposes.

Originally called Hualapai Lodge, three of its four structures were built in 1941 by National Park Service concessionaire Grand Canyon Boulder Dam Tours, Inc. A fourth "annex" building and a swimming pool were added in 1954. The lodge was originally adjacent to Lake Mead Marina before the marina was moved in Feb. 2008.

Seven Crown Resorts, Inc. took over the operation in 1979 and operated it until the lodge was closed in Dec. 2008. The decision to discontinue commercial operations was based on the numerous lodging properties located within 25 miles of the park, the facility's deteriorated condition, and the loss of clientele once Lake Mead Marina was relocated due to declining lake levels.

An environmental assessment will be prepared to analyze the effects of the proposed alternatives. Comments and recommendations concerning the scope of the environmental assessment, the issues it should cover, the alternatives to consider, and other project related concerns will be accepted through Nov. 30, 2010.

Comments may be submitted by U.S. Mail to Lake Mead National Recreation Area, Compliance Office, 601 Nevada Way, Boulder City, NV 89005 or via the internet at <http://parkplanning.nps.gov/lake/>.

- NPS -



As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. Administration.

