

LAKE MEAD NATIONAL RECREATION AREA

**ENVIRONMENTAL ASSESSMENT
FOR ECHO BAY PARKING EXPANSION**

**Lake Mead National Recreation Area
Clark County, Nevada**

September 2006

US Department of the Interior, National Park Service

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SECTION I: PURPOSE OF AND NEED FOR ACTION

INTRODUCTION

The National Park Service (NPS) is considering constructing a parking lot at Echo Bay, within Lake Mead National Recreation Area (NRA).

The environmental assessment (EA) evaluates the no action alternative and two action alternatives. The alternatives analyzed are: Alternative A: No Action; Alternative B: Construct a Paved Parking Lot; and, Alternative C: Construct a Gravel Parking Lot. This document also includes a discussion of alternatives that have been ruled out and justifications for their elimination.

PURPOSE AND NEED

During the last decade, the Echo Bay developed area has experienced an increase in visitation because of the services and facilities offered and from overflow at adjacent, more crowded development zones on the lake. In 1998 the Echo Bay area received 318,615 visitors. Of those, approximately 146 visitors a day used the launch ramp to access Lake Mead. The capacity for launching boats from the launch ramp at Echo Bay is 400 launches per day. Currently, available parking is limited to 109 pull-through sites. The existing pull-through parking area is not in a convenient location to the launch ramp, does not provide enough parking spaces for the launch ramp to function at its carrying capacity, and occupies parking spaces that would be better utilized by the facilities in the immediate area, including the motel and restaurant.

During the peak season, late spring through summer, visitors are asked to park their vehicles, with trailers, approximately one mile or further from the launch ramp in the existing pull-through parking area. When this parking area reaches capacity, visitors must park their vehicles with trailers along the Echo Bay access road, causing damage to soils and vegetation and creating confusion and congestion on the roadway. Summer temperatures, usually exceeding 100 degrees, make it difficult and sometimes unbearable for visitors to retrieve their vehicles and trailers. The distance, heat, and steep incline to the area where vehicles are parked could have detrimental effects to the health and safety of visitors.

For most of the last 50 years, Lake Mead has generally operated within a 40-foot fluctuation range, between approximately 1,220 and 1,180 feet. Drought conditions occurring during the last five years in the Colorado River Basin have resulted in the dramatic decline of Lake Mead waters. Due to fluctuating lake levels, it is important that visitor facilities are established at locations not vulnerable to changing lake levels. The goal of this project is to provide a consolidated parking area for vehicles with trailers in close proximity to the launch ramp to allow the Echo Bay developed area to function at its carrying capacity regardless of water elevation.

BACKGROUND

Drought conditions in the Colorado River Basin have had an effect on marina operations and NPS launch facilities at Lake Mead. The extension of launch ramps, reconfiguration

of marinas and docks, and grading of shoreline areas has maintained safe access to the lake for visitors to Lake Mead NRA. A positive effect of the increase in shoreline is that it provides more parking spaces for public use.

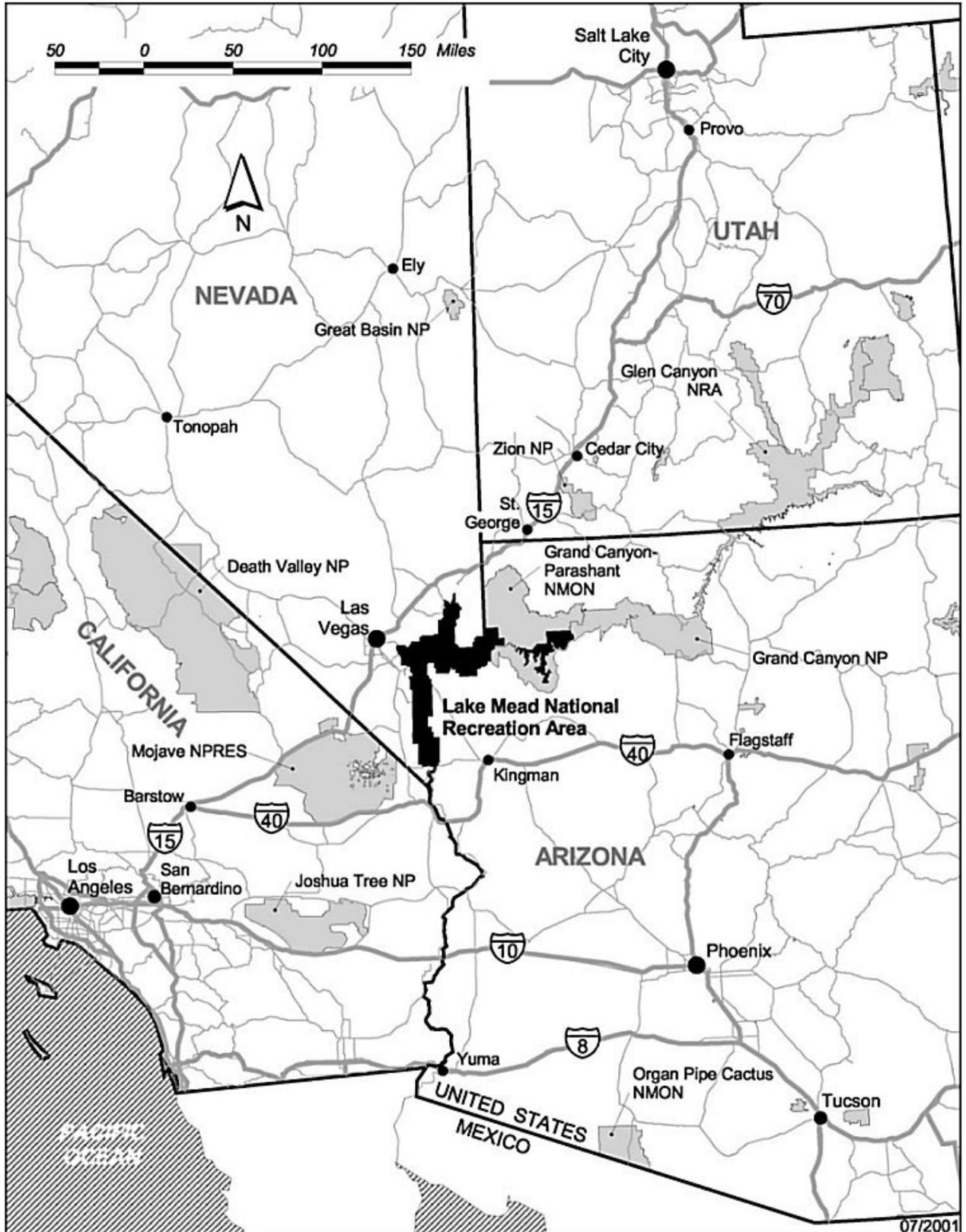
One strategy for managing park resources includes identifying development zones. The purpose of development zones is to provide facilities for park operations and visitor enjoyment within a concentrated area to limit disturbance to other areas of the park. Actions proposed in the 1986 *General Management Plan (GMP)* for the Echo Bay developed area includes redesigning auto/pedestrian circulation and increasing parking; adding a picnic area and overflow launch ramp; retaining the lower and upper campgrounds and converting one loop to RV sites; expanding the motel, store, and maintenance building; and adding housing in the trailer village. The project at hand was identified in the 1986 *GMP* for the purpose of providing facilities that support visitation and carrying capacity at any lake elevation. The 2003 *Lake Management Plan (LMP)* tiers from the 1986 *GMP* and provides additional guidance for the long-term management of Lakes Mead and Mohave, the associated shoreline, and the development areas within Lake Mead NRA to ensure protection of park resources while allowing a range of recreational opportunities. The proposed project is consistent with the expansion of the Echo Bay developed area discussed in the *LMP*.

The NPS recently completed an amendment to the 1986 *GMP* to address low water conditions that affect lake access on Lake Mead. With the lake level currently 80 feet below the high water mark and predicted to drop another 20 feet over the next two years, several measures are being taken at the developed areas to maintain visitor use. One of the proposed actions in that plan considered options for relocation of the Overton Beach Marina facility to the Echo Bay developed area. Relocation of the Overton Beach Marina to the Echo Bay area would be within the expansion limits identified in the 2003 *LMP* and is consistent with the 1986 *GMP*. The parking lot expansion proposed in this environmental assessment would be in further demand to accommodate increased visitation.

PROJECT AREA LOCATION

Lake Mead NRA is situated in southeastern Nevada and northwestern Arizona and encompasses lands around Lake Mead and Lake Mohave (Figure 1). Echo Bay is situated in the northern portion of the recreation area on a high bluff and offers uncrowded conditions along the Overton Arm of Lake Mead (Figure 2). Northshore Road follows the north and west shores of Lake Mead, connecting the Las Vegas metropolitan area and visitors traveling on Interstate 15 with the developed areas of Callville Bay, Echo Bay, and Overton Beach. The project site is located within the Echo Bay developed area (Figure 3). This area provides a full range of services and facilities for day and overnight use. Historically, the area has not been heavily visited because of its distance from California and Las Vegas. However, crowding at other marinas and people seeking distance from heavily visited areas has resulted in more people utilizing the Echo Bay area for lake access.

**Figure 1- Regional Map
Lake Mead National Recreation Area**



**Figure 2- Area Map
Lake Mead National Recreation Area**

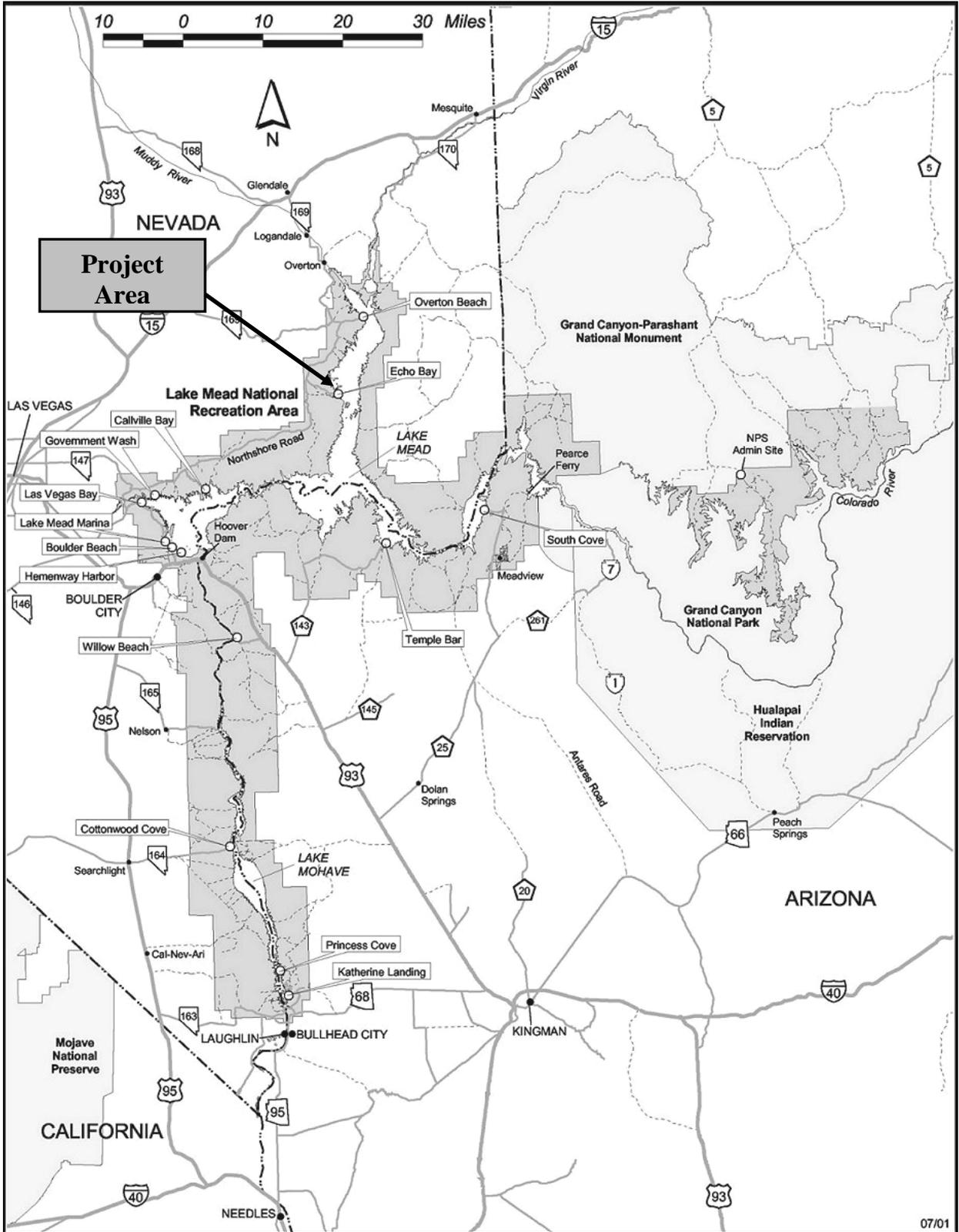
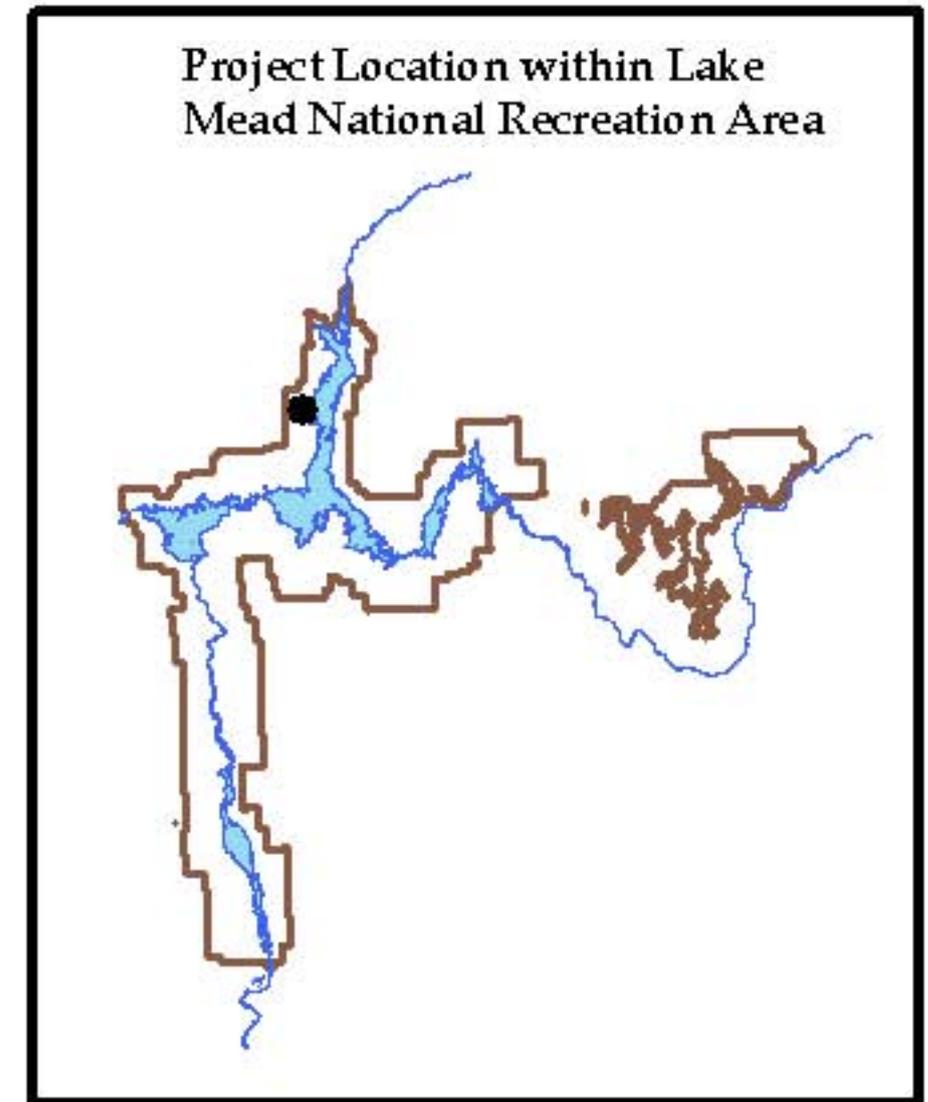
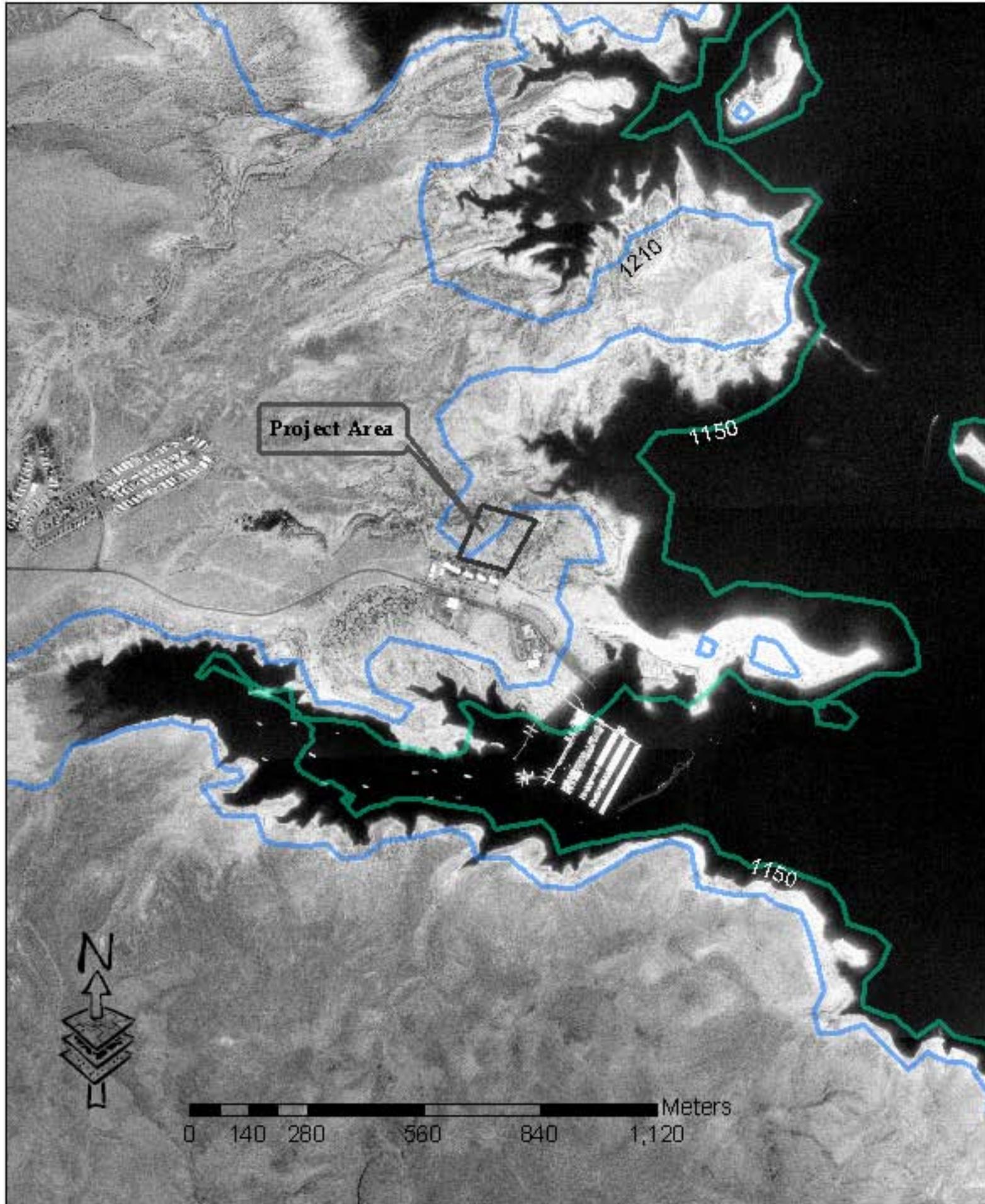


Figure 3. Echo Bay Parking Lot Development



Lake Mead Elevation (ft.)

Elevation



Department of the Interior

National Park Service

November 3, 2004

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RELATED LAWS, POLICIES, AND OTHER PLANNING AND MANAGEMENT DOCUMENTS

Service-wide and Park Specific Legislation and Planning Documents

The NPS Organic Act 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.” (16 U.S.C. § 1). 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.” (16 U.S.C. § 1 a-1). 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.” (Management Policies 1.4.3).

NPS Management Policies 2001 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.” (Management Policies 1.4.4). 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 (Management Policies 1.4.3).

NPS units vary based on their enabling legislation, natural and cultural resources, missions, and the recreational opportunities appropriate for each unit. The enabling legislation for Lake Mead NRA (PL 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.” This environmental assessment analyzes the context, duration, and intensity of impacts related to constructing a parking lot in the Echo Bay vicinity, as well as the potential for resource impairment, as required by Director’s Order 12, *Conservation Planning, Environmental Impact Analysis and Decision Making*.

The 1986 *GMP* provides the overall management direction for the recreation area. The plan emphasizes long-term protection of park resources while accommodating increasing visitor use. It allows for increasing use through a combination of providing new developed areas, improved access points, and acceptable levels of expansion in existing

developed areas. It establishes land-based management zones and strategies for meeting the goals and general purposes of the recreation area.

The 2003 *Lake Management Plan (LMP)* tiers from the 1986 *GMP*. It provides additional and more specific guidance for the long-term management of Lakes Mead and Mohave, the associated shoreline, and the development areas within Lake Mead NRA to ensure the protection of park resources while allowing a range of recreational opportunities. The plan provides for an increase in boating capacity targeted at areas where growth can be accommodated with the physical, environmental, and social carrying capacity of the lakes. It identifies facility improvements, capacities, locations, and expansions for the developments that control access on Lake Mead, with facility development based on the lake's carrying capacity. The plan is consistent with the 1986 *GMP*, which calls for expansion of a parking area at Echo Bay.

Although most of the 1986 *GMP* and 2003 *LMP* are still applicable, they did not foresee the current and predicted drought conditions and did not fully consider the effects of greater fluctuations in the lake's water levels. Because of this, an amendment to the general management plan was prepared and approved to provide guidance on a long-term strategy for addressing low water conditions on Lake Mead that affect lake access. The actions presented within this environmental assessment are consistent with the 2005 *General Management Plan Amendment*.

The NPS recently completed an amendment to the 1986 *GMP* to address low water conditions that affect lake access on Lake Mead. With the lake level currently 80 feet below the high water mark and predicted to drop another 20 feet over the next two years, several measures are being taken at the developed areas to maintain visitor use. One of the proposed actions in that plan considered options for relocation of the Overton Beach Marina facility to the Echo Bay developed area. Relocation of the Overton Beach Marina to the Echo Bay area would be within the expansion limits identified in the 2003 *LMP* and is consistent with the 1986 *GMP*. The parking lot expansion proposed in this environmental assessment would be in further demand to accommodate increased visitation.

ENVIRONMENTAL ASSESSMENT

This EA analyzes two action alternatives and the no-action alternative and their impacts 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. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council of Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1508.9) and NPS DO-12.

ISSUES AND IMPACT TOPICS

Issues are related to potential environmental effects of project alternatives and were identified by the project interdisciplinary team. 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 (EOs) 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 Analyses

The following relevant impact topics are analyzed in the EA. Whether each issue is related to taking action or no action is specified.

Soils and Vegetation: Since the two action alternatives involve ground-disturbing activities, soils and vegetation are addressed as an impact topic in this environmental assessment. Construction activities could introduce non-native species into the project area. Degradation to soils and vegetation from vehicles parking in undesignated parking areas could improve from either action alternative.

Wildlife and Wildlife Habitat: Wildlife and wildlife habitat within the project area would be disturbed by either action alternative, therefore this impact topic is considered in this environmental assessment.

Special Status Species: The desert tortoise and bald eagle have been observed in the Echo Bay vicinity. Impacts to these two special status species will be evaluated in this document.

Water Resources: Both action alternatives involve filling low water areas with on-site soil resources to ensure the parking area is above the high water elevation of 1,221 feet. Run-off from the construction site could affect water quality, therefore this impact topic will be considered in this environmental document.

Air Quality: An increase of particulates in the air would occur during construction activities from either action alternative. Paving a parking area would not affect air quality. Dust would be generated from use of a gravel parking lot. Impacts to air quality will be considered in this environmental document.

Visual Resources: Visual resources would be affected from either the no action or action alternatives. The natural habitat would be graded and a parking lot with amenities could be established in an area that has not been developed. A designated area providing sufficient parking for vehicles would eliminate the need for vehicles to park in inappropriate places, reducing degradation to soils and vegetation and enhancing the scenic quality.

Soundscapes: Park soundscapes include both natural and human components. The natural soundscape is considered a park resource and includes all the naturally occurring sounds in the park, not including any sounds of human origin. Impacts to soundscapes will be evaluated in this document.

Cultural Resources: Previous cultural investigations in the Echo Bay area have identified a variety of cultural resources (Ervin 1986). Unidentified cultural resources could exist in the project area and could be disturbed or destroyed by project related activities.

Safety and Visitor Use and Experience: Safety of visitors, NPS and concessioner employees, and construction personnel is important to the NPS. Construction activities associated with either action alternative would occur away from most visitor activities. An adequately sized, safe parking area with improved circulation could positively affect the experience and safety of visitors in the Echo Bay area. Safety and visitor use and experience will be further evaluated within this document.

Park Operations: Park operations could be affected by actions presented in this document and will be evaluated further.

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. The project is not located in designated, proposed, or potential wilderness. There is no grazing occurring in the project area, nor are there prime and unique agricultural lands within the project area. None of these alternatives would have adverse impacts on wild and scenic rivers as there are none in the area. The project area is not located in a sole or principal drinking water aquifer, riparian area, wetland, floodplain, or designated coastal zone; therefore no adverse impacts would occur to any of these areas. Since the project area is not in a designated ecologically significant or critical area and is not listed on the Department of the Interior's National Registry of Natural Landmarks, no impacts would occur to these resources.

In addition, 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.

Regarding energy requirements and conservation potential, construction activities associated with this project would require the increased use of energy for the construction itself and for transporting materials. However, overall, the energy from petroleum products required to implement action alternatives would be insubstantial when viewed in light of production costs and the effect of the national and worldwide petroleum reserves.

There are no potential effects to local or regional employment, occupation, income changes, or tax base as a result of this project. The project area of effect is not populated and, per EO 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 are expected to occur as a result of implementing any alternative.

SECTION II: DESCRIPTION OF ALTERNATIVES

INTRODUCTION

This section describes the alternatives considered, including the No Action Alternative. 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 the alternatives considered.

Alternative A- No Action

Under the no action alternative, no new parking area would be constructed in the Echo Bay developed area and no new amenities would be installed. There are two existing parking areas at Echo Bay. One parking area is located near a restroom and fish cleaning station and provides approximately 40 single parking spaces for vehicles (Figure 4). The other parking area is located near the restaurant, motel, and marina operations complex, and provides



Figure 4- Existing single space parking lot

109 pull-through sites for vehicles with trailers (Figure 5). This parking area is not striped nor is it completely paved. Visitors are required to walk over one mile from the launch facilities to the existing pull-through parking lot, up a steep incline (Figure 6),



Figure 5- Existing pull-through parking area

sometimes in temperatures exceeding 100 degrees, to retrieve their vehicle and trailer. During high use periods, when the existing parking area becomes full, visitors would continue to park in undesignated areas and along the Echo Bay access road. NPS staff time would be spent monitoring the parking situation to ensure visitors are parking only in designated areas.

Damage to roadside soils and vegetation would persist. The parking area would remain in an inconvenient location from the launch ramp, and would continue to take up space that would be optimally utilized for commercial functions. Parking for commercial functions would remain limited. The Echo Bay developed area would not offer enough parking spaces to function at its carrying capacity independent of the water elevation.



Figure 6- Steep incline to launch facilities

Alternative B- Construct Paved Parking Lot

Under this alternative, a 156 double space and 19 single space parking lot would be constructed above high water elevation to accommodate vehicles with trailers. Each space would be a pull-through site, 50' long and 12' wide to allow vehicles with trailers to maneuver easily. A short access road connecting the launch ramp to the parking area would be established in a previously disturbed area. The proposed action would disturb approximately 5.5 acres of desert habitat.

The majority of the project area lies below the high water mark (1,221 feet) and has been degraded over time by alternating periods of flooding and drying (Figure 7). Knolls in the project area extend to an elevation of 1,255 feet and would be excavated to provide material to fill in areas dipping below the high water mark. After low water areas have been filled with on-site material, the area would be graded to an elevation above 1,221 feet and paved. Work would include installing curb and gutters, drainage, and slope protection to direct run-off and control erosion. Large planter islands would be considered in the design of the parking lot. The parking lot would be striped with thermo-plastic striping because it uses recycled plastic and is more durable than conventional paint striping.



Figure 7- Overview of project area.

Existing nearby utility lines would be accessed or photovoltaic electricity would be used to provide lighting for the parking area. Signs would be installed to ensure safe and

navigable circulation. Installation of an informational kiosk would be considered to provide safety and resource information to visitors.

Alternative C- Construct Gravel Parking Lot

Under this alternative, a 156 double space and 19 single space parking lot would be constructed above high water elevation to accommodate vehicles with trailers. Each space would be a pull-through site, 50' long and 12' wide to allow vehicles with trailers to maneuver easily. A short access road connecting the launch ramp to the parking area would also be established in a previously disturbed area. This proposed action would disturb approximately 5.5 acres of desert environment.

The majority of the project area lies below the high water mark (1,221 feet) and has been degraded over time by alternating periods of flooding and drying (Figure 7). Knolls in the project area extend to an elevation of 1,255 feet and would be excavated to provide material to fill in areas dipping below the high water mark. Work associated with constructing the parking lot would include grading, applying a crushed aggregate base course topping, installing rip-rap to protect the slopes and reduce erosion, and striping the project area to identify parking spaces and ease circulation confusion. Although dust palliatives have been used at Lake Mead NRA with limited success, water-compacted aggregate base has been more successful and would be used to bind the surface and minimize impacts to air quality. Grading and reapplying water to the aggregate base surface would occur on an as needed basis, depending on the amount of use the parking area receives.

MITIGATION AND MONITORING

Mitigation measures are specific actions designed to minimize, reduce, or eliminate impacts of alternatives and to protect Lake Mead NRA resources and visitors. Monitoring activities are actions to be implemented during or following construction. The following mitigation related to establishing a parking lot with amenities would be implemented under each action alternative. The environmental consequences section assumes these mitigation measures in the analysis of effects for each action alternative.

Soils and Vegetation

To the extent practicable, disturbed sites would be revegetated with native plant materials (i.e. seeds and transplanted vegetation) salvaged from areas impacted by construction. Soil and plant salvage and restoration efforts would be coordinated with the NPS Vegetation Management Specialist. Any new landscape planting would be coordinated with the NPS Nursery Manager.

To reduce the potential for the spread of non-native species at the project site, all equipment and materials would be cleaned and/or sterilized before entering the park. Areas unpaved yet disturbed during construction activities would be susceptible to weed infestation. These areas would be monitored and treated as necessary.

Special Status Species

The following minimization measures would be implemented to reduce impacts to special status species that could potentially be in the area. The project would be surveyed prior to project activities commencing. A qualified NPS resource manager would be onsite during project activities and would provide desert tortoise education to all construction personnel. The NPS resource manager would inspect all vehicles and equipment for vegetation, soils, and weeds, to minimize the potential for the spread of exotic vegetation. A temporary desert tortoise fence would be erected around the project area to reduce the chance of desert tortoises entering this area. The project site would be kept clean and orderly, trash would be disposed of daily, and any open holes would be covered at the end of each day.

Although wintering bald eagles may be present in the area, neither they nor other migratory birds would be affected from this project as they could fly away from the project site. Bald eagles usually avoid developed areas and places where noticeable human impact has occurred. Abundant suitable habitat for bald eagles is available outside the project area.

Water Resources

Best Management Practices (BMPs) are means of preventing or reducing nonpoint source pollution in the wash and of minimizing soil loss and sedimentation. Erosion control measures would be implemented to minimize minor and short-term impacts to water quality. Sediment traps, oil and grease traps, erosion check structures, and/or filters would be considered. A catch basin could be installed to capture debris and sediment, and to remove oil and grease from run-off. Edges of the parking area would be armored to protect the site from wave action and erosion.

Air Quality

Dust control measures would be implemented to minimize the impacts to air quality associated with ground disturbance and construction activities. All necessary and reasonable measures would be taken to reduce air pollution, including wetting down dry materials during ground-disturbing activities, utilizing or removing excavated materials as soon as possible, and keeping the project area neat, orderly, and in a safe condition at all times. Low-sulfur fuel would be used when available. The contractor will obtain an air quality permit from the Clark County Health District.

Cultural Resources

The NPS would comply with Section 106 of the National Historic Preservation Act. The act requires the NPS to identify any cultural resources that could be affected by construction of the parking lot. If cultural resources are identified, the NPS would consult with the State Historic Preservation Officer as required by 36 CFR 800.

Visual Resources

Landscaping with native vegetation would be considered around the parking lot and within planter islands. Lighting of the parking area would be non-obtrusive and would be consistent with NPS night sky recommendations.

Safety and Visitor Use and Experience

Lighting of the parking lot and signage would be installed to ensure safe and navigable circulation. An informational kiosk could be installed to provide safety and resource information to visitors.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

Expand Existing Parking Area

The existing parking area is located between the motel and restaurant complex and marina operations building. Expansion of this parking lot is not practicable because it is bordered by the concessioner facilities, Echo Bay access road, and a steep bank. There is no space available to expand the existing parking area; therefore this alternative has been eliminated from further evaluation.

Upgrade Existing Parking Area

The goal of the proposed project is to provide an adequate number of parking spaces that is in close proximity to the launch ramp and can operate at carrying capacity regardless of water elevation. Although upgrading the existing parking area would be beneficial, it would not yield any more parking spaces and the location of the parking area would not be any closer to the launch ramp facilities; therefore, this alternative has been dismissed from further evaluation.

CONSULTATION, COORDINATION, AND PERMIT REQUIREMENTS

A press release was provided to area newspapers on October 8, 2004 to announce the scoping period for this environmental assessment (Appendix A). No comments were received during the 30-day scoping period ending on November 12, 2004.

In addition, the following consultation, coordination, and permitting will occur as part of this environmental assessment:

- Informal Section 7 Consultation with U.S. Fish and Wildlife Service
- Nevada Natural Heritage Program
- U.S. Army Corps of Engineers Section 404 Permit
- Nevada Department of Environmental Protection 401 Permit
- Clark County Dust Control Permit
- Stormwater General Discharge Permit for Nevada
- Public distribution and review of EA (30 days)

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:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable or unintended consequences;
- 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;
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and,
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative B is the environmentally preferable alternative because overall it would best meet the requirements in Section 101 of NEPA. Alternative B would balance population and resource use by providing a parking area that would concentrate activities in one area and eliminate the disturbance of soils and vegetation by visitors parking in undesignated areas. Establishing this parking area would attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable or unintended consequences. It would assure for all generations a safe, healthful, environment, and would permit high standards of living and a wide sharing of life's amenities.

Unlike Alternative B, the no-action alternative would not balance population and resource use because a parking area providing sufficient parking spaces would not be available and additional damage to soils and vegetation would occur from people parking in undesignated areas. Unlike Alternative B, the unpaved parking lot described as Alternative C would not attain the widest range of beneficial uses of the environment without undesirable or unintended consequences because although a parking area would be available, the dust generated from use could compromise air quality and visibility, and would not assure a safe, healthful, and esthetically pleasing environment.

COMPARISON OF IMPACTS

Table 1 summarizes the potential long-term impacts of the proposed alternative. 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 from the Alternatives Considered

| IMPACT TOPIC | ALTERNATIVE A (NO ACTION) | ALTERNATIVE B (PREFERRED) | ALTERNATIVE C |
|--|---|--|--|
| Soils and Vegetation | Potential minor, adverse impacts | Permanent impacts to 5.5 acres; Potential long-term beneficial effects | Impacts to 5.5 acres; Potential long-term beneficial effects |
| Wildlife and Wildlife Habitat | No impacts | Minor, adverse, impacts to wildlife habitat | Minor, adverse, impacts |
| Special Status Species | No impacts | No long-term impacts | No long-term impacts |
| Air Quality | No impacts | Long-term beneficial effects | Minor to moderate, adverse impacts |
| Water Resources | No impacts | Potential negligible to minor adverse impacts | Minor, adverse impacts |
| Soundscapes | No impacts | No long-term impacts | No long-term impacts |
| Cultural Resources | No impacts | No long-term impacts | No long-term impacts |
| Visual Resources | Potential minor, adverse impacts | Minor, adverse, impacts; Beneficial effects | Negligible to minor, adverse, impacts; Beneficial effects |
| Safety and Visitor Use and Experience | Potential minor to moderate adverse impacts | Moderate to major beneficial effects | Minor, adverse impacts; Moderate beneficial effects |
| Park Operations | Potential minor to moderate adverse impacts | Minor to moderate beneficial effects to law enforcement | Beneficial effects; minor to moderate adverse impacts |

SECTION III: 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 is found in the *Lake Mead NRA Lake Management Plan and Final Environmental Impact Statement* (2003), *Lake Mead NRA Resource Management Plan* (NPS 2000a), *Lake Mead NRA General Management Plan* (NPS 1986), and on the Park website at www.nps.gov/lame.

LOCATION AND GENERAL DESCRIPTION OF LAKE MEAD NRA AND THE PROJECT AREA

Lake Mead NRA was designated as the first national recreation area in 1964. Lake Mead NRA is located in southern Nevada and northwestern Arizona, about 20 miles southeast of Las Vegas, Nevada, and about 5 miles north of Bullhead City, Arizona, and Laughlin, Nevada (Figures 1 and 2). It consists of two larger reservoirs (Lakes Mead and Mohave) formed by the impoundment of the Colorado River. The recreation area is approximately 1.5 million acres in size, with about 87% of that acreage being terrestrial resources. Approximately 60% of the total acreage is within the state of Arizona, in Mohave County, and 40% of the total acreage is in the state of Nevada, in Clark County.

Lake Mead NRA users include boaters, swimmers, fishermen, canoeists, kayakers, hikers, photographers, roadside sightseers, backpackers, campers, and bicyclists. Recreation visits in 2003 totaled just over 8 million. The majority of park visitation occurs during the summer months and involves water-based recreation. However, visitation is increasing in the spring and fall as visitors discover the backcountry regions of the recreation area through hiking and travel on the approved road system.

The proposed project area for the action alternatives is located within the Echo Bay developed area near the NPS employee housing area and public launch ramp. The Echo Bay developed area supports marina operations, NPS and concessioner employee housing, trailer village, campgrounds, ranger station, and concession-operated restaurant, motel, and marina facilities.

Soils and Vegetation

The Echo Bay developed area is characterized by the creosotebush community. Vegetation in this area includes a sampling of non-native and native vegetation. Intermingled with islands of native vegetation typical of the creosotebush community are manicured lawns, oleanders, fan palms, and other non-native species. The majority of the proposed project area lies below the high water mark and has been degraded over time by alternating periods of flooding and drying. Vegetation consists of native arrowweed, and non-native salt cedar and russian thistle. Although the salt cedar is fairly abundant it is not overly dense and is easily navigable by foot. The presence of salt cedar in the project area indicates high salt content in the soils. Rocky knolls and outcroppings are also

present in the project area. There are no plant species of concern within the proposed project site.

Water Resources

Lake Mead and Lake Mohave are the primary water resources in the region. The project area is near the Overton Arm portion of Lake Mead. Most of the streams in the recreation area are intermittent or ephemeral and are subject to seasonal flash flooding, primarily in the late summer and early fall months. Ephemeral washes in and near the project site drain into Lake Mead. The majority of the proposed project area lies below the high water mark and has experienced periods of flooding and drying in response to rainfall and lake elevation.

Wildlife and Wildlife Habitat

The majority of the project area has been degraded over time by alternating periods of flooding and drying. It is considered low quality habitat due to its close proximity to the developed area and because it has been underwater at various times. Small mammals, reptiles, birds, coyotes, and burros can be found within the development zone of Echo Bay.

Air Quality

The NPS- Air Resources Division, and USFWS- Air Quality Branch together have responsibility for approximately 378 park units and 503 refuges, for which the Clean Air Act designates Class I and Class II air quality areas. Lake Mead NRA is designated as a Class II air quality area, and air quality in the region is generally good. Most reductions in air quality are due to air flows from the Las Vegas Valley west of Lake Mead NRA. The Air Quality Division of the Clark County Health District is the regulatory and enforcement agency for air quality matters in Clark County.

Special Status Species

The NPS consulted the most recent listing of Endangered, Threatened, and Candidate Species on the USFWS website (Appendix B). Species included in that listing that may be in the vicinity of the project area includes the desert tortoise (*Gopherus agassizii*) and bald eagle (*Haliaeetus leucocephalus*).

Desert Tortoise. The desert tortoise, Mojave population, is a federally listed threatened species. The state of Nevada classifies the desert tortoise as protected and rare outside the urban areas of Clark County (Las Vegas). The Mojave population is found to the west and north of the Colorado River and is subdivided into two subpopulations, western and eastern. The project area is within the area occupied by the eastern Mojave subpopulation, which includes tortoises in eastern California, southern Nevada, and the Beaver Dam slope and Virgin River Basin of southwestern Utah and extreme northwestern Arizona (north of the Colorado River). Eastern Mojave tortoises are found in creosotebush, burrobrush (*Ambrosia dumosa*), and creosotebush/ Joshua tree (*Yucca brevifolia*) vegetation types.

The Mojave population of the desert tortoise is threatened by loss and degradation of habitat due to construction activities (roads, pipelines, powerline, housing developments, energy developments, etc.), mining, grazing, and off-road vehicle use. An upper respiratory disease, predation of juveniles by common ravens, illegal collection, and vandalism also are threats to the population. Tortoise populations are probably dependent on relatively rare years of sufficient forage for reproduction and survival. Tortoises are generally active in the spring and fall when annual plants are most abundant, and they must consume their forage requirement during this active period. Tortoises usually spend the remainder of the year in burrows or dens, out of the extreme weather conditions of the desert. Burrows may be under or between bushes, in the banks or beds of washes, in rock outcrops, or in caliche caves.

Bald Eagle

The bald eagle is a federally listed threatened species in the lower 48 states. Bald eagles are believed to live 30 years or longer in the wild, and even longer in captivity. They mate for life and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Nests are often re-used year after year. With additions to the nests made annually, some may reach 10 feet across and weigh as much as 2,000 pounds. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were raised.

The greatest threat to the bald eagle's existence arose from the widespread use of DDT and other pesticides after World War II. With successful programs for breeding in captivity and other recovery methods, as well as habitat improvement and the banning of DDT, bald eagle populations have steadily increased.

Results of Special Status Species Survey

Desert tortoises have been observed in the Echo Bay area, but not within the developed area. A site visit was conducted on November 17, 2004. No tortoise sign was found within the project area, and the NPS biologist determined that the project site is not suitable desert tortoise habitat and that implementation of the project is not likely to adversely affect the desert tortoise.

Bald eagles overwinter at Lake Mead NRA, but nesting has not been documented. Bald eagles have been observed in the Overton Arm of Lake Mead, including the Echo Bay area. Bald eagles could potentially roost on knolls near the project area during the winter months. Most bald eagles avoid places occupied by humans, including developed areas. Nearby knolls and rock outcroppings provide habitat away from the developed area. Project activities may occur during the winter when eagles are present, but the birds would be able to move away from the project site into adjacent suitable habitat. No bald eagles were seen during the site visit.

Soundscapes

Noise-sensitive receptors are those locations where activities that could be affected by increased noise levels occur and include locations such as residences, motels, churches, schools, parks, and libraries. Existing noise levels are determined for the outdoor living

area at sensitive receptors. The dominant noise sources in the project area are generated from marina and park operations.

Cultural Resources

Archeologists have identified a series of Native American cultures that have occupied Lake Mead NRA and adjacent areas in southern Nevada and Western Arizona over the last 12,000 to 13,000 years. The early prehistoric peoples were hunter-gatherers. Around 2,000 years ago, small-scale agriculture was developed around springs and along dependable waterways. Historically there have been several Euro-American groups utilizing the area, including explorers, traders, settlers, miners, and ranchers. The construction of Hoover Dam in the 1930s dramatically changed the landscape of southern Nevada and Western Arizona. It brought thousands of people to the area, put Las Vegas on the map, and helped develop the area's current economy based on recreation and tourism.

Results of Cultural Resource Survey:

The proposed parking lot, access road, and adjacent areas were surveyed for cultural resources in December 2004 (Bonstead 2005). A total of 30 acres were surveyed and no cultural resources were located.

Visitor Use and Experience and Park Operations

Lake Mead NRA is composed of 595,041 hectares (1,470,328 acres) of federal land and 10,254 hectares (25,338 acres) of nonfederal land, for a total of approximately 605,296 hectares (1.5 million acres) (NPS 2004a). Lake Mead NRA users include boaters, swimmers, fishermen, hikers, photographers, roadside sightseers, backpackers, and campers. Recreation visits in 2005 totaled nearly eight million. There is approximately 185,051 acres of designated wilderness in the Nevada portion of Lake Mead NRA, offering solitude and undisturbed vistas to hikers and backpacker.

Park staff in the Echo Bay area includes law enforcement rangers and maintenance personnel that enforce, oversee, and maintain a ranger station, two campgrounds, launch ramps, restrooms, roads, and landscaping.

SECTION IV: 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 impair 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

This section contains the environmental impacts, including direct and indirect effects and their significance to the alternatives. It also assumes that the mitigation identified in the *Mitigation and Monitoring* section of this EA would be implemented under any of the applicable alternatives, as identified in each mitigation criterion.

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.

CRITERIA AND THRESHOLDS FOR IMPACT ANALYSES

The following are laws, regulations, and/ or guidance that relates to the evaluation of each impact topic.

Geologic Resources and Soils

Laws, Regulations, and Policies: NPS Management Policies (4.8) 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 Natural Resources Management Guideline (NPS-77) 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. 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.

Impact Indicators, Criteria, and Methodology: The following impact thresholds were established for 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 would not be affected.
- *Moderate impacts:* Impacts would be localized and small in size, but would cause a permanent change in the soil structure in that particular area.
- *Major impacts:* Impact to the soil structure would be substantial, highly noticeable, and permanent.
- *Impairment:* For this analysis, impairment is considered 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 could not be fulfilled and the resource would be degraded precluding the enjoyment of future generations.

Vegetation

Laws, Regulations, and Policies: The NPS Organic Act directs the park to conserve the scenery and the natural objects unimpaired for future generations. NPS *Management Policies* defines the general principles for managing biological resources as maintaining all native plants and animals as part of the natural ecosystem. When NPS management actions cause native vegetation to be removed, then the NPS will seek to ensure that such removals will not cause unacceptable impacts to native resource, natural processes, or other park resources.

Exotic species, also referred to as non-native or alien, are not a natural component of the ecosystem. They are managed, up to and including eradication, under the criteria specified in *Management Policies* and *NPS-77*.

Impact Indicators, Criteria, and Methodology: The impacts of vegetation were evaluated in terms of impacts to native vegetation and non-native vegetation. The following were used in interpreting the level of impact to vegetation:

- *Negligible impacts:* Impacts have no measurable or perceptible changes in plant community size, integrity, or continuity.

- *Minor impacts:* Impacts are measurable or perceptible and localized within a relatively small area. The overall viability of the plant community would not be affected and, if left alone, would recover.
- *Moderate impacts:* Impacts would cause a change in the plant community (e.g. abundance, distribution, quantity, or quality); however, the impact would remain localized.
- *Major impacts:* Impacts to the plant community would be substantial, highly noticeable, and permanent.
- *Impairment:* The impact would contribute substantially to the deterioration of the park's native vegetation. These resources would be affected over the long-term to the point that the park's purpose (Enabling Legislation, *General Management Plan*, *Strategic Plan*) could not be fulfilled and the resource could not be experienced and enjoyed by future generations.

Wildlife and Wildlife Habitat

Laws, Regulations, and Policies: The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the NPS to mean native animal life should be protected and perpetuated as part of the recreation area's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible. The restoration of native species is a high priority. Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and ecological integrity of plants and animals.

The recreation area also manages and monitors wildlife cooperatively with the Arizona Game and Fish department and the Nevada Division of Wildlife.

Impact Indicators, Criteria, and Methodology: The impacts of wildlife were evaluated in terms of impacts to individual animals and wildlife habitat. Specific localized impacts were estimated based on knowledge garnered from similar past activities.

The following are standards used by the NPS in interpreting the level of impact to wildlife:

- *Negligible impacts:* No species of concern is present; no impacts or impacts with only temporary effects are expected.
- *Minor impacts:* Nonbreeding animals of concern are present, but only in low numbers. Habitat is not critical for survival; other habitat is available nearby. Occasional flight responses by wildlife are expected, but without interference with feeding, reproduction, or other activities necessary for survival.

- *Moderate impacts:* Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or winter; mortality or interference with activities necessary for survival expected on an occasional basis, but not expected to threaten the continued existence of the species in the park.
- *Major impacts:* Breeding animals 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, but there is suitable habitat for use nearby. Few incidents of mortality could occur, but the continued survival of the species is not at risk.
- *Impairment:* The impact would contribute substantially to the deterioration of natural resources to the extent that the park's wildlife and habitat would no longer function as a natural system. Wildlife and its habitat would be affected over the long-term to the point that the park's purpose (Enabling Legislation, *General Management Plan, Strategic Plan*) could not be fulfilled and the resource could not be experienced and enjoyed by future generations.

Threatened and Endangered Species

Laws, Regulations, and Policies: Section 7 of the Endangered Species Act mandates all federal agencies determine how to use their existing authorities to further the purposes of the Act to aid in recovering listed species, and to address existing and potential conservation issues. Section 7(a)(2) states that each federal agency shall, in consultation with the Secretary of the Interior, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Management Policies directs the parks to survey for, protect, and strive to recover all species native to National Park System units that are listed under the Endangered Species Act (4.4.2.3). It sets the direction to meet the obligations of the Act. *Management Policies* also directs the NPS to inventory, monitor, and manage state and locally listed species, and other native species that are of special management concern to the parks, to maintain their natural distribution and abundance.

The *General Management Plan* designated 1,050,030 acres, or 70 percent of the NRA, as natural zones, and areas with known habitat or potential habitat for rare, threatened, or endangered species were further protected by placement in the environmental protection or outstanding natural feature subzone of the natural zone. Management of these zones focuses on the maintenance of isolation and natural process, and restoration of natural resources.

Impact Indicators, Criteria, and Methodology: The Endangered Species Act defines the terminology used to assess impacts to listed species as follows:

- *No effect*: The appropriate conclusion when the action agency determines that its proposed action would not affect a listed species or designated critical habitat.
- *Is not likely to adversely affect*: The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on the best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur.
- *Is likely to adversely affect*: The appropriate finding if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species, but is also likely to cause some adverse effects, then the proposed action “is likely to adversely affect” the listed species. If incidental take is anticipated to occur as a result of the proposed action, an “is likely to adversely affect” determination should be made.
- *Is likely to jeopardize proposed species/adversely modify proposed critical habitat – (Impairment)*: The appropriate conclusion when the action agency or the U.S. Fish and Wildlife Service identify situations in which the proposed action is likely to jeopardize the continued existence of a proposed species or adversely modify the proposed critical habitat.

Air Quality

Laws, Regulations, and Policies: Air pollution sources within parks must comply with all federal, state, and local regulations. The regulations and policies that govern pollutants of concern are discussed briefly below.

Lake Mead NRA is designated as a Class II Air Quality area under the Clean Air Act. The main purpose of this act is to protect and enhance the nation’s air quality to promote the public health and welfare. The act establishes specific programs to provide protection for air resources and values, including the program to prevent significant deterioration of air quality in clean air regions of the country. Although Lake Mead NRA is designated as a Class II Air Quality area, the park strives to maintain the highest air quality standards, and project work within the recreation area is completed in accordance with regional standards. However, the recreation area does not possess sufficient autonomous authority to address issues of air quality improvements when air pollution originates outside the boundaries.

NPS Management Policies direct parks to seek to perpetuate the best possible air quality to preserve natural and cultural resources, sustain visitor enjoyment, human health, and

preserve scenic vistas (4.7). Parks are directed to comply with all federal, state, and local air quality regulations and permitting requirements. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the NPS "will err on the side of protecting air quality and related values for future generations."

Impact Indicators, Criteria, and Methodology: Information from the literature was used to assess probable impacts to air quality. There are four impact categories relevant to air quality issues: negligible, minor, moderate and major. Each category is discussed below relative to potential airborne pollution impacts from the alternatives on park resources and human health.

- *Negligible impacts:* There is no smell of exhaust and no visible smoke. Dust from construction activities can be controlled by mitigation.
- *Minor impacts:* There is a slight smell of exhaust and smoke is visible during brief periods of time. Dust from the use of dirt roads is visible during brief periods. Dust from construction activities is visible only during the work period, but most can be controlled by mitigation.
- *Moderate impacts:* There is a smell of gasoline fumes and exhaust in high-use areas. Smoke is visible during periods of high use. Dust from the use of dirt roads is visible for an extended area. Dust from construction activities is visible for over a large area for an extended period, but is reduced by mitigation.
- *Major impacts:* Smoke and gasoline fumes are easily detectable for extended periods of time in a large area. Dust from the use of dirt roads and construction activities is visible for an extended period of time, and mitigation is unable to alleviate the conditions.

Water Resources and Water Quality

Laws, Regulations, and Policies: The Clean Water Act, and supporting criteria and standards promulgated by the Environmental Protection Agency (EPA), the Nevada Department of Environmental Protection (NDEP), and the Arizona Department of Environmental Quality (ADEQ) are used at Lake Mead NRA to protect water quality as it relates to human health, health of the aquatic ecosystem, and recreational use.

A primary means for protecting water quality under the Clean Water Act is the establishment, implementation, and enforcement of water quality standards. Generally, the federal government has delegated the development of standards to the individual states subject to EPA approval. Water quality standards consists of three components: (1) the designated beneficial uses of a water body, such as aquatic life, cold water fishery, or body contact recreation (i.e. swimming or wading); (2) the numerical or narrative criteria that define the limits of physical, chemical, and biological characteristics of water that are sufficient to protect the beneficial uses; and (3) an anti-degradation provision to protect

the existing uses and quality of water. In addition, the National Park Service complies with Section 313 of the Clean Water Act, Federal Facilities Pollution Control.

Water quality standards are primarily obtained by controlling the pollutants permitted in point source discharges of pollutants into receiving waters through Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) permits, the implementation of Best Management Practices for non-point sources of pollution, and the implementation of Clean Water Act Section 303d Total Maximum Daily Loads (TMDL's) on water bodies that have chronic and persistent violations of water quality standards. The objective of a TMDL is to allocate allowable pollutant loads among different point and non-point sources of pollution. Construction sites where one or more acres are disturbed are considered point sources of pollution and require a National Pollutant Discharge Elimination System (NPDES) storm water permit under section 402 of the CWA. In addition, the following types of storm water discharges are regulated under the NPDES permit program: discharges from municipal separate sewer systems serving populations of 100,000 or more; discharges associated with industrial activities, including construction sites of 5 acres or more; and other discharges identified by EPA or a state as needing an NPDES permit because they contribute to a water quality violation (EPA 1995).

Water quality in Lake Mead in Nevada is regulated by NDEP under water quality standards and regulations that are promulgated in the Nevada Administrative Code (NAC, Chapter 445A.118-445A.225). Consistent with federal regulations, Nevada has established numerical and narrative standards that protect existing and designated uses of the State's waters, and implements the anti-degradation requirements by establishing "requirements to maintain existing higher quality." Compliance with the numerical standards for water quality is determined at control points that are specified in the regulations.

The NDEP has divided the administration of water quality management in Lake Mead into two discreet units divided by a control point near the confluence of Las Vegas Wash with Lake Mead. Standards for the portion of Lake Mead from the western boundary of Las Vegas Marina Campground to the confluence of Las Vegas Wash are generally less strict than for the rest of Lake Mead to accommodate pollution from wastewater discharges and urban runoff from the City of Las Vegas. Requirements to Maintain Existing Higher Water Quality in Lake Mead have been established by NDEP east of the Las Vegas Wash Control Point for a few physical and chemical water quality parameters that includes temperature, pH, chlorophyll, total dissolved solids, nitrogen, turbidity, and color.

The Lake Mead NRA Resource Management Plan identifies internal threats to water resources, including heavy recreational use in coves illegal sewage discharge and petrochemical spills in harbors. External threats are identified as materials transported to the lakes by outside sources, air pollutants dropping into the lakes, and adjacent land uses and increasing development.

The following impact thresholds were established to describe the relative changes in water quality (localized, short-term, long-term, cumulative, adverse, and beneficial), under the various alternatives, when compared to baseline conditions.

- *Negligible impacts*: Impacts are effects that are not detectable, well below water quality standards and/or historical ambient or desired water quality conditions.
- *Minor impacts*: Impacts are effects that are detectable but well within or below water quality standards and/or historical ambient or desired water quality conditions.
- *Moderate impacts*: Impacts are effects that are detectable, within or below water quality standards, but historical baseline or desired water quality conditions are being altered on a short-term basis.
- *Major impacts*: Impacts are effects that are detectable, and significantly and persistently alter historical baseline or desired water quality conditions. Water quality standards are locally approached, equaled, or slightly singularly exceeded on a short-term and temporary basis.
- *Impairment*: Impacts are effects that alter baseline or desired water quality conditions on a long-term basis. Water quality standards are exceeded several times on a short-term and temporary basis.

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 (1916), the Antiquities Act of 1906, the National Historic Preservation Act of 1966 (1992, as amended), the National Environmental Policy Act of 1969, the National Parks and Recreation Act of 1978, the Archeological Resources Protection Act of 1979, the Native American Graves Protection and Repatriation Act of 1990, and the Curation of Federally Owned and Administered Archeological Collections (1991).

Applicable agency policies relevant to cultural resources include Chapter 5 of NPS *Management Policies*, and the *Director's Order 28: Cultural Resource Management Guideline* (NPS 1998), as well as other related policy directives such as the *NPS Museum Handbook* (NPS 2000d), the *NPS Manual for Museums* (Lewis 1976), and *Director's Order 6: Interpretation* (NPS 2001a).

The Antiquities Act of 1906 (P.L. 209) authorized the president to establish historic landmarks and structures as monuments owned or controlled by the U.S. government and instituted a fine for unauthorized collection of their artifacts.

The NPS Organic Act (16 USC 1-4) established the agency to manage the parks and monuments with the purpose of conserving historic objects within them and providing for their enjoyment.

The National Historic Preservation Act of 1966 (NHPA; 16 USC 470, et seq.) requires in section 106 that federal agencies with direct or indirect jurisdiction over undertakings take into account the effect of those undertakings on properties that are listed on, 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 state historic preservation office to identify, evaluate, and nominate properties to the national register. This act applies to all federal undertakings or projects requiring federal funds or permits.

The National Environmental Policy Act of 1969 (NEPA; P.L. 91-190) sets forth federal policy to preserve important historic, cultural, and natural aspects of our national heritage and accomplishes this by assisting federal managers in making sound decisions based on an objective understanding of the potential environmental consequences of proposed management alternatives. This act applies to any federal project or other project requiring federal funding or licensing. This act requires federal agencies to use a systematic, interdisciplinary approach integrating natural and social sciences to identify and objectively evaluate all reasonable alternatives to a proposed action.

The National Parks and Recreation Act of 1978 (P.L. 95-625) requires that general management plans be developed for each unit in the national park system and that they include, among other things, measures for the preservation for the area's resources and an indication of the types and intensities of development associated with public use of a given unit.

The Archeological Resources Protection Act of 1979 (16 USC 470aa-mm) further codifies the federal government's efforts to protect and preserve archeological resources on public lands by stiffening criminal penalties, as well as instituting civil penalties, for the unauthorized collection of artifacts. Additionally, it establishes a permit system for the excavation and removal of artifacts from public lands, including their final disposition, as well as confidentiality provisions for sensitive site location information where the release of such information may endanger the resource.

The Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) sets forth procedures for determining the final disposition of any human remains, funerary objects, or objects of cultural patrimony that are discovered on public lands or during the course of a federal undertaking.

“The Curation of Federally Owned and Administered Archeological Collections” (36 CFR 79) establishes guidelines and procedures for the proper curation and management of archeological collections owned or administered by federal agencies.

Impact Indicators, Criteria, and Methodology: Impacts on cultural resources were developed based on existing conditions, current regulations, and likely development trends. The inventory of archaeological resources in the park is largely incomplete. For purposes of assessing impacts, all unrecorded resources are considered potentially eligible for listing on the National Register of Historic Places.

The park’s inventory of standing structures and cultural landscapes is relatively complete; however, many structures and landscapes still require evaluation to determine their eligibility for listing on the National Register of Historic Places. For purposes of assessing potential impacts to these properties, unevaluated structures and landscapes are assumed to be potentially eligible.

Under Section 106 of the National Historic Preservation Act (NHPA), only historic resources that are eligible or are listed on the National Register of Historic Places are considered for impacts. An impact to a property occurs if a proposed action would alter in any way the characteristic that qualifies it for inclusion on the register.

Under the Advisory Council’s regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected, National Register eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion in the National Register, e.g. diminishing the integrity of the resource’s location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the preferred alternative that would occur later in time, be farther removed in distance or be cumulative (36 CFR Part 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

For the purposes of this document, the level of impacts to cultural resources was accomplished using the following criteria:

- *Negligible impacts:* No potentially eligible or listed properties are present; no direct or indirect impacts. For purposes of Section 106, the determination would be *no effect*.
- *Minor impacts:* Potentially eligible or listed properties are present; no direct impacts, i.e. no impacts that diminish the integrity of the property, or impacts with only temporary effects are expected. For purposes of Section 106, the determination would be *no adverse effect*.

- *Moderate impacts:* Potentially eligible or listed properties are present; indirect impacts may occur or, in the case of structures, activity is limited to rehabilitation conducted in a manner that preserves the historical and architectural value of the property. For purposes of Section 106, the determination would be *no adverse effect*.
- *Major impacts:* Potentially eligible or listed properties present; direct impacts including physical destruction, damage, or alteration of all or part of a property. Isolation of a property from or alteration of the character of a property's setting when that character contributes to its eligibility, including removal from its historic location. Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting. Neglect of a property resulting in its deterioration or destruction (36 CFR 800.5). For purposes of Section 106, the determination would be *adverse effect*.
- *Impairment:* Loss, destruction, or degradation of a cultural property, resource, or value to the point that it negatively affects the park's purpose and visitor experience. For purposes of Section 106, the determination would be *adverse effect*.

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

CRITERIA AND THRESHOLDS FOR IMPACT ANALYSES OF ALL OTHER ISSUES

Impacts to soundscapes, visual resources, safety and visitor use and experience, and park operations were analyzed using the best available information and best professional judgment of park staff.

Environmental Impact= a change that will alter:

1. the quality of the human environment;
2. an object protected by law; or
3. an object of high public concern.

Terms referring to impact intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

- *Negligible impacts:* The impact is at the lower level of detection; there would be no measurable change.
- *Minor impacts:* The impact is slight but detectable; there would be a small change.
- *Moderate impacts:* The impact is readily apparent; there would be a measurable change that could result in a small but permanent change.

- *Major impacts:* The impact is severe; there would be a highly noticeable, permanent measurable change.
- *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.

IMPAIRMENT ANALYSIS

In addition to determining the environmental consequences of the alternatives, NPS Management Policies 2001, requires the analysis of potential effects to determine if actions would impair park resources. Under the NPS Organic Act and the General Authorities Act, 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 (Management Policies 1.4.3).

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 would otherwise 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 the 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.

CUMULATIVE EFFECTS

Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). Guidance for implementing NEPA (Public Law 91-190, 1970) requires that federal agencies identify the temporal and geographic boundaries within which they will evaluate the 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.

Las Vegas Valley area population growth and Park Visitation

Population growth in the Las Vegas Valley area and increases in area visitation are considered when analyzing the cumulative impacts of the proposed alternatives. The Las Vegas Valley was developed in conjunction with the railroads in the early 1900s. After that, the establishment of legalized gambling in 1910, construction of the Hoover Dam in 1935, and World War II continued to promote urban growth. During the 1930s, Las Vegas was a small railroad town with a population of just over 5,000. Starting in the mid-1980s, annual population increases averaging nearly seven percent caused Las Vegas' population to almost double between 1985 and 1995, increasing from about 186,000 to 368,000, a 97.6 percent increase. At the same time, Clark County's population increased from 562,000 to 1,036,000, an increase of 84.3 percent (Las Vegas City 2004). The 2005 population estimate for Las Vegas is 575,973; and 1,815,700 for Clark County (Las Vegas City 2006).

With the predicted increases in population in the local area, and continuing visitation from California and Arizona, park visitation will continue to increase above the current 8 to 10 million visitors per year. The project area is located in the Echo Bay developed area of the park. Historically, this area has not been heavily used because of its distance from southern California and Las Vegas. However, in response to crowding at developed areas in the Boulder Basin, more visitors are seeking less crowded conditions at more distant areas. Visitation to the Echo Bay developed area of the park in 2005 was approximately 275,000.

Drought Conditions in the Colorado River Basin

The past five years of drought conditions in the Colorado River Basin have resulted in the lowest lake elevations of Lake Mead in over 40 years. Runoff during this period has been approximately 60% or less than normal. An amendment to the 1986 *GMP* was developed to provide guidance on long-term strategies for addressing low water conditions on Lake Mead that affect lake access.

One of the proposed actions in the 2005 *GMP Amendment* considered options for relocation of the Overton Beach Marina facility to the Echo Bay developed area. Relocation of the Overton Beach Marina to the Echo Bay area would be within the expansion limits identified in the 2003 *LMP* and is consistent with the 1986 *GMP*. In 2005 visitation to the Overton Beach area was over 260,000. The parking lot expansion proposed in this environmental assessment would be in further demand to accommodate increased visitation, if relocation of the Overton Beach Marina to Echo Bay were to occur.

ALTERNATIVE A- NO ACTION

Soils and Vegetation

During periods of high water when parking is limited, degradation to the natural environment caused by visitors parking along roadways and in undesignated areas would continue to occur. Soils along roadways are not considered quality habitat, but native vegetation would be destroyed and areas disturbed by vehicles would be more susceptible to weeds. The no action alternative could potentially lead to long-term, minor, adverse impacts on soils and vegetation.

Cumulative Effects: Vehicles parked along roadways and not in designated areas would disturb soils and vegetation along the roadways and could introduce or spread weeds. The park has an intensive program to monitor and control weeds, but the problem areas are numerous and crews to do the work are limited. Depending on the severity of weed infestation, crew time and resources would be needed to control the spread of weeds caused by vehicle disturbance.

Conclusion: Soils and vegetation would be affected during periods of high water when parking is limited and visitors are forced to park in undesignated areas. Weeds would occupy areas disturbed by vehicles. Taking no action could potentially result in long-term, minor, adverse impacts on soils and vegetation. No impairment to soils and vegetation would occur from Alternative A.

Wildlife and Wildlife Habitat

There would be no new impacts on wildlife or wildlife habitat as a result of the no action alternative.

Cumulative Effects: There would be no cumulative effects to wildlife or wildlife habitat.

Conclusion: There would be no impacts and no impairment to wildlife or wildlife habitat from Alternative A.

Special Status Species

There would be no impacts on threatened, endangered, and other sensitive species under this alternative since no construction activity would occur.

Cumulative Effects: No cumulative effects would occur to threatened, endangered, and other sensitive species.

Conclusion: There would be no impacts and no impairment to special status species under the no action alternative, since construction activity would not occur.

Air Quality

Alternative A would result in no change and no impacts on air quality.

Cumulative Effects: No cumulative effects would occur to air quality.

Conclusion: There would be no impacts and no impairment to air quality under this alternative since no project activities would occur.

Water Resources

There would be no impacts on water resources from Alternative A.

Cumulative Effects: No cumulative effects would occur to water resources.

Conclusion: There would be no impacts and no impairment to water resources from the no action alternative.

Soundscapes

There would be no change in existing conditions on the area soundscapes under this alternative.

Cumulative Effects: No cumulative effects would occur to soundscapes.

Conclusion: There would be no impacts on soundscapes, since no change to existing conditions would occur under this alternative.

Cultural Resources

There would be no impact on cultural resources under Alternative A.

Cumulative Effects: There would be no cumulative effects to cultural resources under Alternative A.

Conclusion: There would no impacts or impairment to cultural resources under Alternative A.

Visual Resources

There would be no consolidated parking area established that would provide sufficient parking for pull-through vehicles. During high-use periods when parking is unavailable, visitors would continue to park along the Echo Bay access road and in other illegal areas. Disturbance to soils and vegetation from visitors parking in undesignated areas could increase the potential for the introduction and spread of weeds. Although roadways and developed areas are not considered to have a high scenic value, weed infestation would detract from the natural surrounding desert environment and could spread into these areas. Tire tracks in undisturbed areas could potentially attract off-road enthusiasts and entice them to drive off-road onto natural desert areas, which would have highly detrimental effects. Alternative A could potentially result in long-term, minor, adverse impacts to visual resources.

Cumulative Effects: There would be no cumulative effects to visual resources from Alternative A.

Conclusion: Weeds and tire tracks in undisturbed areas would create minor, adverse, long-term impacts on visual resources.

Safety and Visitor Use and Experience

During high-use periods, visitors are asked to park their vehicles and trailers approximately one mile or farther from the launch ramp. This distance, coupled with the fact that visitors must climb a steep hill to retrieve their vehicles, sometimes in temperatures exceeding 100 degrees, could result in health and safety issues for the public and a negative visitor experience. When the existing parking area is full, visitors park along the Echo Bay access road and other illegal parking areas.

The existing parking lot may fill up with vehicles and trailers from visitors recreating on the lake, limiting parking options for visitors to the motel and restaurant. This could create frustration for all visitors trying to find a parking space near their destination. Parking circulation would remain ambiguous and would create confusion during periods of high visitation. Alternative A would result in long-term, minor to moderate, adverse impacts on safety and visitor use and experience.

Cumulative Effects: Visitation to Lake Mead NRA is expected to continue to increase and the Echo Bay area may experience more visitation as visitors to Lake Mead seek less congested areas with easy access to the lake. The 2003 *LMP* authorized expansion of the Echo Bay developed area. Due to the low water levels of Lake Mead, Overton Beach Marina may be required to relocate or close down their operations. Echo Bay is being considered as a potential relocation site.

Conclusion: The no action alternative would result in long-term, minor to moderate, adverse impacts on safety and visitor use and experience. The parking area would remain in an inconvenient location from the launch ramp and no space would be freed up for visitors utilizing the land-based facilities including the restaurant and motel.

Park Operations

Law enforcement would continue to monitor parking to ensure that visitors are not parking in undesignated areas and disturbing soils and vegetation. Staff time would be spent trying to control visitors from parking as close to the launch ramp as possible in illegal areas. The potential for health issues arising from visitors having to retrieve their vehicles and trailers over one mile away from the launch ramp, up a steep incline, in temperatures sometimes exceeding 100 degrees, could result in more emergency medical responses. Overcrowding and a lack of parking spaces near the launch ramp could lead to confusion, frustration, and visitor conflicts which could require intervention from park rangers. Taking no action would continue minor to moderate, adverse, long-term impacts on park operations.

Cumulative Effects: Park rangers would continue to monitor the parking situation and respond to parking violations and potential health and safety issues. Vehicles parked along roadways and in undesignated areas would continue to disturb soils and vegetation and may introduce or spread weeds. Weeds that are not initially treated have the potential to spread and would require more staff time to control them. Depending on the severity of weed infestation, crew time and resources would be needed to do this work. Current staffing at Lake Mead NRA is over-extended, and response to these issues may be delayed.

Conclusion: NPS staff time would be spent trying to control visitors from parking in undesignated areas and mediating visitor frustration and conflicts. Situations could arise requiring emergency response to visitors retrieving vehicles in unfavorable conditions. The no action alternative would result in long-term, minor to moderate, adverse impacts on park operations.

ALTERNATIVE B- Construct Paved Parking Area

Soils and Vegetation

The majority of the project area has been degraded over time by alternating periods of flooding and drying. Under Alternative B, approximately 5.5 acres of low quality habitat would be permanently altered by the paving of a parking area. Knolls within the project area would be bladed down to supply material for filling in areas below the high water elevation (1,221 feet). Vegetation would be permanently removed and would not be replanted in the immediate area, as this area would be paved. Replanting native vegetation in the island planters could occur. A short access road, approximately 1/16 mile, would be constructed in a previously disturbed area connecting the parking area with the Echo Bay access road. Introduction of non-native species into the project area is a concern due to the potential for construction equipment to transport seeds, dirt, and weeds into the park. Mitigation would reduce the potential for the introduction of non-native species. Alternative B would create minor, long-term adverse impacts to soils and vegetation from paving. Some beneficial effects- from a reduction in disturbance to soils and vegetation created by visitors parking along roadways and in undesignated areas- would result.

Cumulative Effects: The location being considered for construction of the parking area was identified in the 1986 *GMP*. The purpose of the developed zones is to provide facilities for park operations and visitor enjoyment. Developed zones throughout the recreation have impacted approximately 800 acres of the park's 1.3 million acres. The Echo Bay development zone has been impacted by the development of facilities. This project would add an additional 5.5 acres of permanently altered soils to the recreation area.

Conclusion: This alternative would have minor, adverse, long-term impacts on approximately 5.5 acres of soils and vegetation since impacts would be localized and small in size on marginal habitat, but would cause a permanent change in soil structure. Some beneficial effects to soils and vegetation would result from visitors parking in an approved area, rather than in undesignated areas. Mitigation should prevent the introduction of non-native species during the construction period. No impairment to soils or vegetation would result from implementation of this alternative.

Wildlife and Wildlife Habitat

The majority of the project area has been degraded over time by alternating periods of flooding and drying and does not provide quality habitat. Small mammals and reptiles located within or near the project area would be temporarily disturbed during construction activities, and permanently displaced due to the paving of the area. Flight responses by wildlife are expected, and larger mammals, such as coyotes, would avoid the project area during construction activities. Alternative B would permanently alter approximately 5.5 acres of low quality habitat. To the greatest extent practicable, construction activities would be scheduled to occur from November through March to avoid the breeding season. Short-term disturbance to wildlife would be negligible and long-term loss of habitat would be minor.

Cumulative Effects: Wildlife habitat in the Echo Bay development zone, and other development zones, has been permanently altered by the construction of facilities, parking lots, overlooks, and the planting and irrigation of non-native vegetation. The area continues to support some wildlife, such as small mammals, reptiles, birds, and coyotes. This alternative would displace wildlife, but would not add to the loss of high quality habitat since the area is within the development zone and is considered low quality habitat.

Conclusion: Approximately 5.5 acres of low quality habitat would be permanently altered from paving activities. Short-term disturbance to wildlife would be negligible and long-term loss of habitat would be minor. No impairment to wildlife or wildlife habitat would occur from this alternative.

Special Status Species

A site visit was conducted on November 17, 2004 and no desert tortoise sign was found in the project area. The NPS biologist determined that the project site is not suitable desert tortoise habitat. Although wintering bald eagles may be present in the area, neither

they nor other migratory birds would be affected from this project as they could fly away from the project sites into adjacent suitable habitat. No bald eagles were observed during the site visit.

Construction of the parking area would permanently alter approximately 5.5 acres of low quality habitat. Mitigation measures implemented during this project would protect special status species; therefore this project would not likely adversely affect the desert tortoise or bald eagle.

Cumulative Effects: The development of private land in the vicinity of Las Vegas and its suburbs and the associated loss and degradation of desert tortoise habitat is expected to continue into the future. Actions on private lands, such as urban development, recreation, and grazing, would continue to contribute to habitat degradation and loss for all biotic species.

Conclusion: The proposed action is not likely to adversely affect the desert tortoise or bald eagle. Approximately 5.5 acres of low quality habitat would be permanently altered; however, Lake Mead NRA provides thousands of acres of suitable habitat near the project site and throughout the recreation area. No impairment would occur to threatened and endangered species.

Air Quality

Construction activities generate dust and pollution from the use of heavy equipment. This would occur only during construction activities, and would be localized in the construction zone. There would be a slight smell of exhaust, and smoke and dust would be visible during brief periods of time. This alternative would result in short-term, minor, adverse, localized impacts on air quality during construction activities. Mitigation measures would be utilized to alleviate these impacts. Beneficial long-term effects on air quality would result as no dust would be generated by visitors parking in a paved lot.

Cumulative Effects: Air quality around Lake Mead NRA is affected by a variety of internal and external sources, including powerplants, motor vehicle and vessel emission, and dust from the use of approved backcountry roads. The project area is in relatively close proximity to Las Vegas and Henderson, and regional air quality has already been compromised. This project would not add to the long-term, cumulative effects.

Conclusion: Mitigation measures would alleviate the short-term, minor, adverse, localized impacts on air quality during construction of the parking lot. Long-term beneficial effects on air quality would result from paving activities. No impairment to air quality would occur from implementing this alternative.

Water Resources

Best Management Practices (BMPs) for controlling nonpoint pollution during construction activities would be implemented and would help control sedimentation and erosion during small storm events. Depending on the extent to which storm events occurred during construction activities, short-term, adverse impacts on water quality from

increased erosion and sedimentation could occur. Turbidity would range from negligible to minor.

Paving a natural area would create an impervious surface, which could result in pollutant loadings in surface run-off. Mitigation would be implemented to reduce or eliminate any impacts on water resources that run-off from a paved surface could create. Construction of the parking area would include installing curb and gutters, drainage, and slope protection, all of which would help to control and reduce runoff pollution. This would result in the potential for negligible to minor long-term, adverse impacts on water resources.

Cumulative Effects: Visitor use and facilities in the recreation area contribute sediments and pollutants into Lake Mead. Continuing and upcoming projects including the implementation of the *Lake Management Plan*, boat ramp improvements, *Low Water Amendment* to the *GMP*, and the *Systems Conveyance and Operations Program*, are likely to have both beneficial and adverse impacts on water resources. This project would not appreciably add to the long-term, cumulative effects.

Conclusion: Alternative B would result in potentially negligible to minor long-term, adverse impacts on water resources. BMPs and mitigation would be implemented to minimize or eliminate impacts on water resources. Impairment to water resources would not occur from implementing Alternative B.

Soundscapes

The proposed project is in a developed area of the park where noise is expected. Construction activities associated with paving a parking area would create temporary, localized, minor, adverse impacts on soundscapes. Project work would occur during the day and would avoid evening hours.

Cumulative Effects: The project is located in a developed area of the park, and human-generated noise occurs in the form of motorized vessels, vehicular traffic, and air traffic. There would be no long-term cumulative effect on soundscapes.

Conclusion: Construction activities associated with Alternative B would create localized, temporary, minor, adverse impacts on soundscapes in the area. No long-term impact on soundscapes would occur from implementation of this alternative.

Cultural Resources

There would be no impact on cultural resources under Alternative B.

Cumulative Effects: There would be no cumulative effects to cultural resources under Alternative B.

Conclusion: There would be no impacts or impairment to cultural resources under Alternative B.

Visual Resources

Under this alternative, approximately 5.5 acres of marginal, low quality habitat would be permanently altered from paving activities. A parking lot would be constructed in an area where one does not exist. Establishing a designated parking area providing sufficient space for vehicles and trailers would eliminate the need for visitors to park their vehicles in inappropriate places and would reduce degradation to soils and vegetation along the Echo Bay access road, resulting in some beneficial effects.

Although this alternative would permanently alter the landscape in the project area, the site is located within the Echo Bay development zone adjacent to paved roads, launch ramps, housing, campgrounds and other marina and visitor support facilities. Establishing a paved parking area at this location would not detract substantially from the visual resources. Alternative B would result in a long-term, minor, adverse impact on visual resources with some beneficial effects from improving soils and vegetation along the Echo Bay access road.

Cumulative Effects: Preserving the high visual quality of Lake Mead NRA is integral to preserving the quality of the recreation experience and is why expansion of developed areas is closely regulated. This project was identified in the *GMP* and is within the Echo Bay development zone where visual quality is less of a concern. No cumulative effects would result from this project.

Conclusion: A measurable change to the visual resources in the Echo Bay developed area would result because a new paved parking area would be established under this alternative. The project site is located within the Echo Bay developed area and would be adjacent to existing facilities and paved roads; therefore, this project would result in a long-term, minor, adverse impact on visual resources with some beneficial effects from concentrating vehicle parking in one area, which in turn would improve soils and vegetation along the Echo Bay access road.

Safety and Visitor Use and Experience

Alternative B would result in moderate to major, beneficial, long-term effects to visitor safety and experience. Since a paved parking lot would be constructed, visitors would not be required to park over a mile away and walk up a steep incline to retrieve their vehicle and trailer. This would reduce the potential for health risks associated with climbing a steep incline in temperatures sometimes exceeding 100 degrees. A designated parking area providing a sufficient amount of pull-through parking spaces would direct vehicle and trailer traffic to one consolidated area and would free up much needed space near the restaurant and motel complex. This would drastically improve the experience of visitors wishing to recreate on the lake and for those enjoying land-based facilities.

Cumulative Effects: The addition of this parking area was identified in the 1986 *GMP*. The Echo Bay developed area has been zoned for various projects which would enhance visitor experience and provide the necessary amenities and facilities to accommodate visitors, while protecting the natural and cultural resources in the surrounding area. This

project would provide adequate parking that would support visitation and the carrying capacity established for the Echo Bay developed area at any lake elevation.

Conclusion: Alternative B would result in moderate to major, beneficial, long-term effects on the safety and experience of visitors to the Echo Bay area.

Park Operations

Under Alternative B, a parking lot would be established and would reduce the need for law enforcement from having to monitor visitors parking in illegal areas. NPS staff time would not be spent on responding to potential medical conditions associated with visitors retrieving their vehicles and trailers in unfavorable conditions, or from mediating visitor conflicts resulting from lack of parking. Striping the parking area with thermo-plastic striping rather than conventional paint striping would be more sustainable and require less maintenance.

Cumulative Effects: There would be no cumulative effects to park operations from implementation of this project.

Conclusion: Long-term, minor to moderate, beneficial effects to law enforcement would occur from Alternative B because less staff time would be required to monitor parking, mediate visitor conflicts, and respond to potential health issues.

ALTERNATIVE C- Construct Gravel Parking Lot

Soils and Vegetation

Under Alternative C, approximately 5.5 acres of marginal habitat would be disturbed. Knolls within the project area would be bladed down to supply material for filling in areas below the high water mark (1,221 ft.). Vegetation would be permanently removed from the project area. Replanting native vegetation in the area could occur. A short access road, approximately 1/16 mile, would be constructed in a previously disturbed area connecting the parking area with the Echo Bay access road. Introduction of non-native species into the project area is a concern due to the potential for construction equipment to transport seeds, dirt, and weeds into the park. Mitigation would reduce the potential for the introduction of non-native species. Alternative C would create minor, long-term adverse impacts to soils and vegetation. Some beneficial effects- from a reduction in disturbance to soils and vegetation created by visitors parking along roadways and in undesignated areas- would result.

Cumulative Effects: The location being considered for construction of the parking area was identified in the 1986 *GMP*. The purpose of developed zones is to provide facilities for park operations and visitor enjoyment. Developed zones throughout the recreation have impacted approximately 800 acres of the park's 1.3 million acres. The Echo Bay development zone has been impacted by the development of facilities. This project would add an additional 5.5 acres of altered soils to the recreation area.

Conclusion: This alternative would have minor, adverse, long-term impacts on approximately 5.5 acres of soils and vegetation since impacts would be localized, small in size, and in marginal habitat. Some beneficial effects to soils and vegetation would result from visitors parking in an approved area, rather than in undesignated areas. Mitigation should prevent the introduction of non-native species during the construction period. No impairment to soils or vegetation would result from implementation of this alternative.

Wildlife and Wildlife Habitat

Alternative C would alter approximately 5.5 acres of low quality wildlife habitat. Suitable habitat is available nearby the project area. Small mammals, birds, and reptiles located within or nearby the project area would be temporarily disturbed during construction activities. Flight responses by wildlife are expected, and larger mammals, such as coyotes, would avoid the project area during construction activities. To the greatest extent practicable, construction activities would be scheduled to occur from November through March to avoid breeding season. Alternative C would result in long-term, minor, adverse impacts on wildlife and wildlife habitat.

Cumulative Effects: Wildlife habitat in the Echo Bay development zone, and other development zones, has been permanently altered by the construction of facilities, parking lots, overlooks, and the planting and irrigation of non-native vegetation. The area continues to support some wildlife, such as small mammals, reptiles, birds, and coyotes. This alternative would displace additional wildlife, but would not add to the loss of habitat since the area is within the development zone and is considered low quality habitat.

Conclusion: Approximately 5.5 acres of low quality habitat would be altered. Since this habitat is not critical for survival, there is available habitat nearby, and flight responses are expected, minor, adverse, long-term impacts on wildlife and wildlife habitat would result. No impairment to wildlife or wildlife habitat would occur from this alternative.

Special Status Species

A site visit was conducted on November 17, 2004 and no desert tortoise sign was found in the project area. The NPS biologist determined that the project site is not suitable desert tortoise habitat. Although wintering bald eagles may be present in the area, neither they nor other migratory birds would be affected from this project as they could fly away from the project sites into adjacent suitable habitat. No bald eagles were observed during the site visit.

Construction of the parking area would alter approximately 5.5 acres of low quality habitat. Mitigation measures implemented during this project would protect special status species; therefore this project would not likely adversely affect the desert tortoise or bald eagle.

Cumulative Effects: The development of private land in the vicinity of Las Vegas and its suburbs and the associated loss and degradation of desert tortoise habitat is expected to

continue into the future. Actions on private lands, such as urban development, recreation, and grazing, would continue to contribute to habitat degradation and loss for all biotic species.

Conclusion: The proposed action is not likely to adversely affect the desert tortoise or bald eagle. Approximately 5.5 acres of low quality habitat would be altered, however, Lake Mead NRA provides thousands of acres of suitable habitat near the project site and throughout the recreation area. No impairment would occur to threatened and endangered species.

Air Quality

Construction activities would generate dust and pollution from the use of heavy equipment. This would occur only during construction activities and would be localized in the construction zone. There would be a slight smell of exhaust, and smoke and dust would be visible during brief periods of time. Mitigation measures would be implemented to alleviate these short-term, adverse, minor impacts caused by construction activities.

The water compacted aggregate base surface of the parking area would help to reduce impacts to air quality but would not eliminate the dust generated from vehicle use and windy conditions. Consequently, dust and dirt particles would be blown into the adjacent NPS employee housing area, marina, and high-use visitor areas. Alternative C could create long-term, minor to moderate, adverse impacts on air quality due to the continual use of a gravel parking lot.

Cumulative Effects: The opportunity to reduce impacts to air quality by paving the gravel parking area would be lost because no paving would occur under this alternative.

Conclusion: Under this alternative, long-term, minor to moderate, adverse impacts on air quality would occur from vehicles driving and parking on a gravel surface. NPS employees, concession workers, and visitors in the Echo Bay area would be exposed to airborne dust and dirt particles, which could degrade air quality and reduce visibility. There would be no impairment to air quality as a result of the impacts associated with this alternative.

Water Resources

Best Management Practices (BMPs) for controlling nonpoint pollution during construction activities would be implemented and would help control sedimentation and erosion during small storm events. Depending on the extent to which storm events occurred during construction activities, short-term, adverse impacts on water quality from increased erosion and sedimentation could occur. Turbidity would range from negligible to minor.

Gravel surfaces are subject to wash outs during heavy rain event which can lead to an increase of sedimentation in drainages. Road design and maintenance would be developed to best mitigate for long-term impacts to water quality. A ditch would be

trenched around the parking lot to help direct and funnel water away from the parking area into appropriate areas. Long-term minor, adverse impacts on water resources would result from this alternative.

Cumulative Effects: Visitor use and facilities in the recreation area contribute sediments and pollutants into Lake Mead. Continuing and upcoming projects including the implementation of the *Lake Management Plan*, boat ramp improvements, *Low Water Amendment* to the *GMP*, and the *Systems Conveyance and Operations Program*, are likely to have both beneficial and adverse impacts on water resources. This project would not appreciably add to the long-term, cumulative effects

Conclusion: Alternative C would result in minor long-term, adverse impacts on water resources. BMPs and mitigation would be implemented to minimize impacts on water resources. Impairment to water resources would not occur from implementing Alternative C.

Soundscapes

Soundscapes would be impacted for reasons described in Alternative B.

Cumulative Effects: The cumulative effects would be the same as described in Alternative B.

Conclusion: Construction activities associated with Alternative C would create localized, temporary, minor, adverse impacts on soundscapes. No long-term impact on soundscapes would occur from implementation of this alternative.

Cultural Resources

There would be no impact on cultural resources under Alternative C.

Cumulative Effects: There would be no cumulative effects to cultural resources under Alternative C.

Conclusion: There would be no impacts or impairment to cultural resources under Alternative C.

Visual Resources

Under this alternative, approximately 5.5 acres of undisturbed habitat would be altered from constructing a gravel parking lot. A parking lot would be established in an area where none currently exists. Establishing a designated parking area providing sufficient space for vehicles and trailers would eliminate the need for visitors to park their vehicles in inappropriate places and would reduce degradation to soils and vegetation along the Echo Bay access road, resulting in some beneficial effects.

Although this alternative would alter the landscape in the project area, the site is located within the Echo Bay development zone adjacent to paved roads, launch ramps, housing, campgrounds and other marina and visitor support facilities. Establishing a parking area

at this location would not detract substantially from the visual resources. Alternative C would result in long-term, negligible to minor, adverse impacts on visual resources with some beneficial effects.

Cumulative Effects: The addition of this parking area was identified in the 1986 *GMP*. The Echo Bay developed area has been zoned for various projects which would enhance visitor experience and provide the necessary amenities and facilities to accommodate visitors, while protecting the natural and cultural resources in the surrounding area. No cumulative effects to visual resources would occur from implementing this alternative.

Conclusion: Alternative C would result in long-term, negligible to minor, adverse impacts on visual resources at Echo Bay. Beneficial effects to visual resources could result from eliminating the need for vehicles to park on undisturbed soils and vegetation.

Safety and Visitor Use and Experience

Alternative C would result in moderate, beneficial, long-term effects to visitor safety and experience. Since a parking lot would be established, visitors would not be required to park over a mile away and walk up a steep incline to retrieve their vehicle and trailer. This would reduce the potential for health risks associated with climbing a steep incline in temperatures sometimes exceeding 100 degrees. A designated parking area providing a sufficient amount of pull-through parking spaces would direct vehicle and trailer traffic to one consolidated area and would free up much needed space near the restaurant and motel complex. This would drastically improve the experience of visitors wishing to recreate on the lake and for those enjoying land-based facilities.

Maintenance of the gravel parking area may not be accomplished when needed due to the limited number of staff on the road crew and other priorities. Consequently, the gravel parking area may not be graded, striped, and maintained on a consistent basis. This could create unsatisfying conditions for visitors trying to maneuver around an unmarked parking area. The effects of extreme amounts of dust being generated from use of a gravel parking area may add to visitor frustration. These factors could create minor, adverse impacts on the visitor's experience.

Cumulative Effects: The addition of this parking area was identified in the 1986 *GMP*. The Echo Bay developed area has been zoned for various projects which would enhance visitor experience and provide the necessary amenities and facilities to accommodate visitors, while protecting the natural and cultural resources in the surrounding area. This project would provide adequate parking that would support visitation and the carrying capacity established for the Echo Bay developed area at any lake elevation.

Conclusion: Alternative C would result in long-term, moderate, beneficial effects on safety from establishing a parking area near the launch facilities, and eliminating the potential for health issues to arise from visitors climbing a one-mile, steep incline to retrieve their vehicle and trailer. Minor, adverse impacts on visitor experience could result if the parking lot cannot be maintained when needed, and from large quantities of dust being generated from vehicle use and windy conditions.

Park Operations

This alternative would result in both beneficial and adverse impacts to park operations. Under this alternative, a parking lot would be established and would reduce the need for law enforcement from having to monitor visitors parking in illegal areas. NPS staff time would not be spent on responding to potential medical conditions associated with visitors retrieving their vehicles and trailers in unfavorable conditions, or from mediating visitor conflicts resulting from lack of parking. Beneficial effects to emergency and law enforcement staff time would result from implementation of this alternative.

The three maintenance employees stationed at Echo Bay currently perform routine maintenance duties, including general repairs, landscaping, maintaining campgrounds, restrooms, and other NPS facilities within the developed area and at other locations in the district. Maintaining a gravel parking lot would require a substantial amount of staff time from the road crew. The three-person road crew is based out of Lake Mead NRA headquarters in Boulder City, NV, and is responsible for grading and maintaining 800 miles of backcountry roads within Lake Mead NRA. Maintaining the gravel parking area at Echo Bay would not be a priority of the road crew and consequently may not be accomplished when needed. Negative impacts to visitors could occur if ruts in the gravel lot are present, individual parking spaces are not be identified through striping, and large amounts of dust are generated. If the road crew is expected to maintain the parking lot on an as needed basis, their other duties may not be accomplished; therefore, impacts on the road crew would be long-term, minor to moderate, and adverse.

Cumulative Effects: If current trends in the hiring process continue at Lake Mead NRA, less staff would be available to maintain roads and facilities. The additional work related to maintaining a gravel parking lot could have cumulative effects if there is not an adequate number of staff available to perform these operations.

Conclusion: Long-term beneficial effects to law enforcement and emergency personnel staff time would occur from Alternative C because less staff time would be required to monitor parking, mediate visitor conflicts, and respond to potential health issues. Long-term, minor to moderate, adverse impacts on the road crew would occur from activities associated with maintaining the gravel parking area, including, controlling dust, grading, and striping the lot.

SECTION V: COORDINATION AND CONSULTATION

A 30-day public scoping period occurred from October 8, 2004 through November 12, 2004, through a press release (Appendix A). The scoping press release was sent to television stations, newspapers, magazines, and radio stations in Las Vegas, Henderson, Boulder City, Pahrump, Overton, Logandale, Nevada; Laughlin, Meadview, Kingman, Phoenix, and Bullhead City, Arizona; and Needles, and Los Angeles, CA. Government entities receiving notification of the project included the Bureau of Land Management, Bureau of Reclamation, the Southern Nevada Water Authority, the Nevada Division of Wildlife, Arizona Game and Fish Department, the Nevada Department of Transportation, and local government offices in our gateway communities. Other stakeholders, including other NPS units, concessioners, and the congressional delegation of Arizona and Nevada also received notification of this project. No comments were received during the 30-day scoping period.

A press release regarding the availability of this environmental assessment is sent to the above entities for announcement of the proposed project, and is published on the Lake Mead NRA Internet Web site (<http://www.nps.gov/lame>). Individuals and organizations can request the environmental assessment in writing, by phone, or by e-mail.

Lake Mead NRA's mailing list is comprised of 126 federal and state agencies, individuals, businesses, and organizations. The environmental assessment will be distributed to 78 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 will receive a letter notifying them of its availability and methods of accessing the document. 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, 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 document will be accepted during the 30-day review period.

A copy of the environmental assessment can be obtained by direct request to:

Resource Management Division, Compliance Branch
National Park Service
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, Nevada 89005

Telephone: (702) 293-8956
Facsimile: (702) 293-8008

SECTION VI: LIST OF PREPARERS AND CONTRIBUTORS

Chanteil Walter, Environmental Compliance Assistant
Michael Boyles, Environmental Compliance Specialist
Steve Daron, Archaeologist
Jim Holland, Management Assistant/ Park Planner
Dale Melville, Park Engineer
Bob Patterson, North District Facility Manager (former)
Bruce Nyhuis, Assistant Chief of Maintenance

SECTION VII: REFERENCES

U.S. Public Laws, Codes, Federal Regulations, Statutes, and Acts

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.

Archeological Resources Protection Act of 1979. U.S. Code. Vol. 16, secs. 470aa-470mm, U.S. Public Law 96-95.

Clean Air Act of 1990 (as amended). U.S. Code. Vol.42, secs. 7401-671, U.S. Public Law 88-206.

Clean Water Act of 1987. (See Federal Water Pollution Control Act of 1972.) Secs 303, 313, 402.

Curation of Federally-Owned and Administered Archeological Collections. Code of Federal Regulations, Title 36, Section 79.

Enabling Legislation. See U.S. Public Law 88-639.

Endangered Species Act of 1973. U.S. Code. Vol.16, sec. 1531 et seq., U.S. Public Law 93-205.

Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994). Executive Order 12898.

Federal Water Pollution Control Act of 1972 (Clean Water Act) (as amended). U.S. Code Vol. 33, secs. 1251-387, U.S. Public Law 92-500, 95-217.

National Environmental Policy Act of 1969 (NEPA). U.S. Code. Vol. 42, secs. 4321-70a, U.S. Public Law 91-190.

National Historic Preservation Act of 1966. U.S. Code. Vol. 16, secs. 5901-6011, U.S. Public Law 89-665, 96-515 (as amended, 1992).

National Parks and Recreation Act of 1978 (The Redwoods Act). U.S. Code. Vol. 16, sec 1a-1, U.S. Public Law 95-625.

National Park Service Concessions Management Improvement Act of 1998. U.S. Code Vol. 16, sec. 5951-5966, U.S. Public Law 105-391.

National Park Service General Authorities Act of 1970. U.S. Code Vol. 16, sec. 1a-1 et seq., U.S. Public Law 91-383.

National Park Service Organic Act of 1916. U.S. Code. Vol. 16, sec. 1.

Native American Graves Protection and Repatriation Act of 1990. U.S. Code. Vol. 25, secs. 3001-13, U.S. Public Law 101-601.

Redwood National Park Expansion Act of 1978. U.S. Public Law 102-575, Title 28.

Safe Drinking Water Act of 1996. U.S. Code. Vol. 42, 300f-j-26.

U.S. Public Law 88-639. "Enabling Legislation," Lake Mead National Recreation Area. 88th Cong., 653d sess., 8 October 1964.

References Cited

Bonstead, Leah

2005 LAME CRP #05-011 report in prep. Lake Mead NRA, Cultural Resource Office, Boulder City, Nevada.

Council on Environmental Quality, Executive Office of the President

1978 "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act." *Federal Register* 43:55978-56007.

Ervin, Richard G.

1986 Lake Mead Developed Area Surveys. Publications in Anthropology No. 41, Western Archeological and Conservation Center, National Park Service, Tucson, Arizona.

Las Vegas, City of

2004 Information Extracted from "History." Available on the Internet at <http://www.ci.las-vegas.nv.us/history/default.htm>.

2006 Information Extracted from "Demographics." Available on the Internet at <http://www.lasvegasnevada.gov/FactsStatistics/demographics.htm>.

Lewis, Ralph H.

1976 "Manual for Museums." Washington, DC. U.S. Government Printing Office. Nevada.

National Park Service (NPS), U.S. Department of the Interior

1986 *Final Environmental Impact Statement, Lake Mead National Recreation Area General Management Plan*. Boulder City, Nevada.

1991 *NPS-77: National Resources Management Guidelines*. Washington, DC.

- 1996 “Best Management Practices, Watercraft and Marina Operations, Dry Boat Storage, and Boat Repair Services.” Lake Mead National Recreation Area, Utility Systems Branch, Division of Maintenance and Engineering, October 31.
- 1998 *Director’s Order 28: Cultural Resource Management*. Washington, DC. National Park Service.
- 2000a “Lake Mead National Recreation Area Resource Management Plan.” Boulder City, Nevada.
- 2000b *Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making*. Washington, DC. National Park Service.
- 2000c “Lake Mead National Recreation Area Strategic Plan, 2000-2005.” Boulder City, Nevada.
- 2000d “Museum Handbook,” Park I Museum Collections (Revised 2001). Washington, DC. National Park Service.
- 2001a *Director’s Order 6: Interpretation*. Washington DC. National Park Service.
- 2001b “Management Policies.” Washington, D.C. National Park Service.
- 2003 *Lake Mead National Recreation Area Lake Management Plan and Final Environmental Impact Statement*. Boulder City, Nevada.
- 2004a Information Extracted from “National Park Service, Lake Mead National Recreation Area, Park Facts. Available on the Internet at <http://www.nps.gov/lame/pphtml/facts.html>.
- 2004b Information Extracted from “Air Quality Glossary.” Available on the Internet at <http://www2.nature.nps.gov/air/aqbasics/glossary.htm>.

State of Nevada

- 2000 Nevada Administrative Code, Chapter 445A.118-445A.225, Standards of Water Quality, Codification as of September.

U.S. Bureau of Reclamation (BOR), U.S. Department of the Interior

- 2000 *Colorado River Interim Surplus Criteria Final Environmental Impact Statement*. Lower Colorado Regional Office, Boulder City, Nevada.

U.S. Environmental Protection Agency (EPA)

1995 “Controlling Nonpoint Source Runoff Pollution from Roads, Highways, and Bridges”. Available on the Internet at <http://www.epa.gov/OWOW/NPS/roads.html>

2002 Information Extracted from “National Recommended Water Quality Criteria.” Available on the Internet at <http://www.epa.gov/waterscience/pc/revcom.pdf>.

2004 Information Extracted from “The Green Book: Currently Designated Nonattainment Areas for All Criteria Pollutants Listed by State, County, then Pollutant, as of August 3, 2004.” Available on the Internet at <http://www.epa.gov/oar/oaqps/greenbk/ancl.html#NEVADA>.

U.S. Fish and Wildlife Service (USFWS)

2004 Information Extracted from the “Listing of Threatened and Endangered Species State of Nevada.” Available on the Internet at http://ecos.fws.gov/tess_public/TESSWebpageRegionLists?lead_region=1#NV

APPENDIX A

For Immediate Release: October 8, 2004
Roxanne Dey - 702.293.8947

Release #: 74-04

**Environmental Assessment Being Prepared for
Construction of a Parking Lot at Echo Bay**

Officials at Lake Mead National Recreation Area are soliciting public comments on the proposed construction of a parking lot with amenities within Lake Mead National Recreation Area.

The National Park Service is proposing to construct a 600-vehicle parking lot with amenities at Echo Bay within Lake Mead National Recreation Area. These improvements are needed because of the increase in visitors to this area and the demand for more parking. The existing parking areas can only accommodate 109 vehicles with trailers. During high-use periods, visitors are asked to park their vehicles, with trailers, approximately one mile or farther from the launch ramp. This distance, coupled with the fact that visitors must climb a steep hill to get back to their vehicles, sometimes in temperatures exceeding 100 degrees, could result in health and safety issues for visitors.

Work associated with constructing the 600-vehicle parking lot would include grading, paving, installing curbs and gutters, providing for drainage and slope protection, and installing restroom utilities, an information kiosk, lighting, and signage. In order to accommodate vehicles and their trailers, all of the parking sites would be pull-through sites, 50' long and 12' wide.

The National Park Service is in the process of preparing an environmental assessment to identify and evaluate feasible alternatives, including no action, for this proposal. As a result, Lake Mead National Recreation Area is seeking public feedback on the issues and potential alternatives. Written comments are due by November 12, 2004 to:
Superintendent, Lake Mead National Recreation Area, Attention: Compliance Office, 601 Nevada Way, Boulder City, Nevada 89005.

-end-

APPENDIX B

Listing of Threatened and Endangered Species – State of Nevada

http://ecos.fws.gov/tess_public/TESSWebpageRegionLists?lead_region=1#NV

Accessed on October 5, 2004

Nevada -- 38 listings

Animals -- 30

| <u>Status</u> | <u>Listing</u> |
|---------------|---|
| E | Chub, bonytail (_Gila elegans) |
| E | Chub, Pahrnagat roundtail (_Gila robusta jordani) |
| E | Chub, Virgin River (_Gila seminuda (=robusta)) |
| E | Cui-ui (_Chasmistes cujus) |
| E | Dace, Ash Meadows speckled (_Rhinichthys osculus nevadensis) |
| E | Dace, Clover Valley speckled (_Rhinichthys osculus oligoporus) |
| T | Dace, desert (_Eremichthys acros) |
| E | Dace, Independence Valley speckled (_Rhinichthys osculus lethoporus) |
| E | Dace, Moapa (_Moapa coriacea) |
| T | Eagle, bald (lower 48 States) (_Haliaeetus leucocephalus) |
| E | Flycatcher, southwestern willow (_Empidonax traillii extimus) |
| E | Frog, mountain yellow-legged (southern California DPS) (_Rana muscosa) |
| T | Naucorid, Ash Meadows (_Ambrysus amargosus) |
| E | Poolfish, Pahrump (_Empetrichthys latos) |
| E | Pupfish, Ash Meadows Amargosa (_Cyprinodon nevadensis mionectes) |
| E | Pupfish, Devils Hole (_Cyprinodon diabolis) |
| E | Pupfish, Warm Springs (_Cyprinodon nevadensis pectoralis) |
| E | Skipper, Carson wandering (_Pseudocopaeodes eunus obscurus) |
| T | Spinedace, Big Spring (_Lepidomeda mollispinis pratensis) |
| E | Spinedace, White River (_Lepidomeda albivallis) |
| E | Springfish, Hiko White River (_Crenichthys baileyi grandis) |
| T | Springfish, Railroad Valley (_Crenichthys nevadae) |
| E | Springfish, White River (_Crenichthys baileyi baileyi) |
| E | Sucker, razorback (_Xyrauchen texanus) |
| T(S/A) | Tortoise, desert (outside/taken from Sonoran Desert) (_Gopherus agassizii) |
| T | Tortoise, desert (U.S.A., except in Sonoran Desert) (_Gopherus agassizii) |
| T | Trout, bull (U.S.A., conterminous, lower 48 states) (_Salvelinus confluentus) |
| T | Trout, Lahontan cutthroat (_Oncorhynchus clarki henshawi) |
| T | Wolf, gray Western Distinct Population Segment (_Canis lupus) |
| E | Woundfin (except Gila R. drainage, AZ, NM) (_Plagopterus argentissimus) |

Plants -- 8

| <u>Status</u> | <u>Listing</u> |
|---------------|--|
| T | Milk-vetch, Ash meadows (_Astragalus phoenix) |
| T | Centaury, spring-loving (_Centaureum namophilum) |
| T | Sunray, Ash Meadows (_Enceliopsis nudicaulis var. corrugata) |
| E | Buckwheat, steamboat (_Eriogonum ovalifolium var. williamsiae) |
| T | Gumplant, Ash Meadows (_Grindelia fraxino-pratensis) |
| T | Ivesia, Ash Meadows (_Ivesia kingii var. eremica) |
| T | Blazingstar, Ash Meadows (_Mentzelia leucophylla) |
| E | Niterwort, Amargosa (_Nitrophila mohavensis) |