

# **LAKE MEAD NATIONAL RECREATION AREA**

## **Relocation of Lake Mead Cruises Facility**

### **ENVIRONMENTAL ASSESSMENT**

**National Park Service**

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

**February 2003**

**US Department of the Interior, National Park Service**

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## **SECTION I: PURPOSE OF AND NEED FOR ACTION**

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### **Introduction**

The National Park Service is considering alternatives for the temporary relocation of Lake Mead Ferry Service, Inc (Lake Mead Cruises) at 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: Relocate to Horsepower Cove; and Alternative C: Relocate to SCUBA park. The alternative site locations were developed based on availability of utilities, access to the site, amount of available space on the land and on the water, level of land-based construction that would be necessary to accommodate the facility, water levels and underwater gradients. This document also includes discussions of alternatives that have been ruled out and justifications for their elimination.

### **Purpose and Need**

Tour vessel operations and recreational services are currently being threatened by the rapid decrease in the water elevation of Lake Mead. The dropping water elevations have greatly diminished the size and depth of the harbor in which Lake Mead Cruises operates its tour vessel services. Based on current lake level predictions from the Bureau of Reclamation (Reclamation), it is estimated that, in order to continue tour vessel operations, the landing must vacate its current position in Boulder Harbor by April 2003.

### **Background**

Lake Mead Cruises operates a daily tour vessel service from its landing in Boulder Harbor to Hoover Dam. Its main vessel, the *Desert Princess*, is a 125-foot, 300-passenger paddlewheel style vessel, requiring a minimum depth of 12-feet to operate. Due to the rough underwater terrain in the harbor, at a water elevation of 1146 feet above mean sea level (msl), there will not be sufficient depth in which to safely navigate the tour vessel through the harbor. Current Reclamation lake level predictions estimate that Lake Mead will reach an elevation of 1146 feet msl during April 2003. Lake Mead Cruises also operates three additional tour vessels: the *Desert Princess Too*, a 180-passenger vessel, modeled as a smaller version of the *Desert Princess*, requiring a minimum depth of 4-feet in which to operate; the *Velocity*, a 50-passenger catamaran vessel, also requiring a minimum depth of 12-feet in which to operate; and, the *Outrageous*, a 35-passenger jetboat, requiring a minimum depth of 4-feet in which to operate.

### **PROJECT AREA LOCATION**

Lake Mead NRA is located in southeastern Nevada and northwestern Arizona (Figures 1 and 2). Lake Mead Cruises is located at approximately mile 4.5 on Lakeshore Scenic Drive, ½ mile northwest of Lake Mead Marina (Figure 3). The overall project area is located in the Boulder Basin development zone as designated in the Lake Mead NRA *General Management Plan*, 1986 (Figure 4).

Figure 1. Lake Mead National Recreation Area Region



Figure 2. Area Map

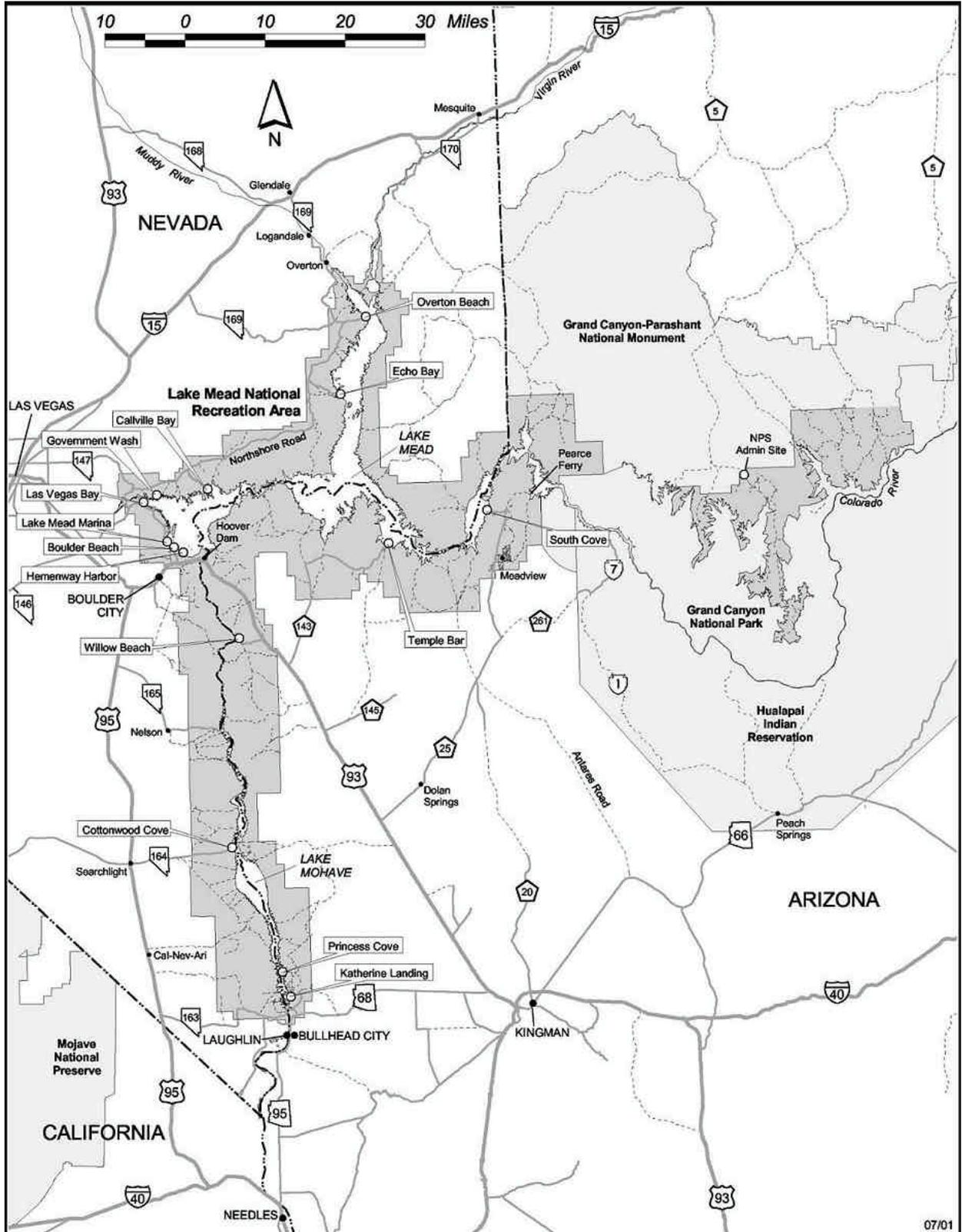
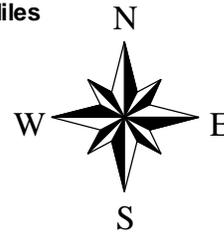
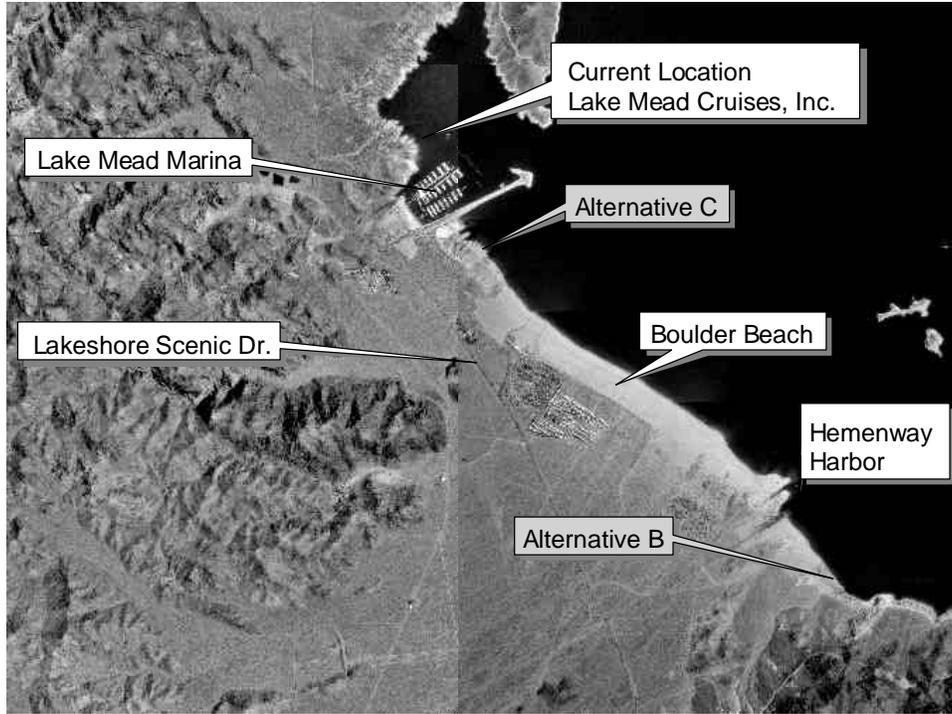


Figure 3  
Project Area

# Project Location



**Figure 4**  
**Photo of Lake Mead Cruises Facility**



## **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 on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1508.9), and National Park Service (NPS) *Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision Making*.

## **RELATED LAWS, POLICIES, AND PLANNING DOCUMENTS**

The NPS Organic Act of 1916 directs the NPS to manage units “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations.” Congress reiterated this mandate in the Redwood National Park Act of 1978 by stating that the NPS must conduct its action in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.”

The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts. An action constitutes an impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values.” (*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).

Lake Mead NRA was established in 1964 (PL 88-639), “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.”

NPS units vary based on their enabling legislation, natural and cultural resources, missions, and the recreational opportunities appropriate for each unit, or for areas within each unit. An action appropriate at Lake Mead NRA, as designated by the enabling legislation, may impair resources in another unit. This environmental assessment analyzes the context, duration, and intensity of impacts related to the alternatives associated with moving the Lake Mead Cruises landing, 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 *General Management Plan* provided the overall management direction for Lake Mead NRA. It established management zones to accommodate increasing visitor use while protecting park resources. However, many of the current issues were not anticipated and therefore not addressed in the *General Management Plan*.

The Lake Mead NRA *Lake Management Plan and final Environmental Impact Statement* amended the information in the *General Management Plan* that related to visitor use and resource protection of Lakes Mead and Mohave. This plan addressed issues and alternatives related to existing facilities and potential facility expansion, carrying capacity, visitor use and recreational settings, personal water craft use, and resource protection. It did not address the issues resulting from the extreme low water that Lake Mead is currently experiencing, and the predicted low water elevations.

In December 2000, the Secretary of the Interior, acting through Reclamation, adopted interim criteria under which surplus water conditions may be declared in the lower Colorado River Basin during a 15-year period that would extend through 2015. Within the *Environmental Impact Statement for Surplus Water Criteria*, potential issues involving low water and the impacts to marina operations were analyzed. However, this document did not foresee the current and predicted drought conditions, and did not fully analyze the effects of the drought on existing NPS and concessioner facilities.

The 1998 Lake Mead NRA Strategic Plan established goals relating to resource protection, public enjoyment, and visitor satisfaction. The 2001 Strategic Plan has reaffirmed these goals.

The NPS Concessions Management Improvement Act of 1998 (PL 105-391) established the legislation under which the NPS is to manage concession operations within units of the National Park System. This act requires the NPS to provide a reasonable opportunity for profit to authorized concession operations. This act also provides for protection of concessioner investment and states that "A concessioner shall have a leasehold surrender interest in each capital improvement constructed by a concessioner under a concessions contract, consisting solely of a right to compensation for the capital improvement." Leasehold surrender interest "shall not be extinguished by the expiration or other termination of a concessions contract and may not be taken for public use except on payment of just compensation."

The concessions contract between the NPS and Lake Mead Ferry Service, Inc., also recognizes that the establishment and maintenance of concessioner facilities and services “involves a substantial investment of capital and the assumption of the risk of operating loss, it is therefore proper, in consideration of the obligations assumed hereunder and as an inducement to capital, that the concessioner be given assurance of security of such investment and of a reasonable opportunity to make a fair profit.” In addition, the concessions contract specifically requires that the NPS “exercise [its] authority hereunder in a manner consistent with a reasonable opportunity by the Concessioner to realize a profit on the operations conducted hereunder as a whole commensurate with the capital invested and the obligations assumed.”

This environmental assessment analyzes the issues and alternatives related to the emergency situation at Lake Mead Cruises. An amendment to the *General Management Plan* will be required to look at the long-term management of the facilities on Lake Mead due to the predicted future low water levels. This amendment will be prepared in the next year to determine which marina operations will be affected by low water and what options are available for those facilities.

## **ISSUES AND IMPACT TOPICS**

Issues are related to potential environmental effects of project alternatives and were identified by the project interdisciplinary team. Public scoping occurred between January 9 and February 8, 2003, to solicit public comments related to issues and the formulation of alternatives (Appendix A). One comment letter was received during that period in support of the proposed relocation. 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 Analysis**

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

All of the proposed locations for the Lake Mead Cruises facilities are in previously disturbed areas within the Boulder Basin development zone, as designated within the Lake Mead NRA General Management Plan (1986). The Lake Mead Cruises relocation would not change the lake capacities designated by the preferred alternative of the Lake Mead NRA Lake Management Plan and draft EIS (2002). It would change or modify locations of the proposed shoreline zoning in the Boulder Basin area.

The primary issues associated with moving the marina include:

- Water Resources and water quality at new facility location. If the facility is relocated, there could be impacts to the water resources at the new location.
- Floodplains. Lake Mead Cruises and the associated land-based activities would be located adjacent to Lake Mead under the high water elevation of the reservoir.

- Air quality. Dust from the use of dirt roads and parking areas could impact the air quality.
- Recreation resources. Certain recreational users could be displaced by the relocation of Lake Mead Cruises.
- Visitor experience and public safety. Visitors to Lake Mead Cruises would need to travel to a new location to access the facilities. The relocation of Lake Mead Cruises could impact the operations of the Las Vegas Boat Harbor.
- Cumulative effects of low water on Lake Mead developed areas. Predicted lake elevations could create future risks and problems for other marina operations on Lake Mead.
- Socioeconomic Resources. Removing the Lake Mead Cruises facility from its present location and relocating it to another location in Boulder Basin would cost the concessioner, and could reduce its profit margin.
- Park Operations. Maintenance and upgrades of the existing roads, parking areas, facilities, and utilities is on-going due to the relocation of the Las Vegas Boat Harbor. This type of activity could continue in the future, which could take funding, personnel, and equipment away from other park operations.
- Potential for cultural resources in or near project area. Several historic and prehistoric cultural resources have been recorded in the Boulder Beach area. Underwater cultural resources related to the construction of Hoover Dam are present in Boulder Basin, and should be considered when selecting a location for the Lake Mead Cruises facility.

### **Impact Topics Considered but Dismissed from Further Consideration**

- Soils and Vegetation. No impacts to previously undisturbed soils and vegetation would occur because the facility would be located entirely within the existing parking lot, which is a previously disturbed area. Therefore, this impact topic will not be further evaluated.
- Wildlife. As the land-based portion of this facility would be relocated to an existing parking lot, in an area of low-quality wildlife habitat, no impacts to wildlife would occur. Therefore, this impact topic will not be further evaluated.
- Species of Concern, including Threatened and Endangered Species. The land-based portion of the proposed facility would be relocated on an existing parking lot. After consulting the most recent listing of threatened and endangered species (Appendix B), NPS biologists determined that no sensitive or listed species, or habitat, occurs on the land-based portion of the facility. The Lake Mead Cruises docks would be located in an area designated as critical habitat for the razorback sucker (*Xyrauchen texanus*). However, the specific relocation area is not within or near known occupied habitat or spawning areas. No rare plants occur at the project site.
- Visual Resources. Lake Mead Cruises would be located within the developed area where facilities are currently operating and where visitors expect to see facilities.
- Upgrading and extending utilities. Because utilities would be extended from the temporary location of the Las Vegas Boat Harbor, and any associated disturbance would occur in the parking lot area, impacts would be negligible and this will not be further evaluated.

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

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

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. There are no sensitive noise receptors in the project area, other than Lake Mead NRA. The dominant noise source in the project area is automobile and truck traffic on Lakeshore and Hemenway Harbor Road, air traffic noise from air tours, boat noise from boats launching at Hemenway launch ramp, and boat traffic on the Boulder Basin. Since the proposed relocation sites are located in a developed area, where noise occurs regularly and is expected, and the site is zoned appropriate for mechanical noise, soundscape will not be further evaluated.

Regarding energy requirements and conservation potential, construction activities 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.

**Table 1. Comparison of Alternatives**

| <b>Alternative A</b>   | <b>Alternative B</b>  | <b>Alternative C</b>  |
|--|---|---|
| No Action  | Relocation of Facility to Horsepower Cove   | Relocation of Facility to SCUBA Park  |
| <p>No relocation of facility. Facility would continue to follow water levels as much as possible.</p> <p>High potential that tour vessel services would be suspended due to low lake elevations.</p> | <p>Short-term relocation to address immediate need of moving facility to a location where there is sufficient water depth in which to operate.</p> <p>Full tour vessel services would be provided.</p> <p>Interim relocation including the installation of utilities.</p> | <p>Short-term relocation to address immediate need of moving facility to a location where there is sufficient water depth in which to operate.</p> <p>Full tour vessel services would be provided.</p> <p>Interim relocation including the installation of utilities.</p> |

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## **SECTION II: DESCRIPTION OF ALTERNATIVES**

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### **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 this alternative, the Lake Mead Cruises landing would not be relocated and would remain in its present location. The concessioner would continue to operate under existing conditions, moving the landing further out into the harbor as the lake level recedes. At a lake elevation of 1146 feet msl, there would not be a sufficient depth of water in which to operate the tour vessel service and services would be suspended until the lake elevation increases. When the lake level increases, the landing could return to its previous location and the tour vessel would have sufficient water depth in which to operate. Under current predictions from Reclamation, the water elevation would not return to a sufficient level in which to operate the tour vessel at any time during the next 2 years. If current drought conditions continue, this period would be extended indefinitely.

Under this alternative, the concession facility would close down completely, effectively terminating a visitor service that, for 15 years, has been providing visitors from all walks of life a chance to experience the lake from a scenic and historic perspective. The service would not relocate to another area within the Boulder Basin. The concessioner is currently operating under a contract with the NPS which expires on September 30, 2003. The effective date of the closure would be September 30, 2003, the expiration date of the contract.

The concessions contract with Lake Mead Cruises specifically requires that the NPS provide the concessioner “assurance of security of [its] investment.” The contract also states that the concessioner shall receive “full and just compensation . . . for all losses and claims” resulting from contract termination where operations are to be discontinued. In addition, the NPS Concessions Management Improvement Act of 1998 (Title IV, Public Law 105-391) provides for the protection of concessioner investments and requires that a concessioner shall be entitled to receive compensation for its improvements according to its contract. The contract defines these improvements as buildings, structures, fixtures, equipment, and other improvements, affixed to or resting upon the lands assigned in the contract. Such improvements include those that were in existence upon the execution date of the contract, as well as those constructed upon or affixed to the lands assigned at any time after the execution date of the contract.

Therefore, under this alternative, upon closure of the facility, the NPS would buyout the concessioner’s interest in all investments and improvements constructed and utilized for the purpose of this concession contract. This would require payment by the NPS of the

fair value of all investments, without regard to the term of the contract. Fair value would be determined upon the basis of reconstruction cost less depreciation evidenced by its condition and prospective serviceability in comparison with a new unit of like kind, but not to exceed fair market value. Merchandise and supplies would be valued at replacement cost including transportation. Equipment would be valued at replacement cost less depreciation and obsolescence. In addition, the NPS would pay the concessioner for the cost of restoring the land at the Lake Mead Cruises facility to a natural condition, for the cost of transporting moveable property of the concessioner to a reasonable market for sale, and for the actual cost to the concessioner of removal or demolition of improvements, less the resulting salvage value.

If the concessioner and the NPS would not agree upon the fair value of any item or items, the parties would enter into arbitration, and the fair value of the item or items would be determined by the majority vote of a board of three arbitrators.

Currently, concessioners that operate facilities on Lake Mead are incurring costs associated with the lowering lake levels. Under this alternative, these costs would continue to be incurred by the facility operators at Lake Mead Cruises.

#### **Actions Common to Alternatives B and C**

The following two alternatives, B and C, discuss two different locations in the Boulder Development zone that are being evaluated and considered for the relocation of Lake Mead Cruises. Both locations are being considered on an interim basis. If water elevations return to a sufficient depth in which to safely operate the tour vessel in Boulder Harbor, the facility would be returned to its existing location. A long-term evaluation of the proposed interim relocation for low water periods will be completed at a future date through an amendment to the Lake Mead NRA *General Management Plan* and will not be considered in this EA. Both alternatives would include the relocation of the Lake Mead Cruises landing, and four tour vessels.

For both alternatives, the interim relocation addresses the immediate need of moving the facility to a location with sufficient depth in which to operate its tour vessels. The concessioner would be responsible for providing generators for electricity, until such time as electrical lines are in operation. The existing anchor system, which anchors the landing to shore, would be used under both alternatives. Only minimal, reversible impacts to the resources would be considered and no major commitment of resources would be authorized.

For both alternatives, the interim relocation addresses the installation of some minor utilities. In addition, since the concessioner relies on its telephone and Internet traffic for the majority of its business, a temporary facility in Boulder City, Nevada would be utilized to operate its telephone system until such time as a sufficient on-site telephone system would be in place.

Under both alternatives, the NPS would work with the concessioner to install signage and lighting may be installed in the future. The concessioner and the NPS would consult with

the Nevada Division of Environmental Protection (NDEP) to determine wastewater requirements and provisions. The concessioner and the NPS would work with the Nevada State Health Division for the water line requirements.

Under both alternatives, relocating the landing and putting the tour vessel service back into operation would take approximately 24 hours.

**Alternative B-Relocation to Horsepower Cove, Management-Preferred Alternative**

Under this alternative, the Lake Mead Cruises landing would be relocated to Horsepower Cove, southeast of Las Vegas Boat Harbor. Horsepower Cove is located in the Hemenway Harbor area, southeast of the Hemenway launch ramp (Figure 5). Some natural protection from wind and wave action is provided in this area. However, if necessary, additional breakwater would be constructed in order to protect the landing from heavy wind and wave action and so that passengers may safely board the tour vessels. This alternative would require that all land facilities remain within the existing road corridor and parking area. The existing gravel road, which has recently been improved, would be used for access to the parking area. The existing dirt parking area (300 spaces) would be shared with Las Vegas Boat Harbor (Figure 6, 7 and 8).

The main walkway to the site would be paved in order to ensure that the landing is accessible for all visitors. Paving would consist of an area approximately 10- to 12-feet wide and 25-feet long, and a bus pad approximately 20-feet wide and 60-feet long at the entrance to the accessible walkway.

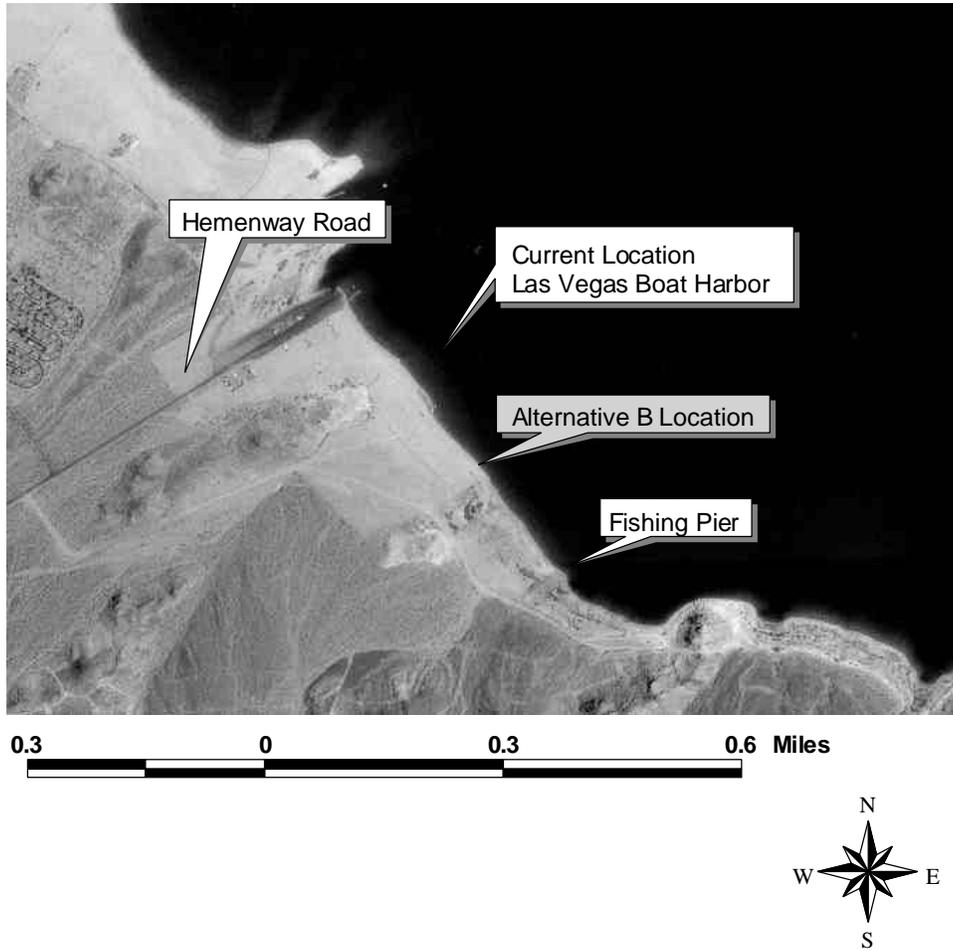
Under this alternative, the concessioner would work with local utility companies and Las Vegas Boat Harbor to run utilities for electricity and telephone lines from existing lines in the area. The concessioner would work with the NPS and Las Vegas Boat Harbor to install above- or below-ground water lines, which could accommodate the restrooms on the landing, as well as pumpout operations for the tour vessels.

**Alternative C-Relocation to SCUBA Park**

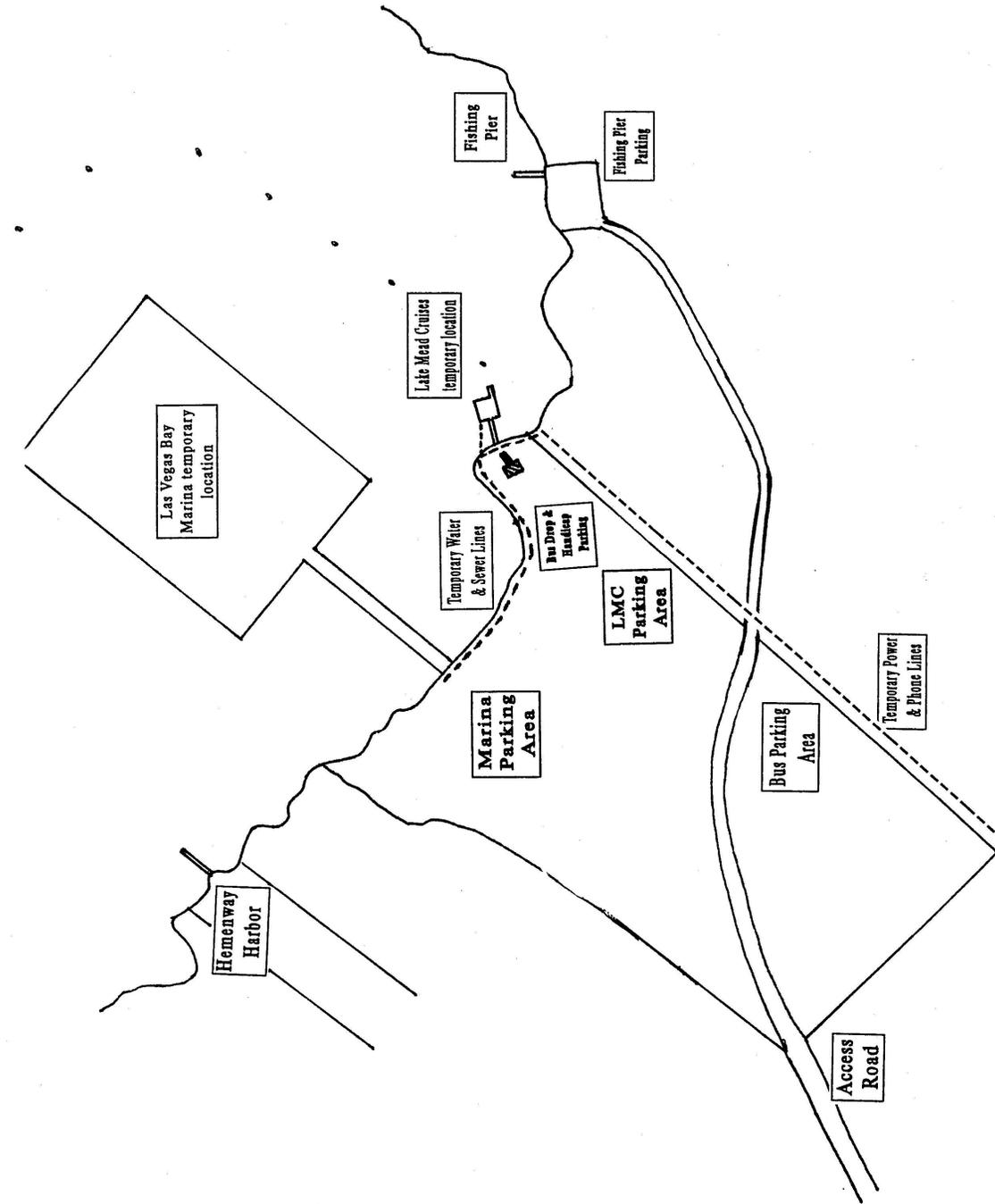
Under this alternative, the Lake Mead Cruises landing would be relocated to SCUBA Park. SCUBA Park is located immediately southeast of Pyramid Island and the causeway accessing government dock (Figures 9 and 10). The existing access road would be upgraded to a width of 28-feet and graded. A dirt parking lot would be graded to provide for 50 single car parking spaces and six bus spaces utilizing the existing disturbed area. Both the access road and the parking lot would be located on previously disturbed land, portions occurring below the high water mark (Figure 11 and 12).

**Figure 5 – Alternative B  
Horsepower Cove Relocation**

# Alternative B Relocate to Horsepower Cove



**Figure 6. Alternative B  
Horsepower Cove Relocation**



**Figure 7 and 8**  
**Photographs of Horsepower Cove**



**Figure 9 – Alternative C  
Relocation to SCUBA Park**

# Alternative C Relocation to SCUBA Park

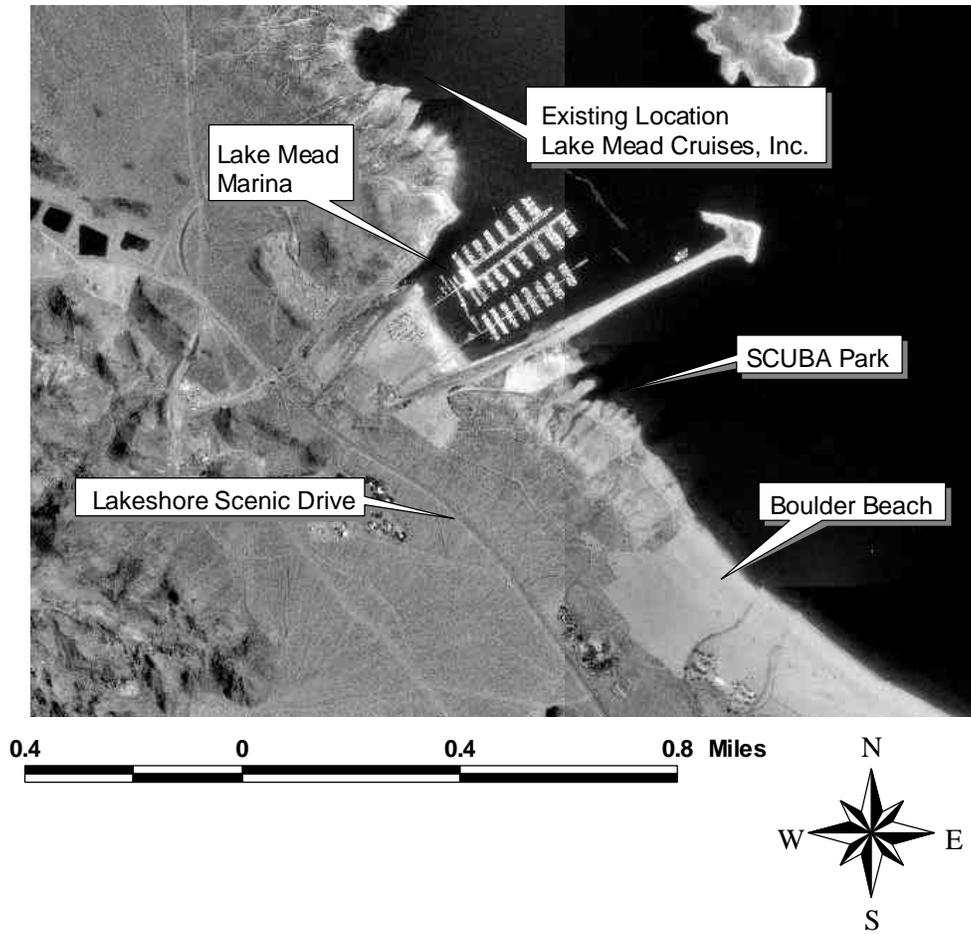
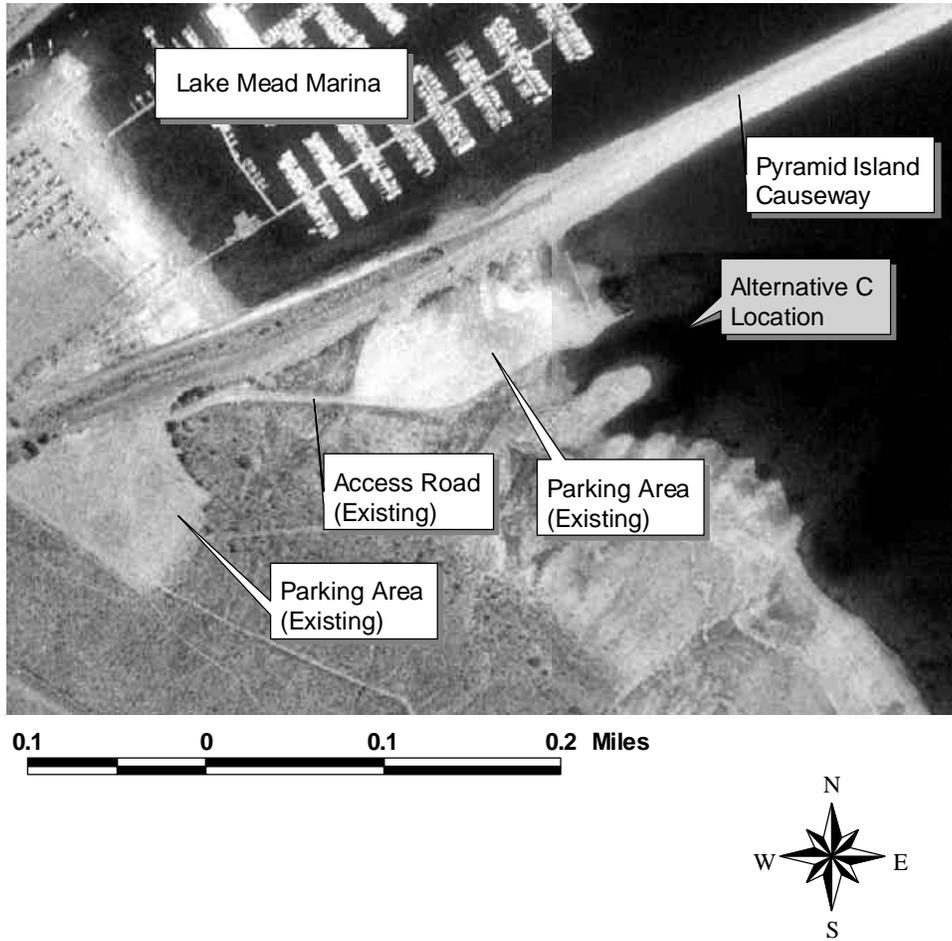


Figure 10 – Alternative C  
Relocation to SCUBA Park

# Alternative C Relocation to SCUBA Park



**Figures 11 and 12**  
**Photos of SCUBA Park**



The landing would be located in an open harbor area with no natural protection from wind and wave action. In order for passengers to safely board the tour vessels, the landing would need additional protection from wind and wave action, requiring the construction of a breakwater.

The main walkway to the site would be paved in order to ensure that the landing is accessible for all visitors. Paving would consist of an area approximately 10- to 12-feet wide and 25-feet long, and a bus pad approximately 20-feet wide and 60-feet long at the entrance to the accessible walkway.

Under this scenario, the NPS and concessioner would work together to provide road access, parking for up to 50 vehicles, with additional parking for 6 buses, and signage. All land facilities would remain within previously disturbed areas. Permanent commitment of resources, removal of vegetation and new ground disturbance would not be authorized. The concessioner would work with local utility companies to upgrade the utilities for electricity and telephone lines from existing lines in the area. The concessioner would work with the NPS to install above- or below-ground water lines, which could accommodate the restrooms on the landing, as well as pumpout operations for the tour vessels.

### **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 relocating the Lake Mead Cruises facilities would be implemented under each alternative, and are assumed in the analysis of effects for each alternative.

#### Water Resources

Best management practices will be incorporated in all marina operations.

#### Air Quality

Dust control measures would include watering the road and parking areas during grading operations, and could include applying a dust palliative to control dust.

#### Cultural Resources

Park Archeologist Steve Daron conducted a reconnaissance survey of the project areas for Alternatives B and C on February 18, 2003. The project areas for both alternatives have been previously disturbed by beach development activities and no cultural resources were located.

The NPS will consult with the appropriate Native American groups as required by the various laws, regulations, and executive orders.

Should unknown cultural resources be uncovered during construction, work would be halted in the discovery area, the site would be secured, and the recreation area would consult according to 36 CFR 800.13 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990. In compliance with the Native American Graves Protection and Repatriation Act of 1990, the NPS would also notify and consult concerned tribal representatives for the proper treatment of human remains, funerary objects, and sacred objects should these be discovered during the course of the project.

#### Visitor Use and Experience

Alternative locations would be selected for displaced recreationists if a relocation site is selected. The public would be notified of the new location by press releases and through local news media.

#### Public Safety

Navigational markers and no-wake areas would be established around the Lake Mead Cruises facility if it is relocated elsewhere in the recreation area. Security, public notification, and a park ranger would assist with the actual move to protect the public.

### **ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION**

#### **Criteria for Selecting Relocation Alternatives**

Alternatives for the relocation of the landing and tour boat operations were selected based on the sites being close to existing utilities, including water, sewer, and electricity; road access; the available land area below high water and the level of site preparation needed for parking; the suitability of the underwater topography and depth needed for tour vessel operations; potential flood risk; and other resource concerns.

Several sites were considered when determining the feasible locations for the move of the landing and tour vessel operations. Moving the landing to a different location within Boulder Harbor was ruled out. As water elevation recedes, the surface area of Boulder Harbor will decrease, crowding Lake Mead Marina and Lake Mead Cruises to a point in which the tour vessel service will be unable to operate. Relocating the landing and tour service to the north side of Hemenway Harbor was considered and eliminated. In this location, additional grading and ground disturbance would be required to provide road access and a parking area; the wind and wave action in this section of the harbor can be rough, greatly hindering passenger safety; there is insufficient depth in which to safely operate the tour vessels; and there are plans to replace the Hemenway Harbor fishing pier in this location.

## **CONSULTATION, COORDINATION AND PERMIT REQUIREMENTS**

A press release was provided to area newspapers on January 9, 2003 to announce the scoping period. One comment was received during the 30-day scoping period. The commentor expressed support of the facility relocation.

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

- U.S. Army Corp of Engineers Section 10 Permit Requirements
- Coordination with Nevada Division of Environmental Protection
- Coordination with Nevada State Health Division
- Informal consultation with the U.S. Fish and Wildlife Service
- Tribal consultation
- 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 considered the most environmentally preferable alternative because overall it would best meet the requirements in Section 101 of NEPA. It is more beneficial than closing the facilities as it would meet the beneficial uses requirement, to allow for the continued balance between population and resource use to permit a wide sharing of life's amenities. It would allow for the preservation of resources, while providing an environment that supports diversity and individual choice. It would assure,

through the continuation of visitor services, for all generations, a safe, healthful, productive, and esthetically and culturally pleasing surrounding.

### Comparison of Impacts

Table 2 summarizes the potential impacts associated with each alternative. Table 2 focuses on comparing the short-term impacts, while Table 3 summarizes the potential long-term impacts of the alternatives. Impact intensity, context, and duration are defined in the Environmental Consequences section.

**TABLE 2. Comparison of Potential Impacts**

| <b>Impact Topics</b>                         | <b>Alternative A</b>   | <b>Alternative B</b>   | <b>Alternative C</b>   |
|--|--|--|--|
| Water Resources                              | Negligible to minor impacts at existing facility until closure | Negligible to minor detectable localized adverse effects                       | Negligible to minor detectable localized adverse effects                       |
| Floodplains                                  | No effect  | No effect  | No effect  |
| Air Quality                                  | Minor detectable and localized adverse impacts                 | Minor to moderate impacts to air quality in the project area                   | Minor to moderate impacts to air quality in the project area                   |
| Cultural Resources                           | No effect  | No effect  | No effect  |
| Recreation Resources                         | Moderate to major adverse effects                              | Minor adverse effects  | Moderate adverse effects   |
| Visitor Use and Experience and Public Safety | Moderate to major adverse effects                              | Some beneficial effects and some minor to moderate adverse effects             | Some beneficial effects and some minor to moderate adverse effects             |
| Socioeconomic Resources                      | Major impacts to the operators of Lake Mead Cruises            | Short-term negative impacts due to costs of move; Long-term beneficial effects | Short-term negative impacts due to costs of move; Long-term beneficial effects |
| Recreation Area Operations                   | No effect  | Negligible adverse impact  | Minor to moderate adverse impacts  |

**Table 3. Potential Long-term Impacts**

| <b>Impact Topics</b>                         | <b>Alternative A</b>        | <b>Alternative B</b>  | <b>Alternative C</b>  |
|--|-----------------------------|---|---|
| Water Resources                              | No effect                   | Some detectable localized adverse effects                         | Some detectable localized adverse effects                         |
| Floodplains                                  | No long-term effect         | No long-term effect   | No long-term effect   |
| Air Quality                                  | No long-term effect         | No long-term effect   | No long-term effect   |
| Cultural Resources                           | No effect                   | No effect   | No effect   |
| Recreation Resources                         | Major adverse effect        | Minor adverse effects   | Minor to moderate adverse effects                                 |
| Visitor Use and Experience and Public Safety | Major adverse effect        | Minor to moderate adverse effects; potentially beneficial effects | Minor to moderate adverse effects; potentially beneficial effects |
| Socioeconomic Resources                      | Major adverse effect        | Some beneficial effects   | Some beneficial effects   |
| Recreation Area Operations                   | No long-term adverse effect | Some long-term adverse effects                                    | Some long-term adverse effects                                    |

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## **SECTION III: AFFECTED ENVIRONMENT**

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### **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* (2002), *Lake Mead NRA Resource Management Plan* (NPS 2000) and the *Lake Mead NRA General Management Plan* (NPS 1986).

The area of concern for the proposed project is located in the Boulder Basin development zone of Lake Mead, and includes the 15-mile stretch between Las Vegas Bay and the Hemenway Wall. This area is a high use area occupied by beach areas, launching sites, marina operations at Lake Mead Marina, access roads, utility corridors, campgrounds, a trailer village, a hotel, boat storage and maintenance facilities, Lake Mead Cruises, and special use areas for sailing, scuba, and personal watercraft use. This area currently exceeds four million visitors a year.

The original location of the Lake Mead Marina, is located in this area at Fishing Point. This marina relocated from this area to its present location in the 1960s. This area currently has paved access from Lakeshore Road to Hemenway Harbor road, then by dirt roads to coves on either side of Hemenway Harbor.

### **Natural Resources**

Three of America's four desert ecosystems, the Mojave, the Great Basin, and the Sonoran Deserts, meet in Lake Mead NRA. The project area is characteristic of the Mojave Desert, with low precipitation (averaging 8 to 23 centimeters per year [3 to 9 inches per year]), low humidity, and wide extremes in daily temperatures. Winters are relatively short and mild, and summers are long and hot. The prevailing wind direction is from the south.

### **Geology, Topography, and Soils**

The majority of Lake Mead NRA is characterized by generally north-south trending mountain ranges separated by broad, shallow valleys. The lakeshore in the area of concern is characterized by flat, broad slopes with numerous desert washes leading to various points into Lake Mead.

### **Vegetation.**

Much of the shoreline area of Lake Mead is composed of non-native vegetation, such as tamarisk, and rocks, and bare ground. This is due to the fluctuating water levels of the lakes.

### **Wildlife and Aquatic Resources**

The shoreline areas of the Lake Mead generally provide only low quality habitat for wildlife due to the lack of vegetative cover, forage, and food sources. Small mammals, reptiles, and coyotes generally will utilize these areas when utilizing the water sources. If vegetation is present, birds, such as Gambel quail, rock doves, and ravens, utilize the areas. Ravens and coyotes frequent the developed areas of the recreation area due to the presence of humans and food sources. Waterfowl, such as mallards and coots, generally can be found on the lake around developed areas.

A number of fish species occupy Lake Mead, including game, nongame, and endemic fish species. Nongame species, such as carp, and game fish species, including largemouth bass, striped bass, catfish, crappie, and blue gill inhabit the waters of Lake Mead. Rainbow trout are stocked in selective areas of Lake Mead, including in the Boulder Basin area. Base productivity of Lake Mead is low. Game fish species depend upon the production of the threadfin shad. Rainbow trout are becoming increasingly significant as prey species for striped bass.

### **Special Status Species**

The NPS consulted the most recent listing of Endangered, Threatened, and Candidate Species prepared by the USFWS (Appendix A). Included in their response were the desert tortoise (*Gopherus agassizii*), razorback sucker (*Xyrauchen texanus*), and critical habitat for the razorback sucker.

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. Eastern Mojave tortoises are found in creosotebush, burrobush (*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. A recently identified 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.

Lake Mead is designated critical habitat for the razorback sucker (*Xyrauchen texanus*). Two spawning sites have been found on Lake Mead, including the area of Las Vegas Bay. No spawning activities have been reported in other areas along the shoreline of the Boulder Basin, or in the proposed project sites.

Other Species. The following special status species are found in Lake Mead NRA, but not in the project area: bald eagle (*Haliaeetus leucocephalus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), bonytail chub (*Gila elegans*), and relict leopard frog (*Rana onca*).

There are no federally listed plant species known to occur in the recreation area. The following sensitive species are found in the desert regions of Lake Mead NRA but not in the project area: Las Vegas bearpoppy (*Arctomecon californica*), three corner milkvetch (*Astragalus geyeri* var. *triquetrus*), Sticky buckwheat (*Eriogonum viscidulum*), and rosy two-toned penstemon (*Penstemon bicolor* ssp. *roseus*).

### **Water Resources**

Lake Mead and Lake Mohave are the primary water resources in the region. Access roads, in general, cross numerous washes that empty into the lakes. These washes are typically dry, although they are subject to seasonal flash flooding, primarily in the late summer and early fall months.

### **Air Quality**

Under the Clean Air Act Amendments of 1990, the US Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six “criteria pollutants”: lead, ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide (CO), and particulate matter smaller than 10 microns in diameter (PM10). Based on air quality monitoring data, a portion of Clark County (Las Vegas planning area’s Hydrographic Basin 212) has been designated as being in serious non-attainment with the NAAQS for MP10 and CO (EPA 2001). The project area is not located within the non-attainment boundary (Langston 2001).

The Nevada Division of Environmental Protection, Bureau of Air Quality has air quality jurisdiction over all counties in Nevada, except for Washoe and Clark counties, which have their own distinct jurisdictions. The Air Quality Division of the Clark County Health District is the regulatory and enforcement agency for air quality matters in Clark County.

The National Park Service, 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 area. Class I includes the following areas that were in existence as of August 7, 1977; national parks over 2,428 hectares (6,000 acres), national wilderness areas and national memorial parks over 2,024 hectares (5,000 acres), and international parks. Class II areas are parts of the country protected under the Clean Air Act but identified for somewhat less stringent protection from air pollution damage than a Class I area, except in specified cases (National Park Service 2001). 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 (NPS 2001).

Clean Air Act Conformity Requirements: The EPA has promulgated rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. The EPA general conformity rule requires a formal conformity determination document for federally sponsored or funded actions in non-attainment areas or in certain designated maintenance areas when the total direct and indirect net emissions of non-attainment pollutants (or their precursors) exceed specified *de minimis* levels. Since the project area is not within a non-attainment area, Clean Air Act conformity does not apply.

### **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. There are no sensitive receptors in the project area, other than Lake Mead NRA. The dominant noise source in the project area is automobile and truck traffic on Lakeshore Road, overflights, and boat traffic at Hemenway Harbor and on the Boulder Basin.

### **Cultural Resources**

#### Historic Overview: Prehistory

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 year. These cultures have been divided into discrete time periods based on various criteria, i.e. changes in technology, the types of animal and plant foods used, or the migration of peoples into and out of the area.

Occupation of the area began at the end of the late Pleistocene around 12,000 to 13,000 years ago with the Paleoindian period. The Paleoindian period lasted into the Holocene and ended around 7,000 before present (BP). The Pleistocene was dominated by greater rainfall and moderate temperature, which created an environment of vast lakes and humid conditions. During the Paleoindian period of the early Holocene, the environment was characterized by a general trend to warmer and dryer conditions. Paleoindian peoples lived in small, highly nomadic groups, utilized wild plant foods, and hunted now extinct big game. Physical remains from the Paleoindian period usually consist of flaked stone tools and the by products of tool manufacture, e.g. flakes and spent cores.

The Archaic period (7,000 to 2,000 [BP]) is characterized by nomadic peoples living in small groups adapted to the mosaic of microenvironments created by the overall warmer and dryer conditions. Their subsistence was based on gathering wild plant foods and hunting small game. Flaked stone tools and the by products of tool manufacture, along with the common occurrence of ground stone artifacts, typify the Archaic period. The arrival of Anasazi peoples from the east marked the end of the Archaic period and the beginning of the Saratoga Springs period. The Saratoga Springs period (2,000 to 750 BP) was dominated by the expansion of the Virgin Anasazi into the Lake Mead area, and their eventual withdrawal. The Virgin Anasazi were Puebloan peoples who used pottery

and lived in permanent structures, which changed from pithouses to above-ground Puebloan-type room structures. They practiced some horticulture but still depended heavily on wild plant and animal foods.

The Late Prehistoric lifeway, which began around 750 BP, was similar to Archaic adaptations. The people lived in small mobile groups, gathered wild plant foods, and hunted small game. They also practiced small scale horticulture. Archaeologically, these people are indistinguishable from the Mojave, Quechan, Hualapai, and Havasupai (Yuman-speaking peoples) and the Southern Paiute (Numic-speaking peoples) who occupied the area during the Historic period.

### Euro-American History

The Spanish and later the Mexicans were the first Euro-Americans to explore the area. During the Spanish/Mexican period (1500s to 1840s) trade routes were established between the population centers in New Mexico and the colonies in California. These trade routes included the Mojave Trail and the Old Spanish Trail, which passed through Southern Nevada.

The Mormons were the first to establish permanent Euro-American settlements in Southern Nevada. These included Las Vegas, St. Thomas, and Callville, the latter two of which were inundated by Lake Mead. During the late 1800s and early 1900s, the prosperity of these communities and others in the area was determined by the boom and bust cycles of the mining and ranching industries that formed the economic base of the area.

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.

Park Archeologist Steve Daron conducted a reconnaissance survey of the project areas for Alternatives B and C on February 18, 2003. The project areas for both alternatives have been previously disturbed by beach development activities and no cultural resources were located.

### **Socioeconomic Resources, Park Operations, and Visitor Use**

Lake Mead NRA was designated as the first NRA in 1964. It 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 2001e). Lake Mead NRA users include boaters, swimmers, fishermen, hikers, photographers, roadside sightseers, backpackers, and campers. Recreation visits in 1999 totaled just over nine million (NPS 2001e).

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## SECTION IV: ENVIRONMENTAL CONSEQUENCES

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### **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 criteria.

Impact analyses and conclusions are based on National Park Service staff knowledge of resources and the project area, review of existing literature, and information provided by experts in the National Park Service 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.

### **Related Laws, Regulations, and Policies**

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

#### **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 the beneficial uses of water quality, including human health, health of the aquatic ecosystem, and recreational use.

A primary means for protecting water quality under the CleanWater 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 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.

Water quality criteria developed to protect specific uses are updated periodically by the Environmental Protection Agency. New and revised criteria are published in the Federal Register, and summarized periodically in Quality Criteria for Water (U.S. Environmental Protection Agency 1986). Quality Criteria for Water, also known as "the Gold Book," recommends criteria for a state's Water Quality Standards. The criteria are almost always adopted by states as a portion of their standards, and they represent the "minimum" level of protection afforded to the waterbodies of a state.

A state's anti-degradation policy is a three-tiered approach for maintaining and protecting various levels of water quality. In Tier 1 waters, the existing uses of a water body and the quality necessary to protect the uses must be maintained. This is considered to be the base level of protection that must be applied to the water body. If the water quality in a water body already exceeds the minimum requirements for the protection of the designated uses (Tier 2), then the existing water quality must be maintained. The third level provides protection for the state's highest quality waters or where ordinary use classification may not suffice; these water bodies are Tier 3 waters and are classified as Outstanding National Resource Waters. The existing water quality must be maintained and protected in an Outstanding National Resource Waters. Lakes Mead and Mohave are Tier 1 waterbodies.

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.

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.119-445A.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 a, total dissolved solids, nitrogen, turbidity, and color.

Maximum Contaminant Levels for drinking water are developed under the Safe Drinking Water Act. These National Primary Drinking Water Regulations, for which states have primary enforcement responsibility, are updated periodically by the Environmental Protection Agency. New and revised standards are published in the Federal Register. These standards are applicable to finished drinking water that has undergone treatment processes.

The Lake Mead NRA Resource Management Plan identifies internal threats to water resources, including heavy recreation use in coves from excrement and littering and water quality in harbors by illegal sewage discharge and petrochemical spills. 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 in order to describe the relative changes in water quality (both overall, localized, short, long-term, cumulatively, 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.

### **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.

National Park Service *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 National Park Service "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 use the 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 an extended 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 for an extended amount of time, and mitigation is unable to alleviate the conditions.

### **Cultural Resources**

Laws, Regulations, and Policies: Numerous legislative acts, regulations, and National Park Service 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 National Park Service 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 National Park Service *Management Policies*, and the *Cultural Resource Management Guideline (DO-28)*, as well as other related policy directives such as the National Park Service *Museum Handbook*, the National Park Service *Manual for Museums*, and *Interpretation and Visitor Services Guidelines (NPS-26)*.

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 National Park Service 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, only historic resources that are eligible or are listed on the National Register of Historic Places are considered for impacts. An impact, or effect, to a property occurs if a proposed action would alter in any way the characteristic that qualify it for inclusion on the register. If the proposed action would diminish the integrity of any of these characteristics, it is considered to be an adverse effect.

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.
- *Minor impacts:* Potentially eligible or listed properties are present; no direct impacts or impacts with only temporary effects are expected.
- *Moderate impacts:* Potentially eligible or listed properties are present; indirect impacts or, in the case of structures, where activity is limited to rehabilitation

conducted in a manner that preserves the historical and architectural value of the property.

- *Major impacts:* Potentially eligible or listed properties present; direct impacts including physical destruction, damage, or alternation 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 of alter its setting. Neglect of a property resulting in its deterioration or destruction (36 CFR 800.5).
- *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.

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

#### **Criteria and Thresholds for Impact Analyses of all Other Issues**

Impacts to floodplains, recreation resources, visitor use, experience, and public safety, socioeconomic resources, and recreation area operations were analyzed using the best available information and best professional judgment of park staff.

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.
- *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 judgement of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park; is the key to the cultural or natural integrity of the park or to opportunities for enjoyment of the park; or as 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 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 with the potential to cumulatively affect the resources (impact topics) evaluated for the project area are identified below. 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.

**Growth of Las Vegas Valley.** 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. By 1960, Las Vegas' population was over 64,000 (Clark County's was 127,000), and by 1980 it was approximately 164,000 (Clark County's was 463,000). 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% increase. At the same time, Clark County's population increased from 562,000 to 1,036,000, an increase of 84.3% (Las Vegas City 2001a). The July 2000 population estimate for Las Vegas was 482,874 (Las Vegas City 2001b). The latest population prediction in the Las Vegas Valley is for two million people by 2005 (Las Vegas City 2001a).

**Increases in Visitation.** 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.

**Fluctuating Water Elevations of Lake Mead.** On Lake Mead, the average daily elevation for the last 10 years (1992 through 2002) was 1,193.9 feet above msl. The elevation of 1,221.4 feet above msl represents the elevation at the top of the spillway gates. On July 24, 1983, a maximum water surface elevation of 1,225.85 feet above msl was reached on Lake Mead. The theoretical minimum elevation required to generate power is 1,083 feet above msl, and the minimum elevation required for the operation of the Southern Nevada Water Authority's original intake facility is 1,050 feet above msl.

For the past 10 years (1992 through 2002) Lake Mead has operated between water surface elevations 1,173.39 and 1,215.89 feet above msl. Lake Mead may increase or decrease its operating levels due to the adoption of Colorado River Interim Surplus Criteria by the Bureau of Reclamation and the above or below snow pack conditions. The Surplus Criteria will determine the surplus water conditions in the lower Colorado River Basin for the time period 2002 through 2016. The impacts on recreational resources from this action have been addressed in the *Colorado River Interim Surplus Criteria Final Environmental Impact Statement*, December 2000, document's prepared by Reclamation (BOR 2000).

Since 2000, Lake Mead's surface elevation has dropped 56 feet to 1158 feet above msl. The Bureau of Reclamation has predicted that elevations will continue to drop to 1137 feet above msl by June 2003. If this occurs, additional marina operations on Lake Mead could be forced to move out of their existing coves into alternative locations (BOR 2002).

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## **ALTERNATIVE A – No Action**

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Under the no-action alternative, Lake Mead Cruises would not relocate from its present location. When water levels reach 1146 msl, the facility would no longer be able to operate and would close.

### **Water Resources**

There would be continued negligible to minor impacts to water resources at the existing facility location due to ongoing marina operations. This impact would exist until low water levels dictate closure of the facility, probably in early April.

*Cumulative Impacts.* There would be no cumulative impact to water resources.

*Conclusion.* Ongoing negligible to minor impacts would continue to water resources at existing facility until closure. No impairment would occur to water resources as a result of the impacts associated with this alternative.

### **Floodplains**

Lake Mead Cruises would remain at its existing location, in the reservoir inundation zone, until water levels dictate closure, probably in early April.

*Cumulative Impacts.* There are no cumulative impacts to floodplain values.

*Conclusion:* The no-action alternative complies with executive orders for floodplain management and does not impair floodplain values.

### **Air Quality**

Existing shoreline-based facilities, including an unpaved access road and parking lot, create localized, minor impacts to air quality from dust.

*Cumulative Impacts.* As lake levels decrease, and shoreline areas are exposed, airborne particulate matter can increase. Windy conditions and disturbance due to vehicular use, beach grading, and other activities, can create dusty conditions on a temporary and localized basis in the Boulder Beach development zone. The existing facilities at the Lake Mead Cruises site can add to the particulate matter in the area. However, when compared with the exposed shoreline areas elsewhere, the existing facilities at Lake Mead Cruises are adding negligible to minor amounts of particulate matter to the Boulder Basin zone. Overall, increased particulate matter can create moderate to major impacts in the Boulder Basin development zone.

*Conclusion.* Existing shoreline facilities at Lake Mead Cruises contribute slightly to the overall dusty conditions in the Boulder Basin zone, particularly on windy days or when maintenance activities are occurring in the region. While these facilities can create minor impacts to air quality, when combined with other factors, including exposed shoreline, windy conditions, and maintenance activities, the impact can be major. As it is a localized impact occurring only during periods of high wind, it does not constitute an impairment to park resources.

### **Cultural Resources**

No new facility construction occurs under this alternative, only the removal from the water of existing facilities. No impacts to cultural resources would occur.

*Cumulative Effects:* There would be no cumulative impact to cultural resources through the removal of the facility.

*Conclusion:* This alternative does not result in impact or impairment to cultural resources.

### **Recreation Resources**

Under this alternative, Lake Mead Cruises would be forced to close in April, until water levels increase, or permanently. This would remove a valuable recreational service from Lake Mead NRA.

*Cumulative Impacts.* As lake levels decrease over time, other facilities may be forced to close, reducing the available recreation resources at Lake Mead NRA. This could create long-term adverse, moderate impacts to recreation resources.

*Conclusion.* There would be long-term moderate to major adverse impact to recreation area resources as a valuable service would no longer be available.

### **Visitor Experience and Public Safety**

Visitors would no longer be able to experience boating activity on Lake Mead without renting or owning a motorized or non-motorized vessel. Lake Mead Cruises would no longer be able to provide an educational and recreational opportunity to the general public.

*Cumulative Impacts.* As lake levels decrease, there is the potential that other marinas on Lake Mead would relocate, and services may change or decrease. This could lead to decreased recreational opportunities, and negatively impact the visitor experience.

*Conclusion.* There would be negative, moderate to major, long-term impacts to the visitor experience with the closure of Lake Mead Cruises.

### **Socioeconomic Resources**

Lake Mead Cruises, Inc. would likely go out of business under this alternative. They would not be able to operate their facility at its present location after April. Bus tours would not longer be able to provide this as a trip option, and could lose revenue.

*Cumulative Impacts:* The local economy depends upon the tourist industry and visitor services industry for the majority of its revenue. Opportunities at Lake Mead NRA can add to that revenue. However, it is likely that there would be only negligible effects to the area economy from the closure of this facility.

*Conclusion:* There would be major impacts to the operators of Lake Mead Cruises, Inc., but negligible cumulative impacts to the area economy.

## **Recreation Area Operations**

There would be no effect to recreation area operations.

*Cumulative Impacts:* No cumulative impacts.

*Conclusion:* No effect.

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## **ALTERNATIVE B- Relocation of Lake Mead Cruises, Inc. to Horsepower Cove, Management-Preferred Alternative**

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Under this alternative, the existing Lake Mead Cruises facility would be relocated to a site at Horsepower Cove. All of the impact areas would be below high water and on previously disturbed ground.

### **Water Resources**

Components of the concession operations at any marina, especially those associated with fueling and boat maintenance, can create minor to moderate impacts on water quality within the marina area. Impacts can include the potential for fuel spills, potential for releases from sewage or gray water holding tanks, and higher concentrations of gasoline derivatives such as PAHs, benzene, and MTBE. Selected testing to date of selected high use areas, including marinas, have shown that while such compounds have been detected, they do not exceed state or Clean Water Act standards.

The NPS provides guidance on best management practices for the handling of fueling areas and boat maintenance for concessioners and the boating public. Public education and implementation of best management practices reduces the risk of spills. However, spills can still occur and create moderate to major impacts in the spill area. Marinas generally create localized and minor increases in nutrient loading due to their attraction of waterfowl, gulls and fish, as well as the provision of a substrate to grow algae.

Lake Mead Cruises operates only four tour vessels out of its facility, therefore, it is not considered a marina where concentrated use occurs. Risks to water quality onsite are primarily from boat fueling and fuel spillage. These risks are minimized because of state requirements, the use of trained employees to fuel vessels, and utilizing best management practices.

*Cumulative Effects:* This proposal does not increase the cumulative impacts upon Boulder Basin from marina and boating operations. Essentially, the existing level of use at the current Lake Mead Cruises location would be relocated to the proposed area. The result is no net increase in boating or fueling activity, but transfer of the focus of that activity from one location to another. Cumulative number of boats in basin and general distribution of boats would remain the same or similar.

*Conclusion:* Detectable, localized impacts on water quality would likely occur in the new facility location. Marinas by definition concentrate a certain level of boating use, and

may have localized nutrient loading from gulls, ducks, and carp. However, existing marinas on Lake Mead and within the Boulder Basin have been proven to operate within state water quality standards and standards within the Clean Water Act. Detectable amounts of contaminants that may be found in the vicinity of marinas do not exceed standards, and are localized impacts. The relocation of Lake Mead Cruises facility and operations would not result in impairment of water quality.

### **Floodplains**

The proposed location would have no effect on floodplain values. The proposed area is not located within a flood zone (or does not provide for overnight use in a flood zone). The marina is functionally dependent upon being located in the water within the reservoir inundation zone.

*Cumulative Effects:* The proposed location would have no cumulative effects on floodplain or wetland values.

*Conclusion:* The proposal complies with executive orders for floodplain management and does not impair floodplain values.

### **Air Quality**

Grading road and parking areas would result in local and temporary fugitive dust. Newly graded roads could be treated with dust palliative to reduce dust emissions. Localized increases in hydrocarbon emissions could occur in direct area of the facility.

*Cumulative Effects:* Fugitive dust should be temporary, and mitigated by addition of dust palliative to road. Increases in hydrocarbon emissions would not have any net effect or cumulative effect, as the relocation of the facility from one area of Boulder Basin to another area and would not increase the number of boats in use.

*Conclusion:* There would be minor to moderate impacts to air quality as a result of increased dust in the project area, and with increased traffic in the new marina location. There would be no impairment to the air quality as a result of the impacts associated with this alternative.

### **Cultural Resources**

The project area for this alternative does not contain cultural resources. There are known locations of prehistoric and historic mining in the Mojave desert scrub habitat upslope from the shoreline location of the facilities. All existing roads into the site are well away from these known areas. Ground disturbing impacts are generally below the high water line. The history of use in the recreation area would indicate that foot traffic would not increase significantly in desert areas away from the marina, as the visitors interest in those locations is towards the shore and water.

There are no submerged cultural resources offshore from this location.

*Cumulative Effects:* There are no cumulative cultural resource impacts from this alternative.

*Conclusion:* This alternative does not create an impairment of cultural resources.

### **Recreation Resources**

Boulder Beach has a history of recognized use zones, which have been discussed in the *Lake Management Plan and final Environmental Impact Statement*. This alternative places the Lake Mead Cruises facility in the Horsepower Cove area, a traditional personal watercraft area. Water skiers have long used the water surface area adjacent to the wall of Promontory Point. While none of these areas was zoned for exclusive use, the acknowledgement of these zones by traditional users have worked in general to separate activities and user conflicts. The placement of the facility in this location would have a negative effect on those who have traditionally used the Ski Beach and Horsepower Cove location. However, since Las Vegas Boat Harbor is already in place at this location, and no additional beach space would be lost to the facilities, and no additional water surface would be required for the wakeless harbor, it is considered a minor adverse impact.

While this is a negative impact, sufficient areas exist nearby for a continued quality recreation experience. Crowding of the area by other vessels would be mitigated in part by the wakeless harbor. Mitigation could include the marking of a harbor entry channel that guides general boating traffic entering and exiting the harbor away from available personal watercraft and water skiing areas.

*Cumulative Effects:* There are no cumulative effects as they relate total boat use in Boulder Basin. Traditional users of the general area, familiar with the uses of Ski Beach and Horsepower Cove would need to adapt to the presence of the both the Las Vegas Boat Harbor and the Lake Mead Cruises facility. Sufficient areas still exist for recreational use in the general vicinity, and sufficient area abounds in the entire Boulder Basin and other portions of Lake Mead.

*Conclusion:* There would be minor impacts to those visitors who have used, or expect to utilize, the Horsepower Cove and Ski Beach areas for shoreline activities, such as personal watercraft use and swimming. These visitors would be displaced to elsewhere in the recreation area.

### **Visitor Experience and Public Safety**

Traditional users of the Horsepower Cove area would need to adjust their activities to avoid the marina and harbor area.

*Cumulative Effects:* There is a cumulative effect to the users who have lost part of their traditional use areas to the Las Vegas Boat Harbor, and who will lose additional space under this alternative. However, there would still remain adequate space for a spectrum of recreation activities that recognizes the traditional uses in the area. Cumulative effects are not significant. There are adequate areas within Boulder Basin to accommodate the various user populations. There is no net change in number of boats in the basin.

*Conclusion:* This alternative would result in mixed impacts to visitor experience. Some visitors would experience beneficial results as they would be able to experience a boat trip on Lake Mead. Some visitors would experience minor to moderate negative impacts from the displacement from their recreational use area.

### **Socioeconomic Resources**

Lake Mead Cruises would pay for the move and utility upgrade, causing short-term negative impacts. However, in the long-term, this alternative would positively impact the operators of Lake Mead Cruises as they would be able to continue operations.

*Cumulative Effects:* There is a significant positive cumulative effect compared to the no action alternative. The operators of Lake Mead Cruises would be able to continue their business, supplying a valued service to the area.

*Conclusion:* The alternative has a favorable impact on socioeconomic resources.

### **Recreation Area Operations**

The recreation area planning, resource and maintenance staff has been and would continue to be involved in planning and compliance review for this facility relocation. The recreation area staff and concessioner would coordinate the development of certain infrastructure, such as utilities, to facilitate the move of the privately held marina facilities. However, the NPS would not be required to compensate the marina operator for the loss of its business.

*Cumulative Effects:* This environmental assessment only discusses the temporary moving of the facility until such time as long term planning can be completed and/or water levels increase. In addition, predictions for continued falling lake levels may necessitate the moving of additional marinas on Lake Mead. The recreation area is committed to completing a *General Management Plan* amendment in the near future that will discuss the permanent location for this marina, as well as potential needs to move other marinas should the lake levels continue to fall.

*Conclusion:* There would be a cost to the recreation area of continuing the upkeep of shoreline facilities, such as road access, restrooms, and parking areas, to the Horsepower Cove area for the Lake Mead Cruises and Las Vegas Boat Harbor facilities. Since this is necessary with or without the relocation of Lake Mead Cruises, it would be a negligible impact.

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## **ALTERNATIVE C- Relocation of Lake Mead Cruises, Inc. to the SCUBA Park**

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Under this alternative, the existing Lake Mead Cruises facility would be relocated to the southern side of Pyramid Causeway, in the area currently designated as a SCUBA park. All of the impact areas would be below high water and on previously disturbed ground.

### **Water Resources**

This alternative would have the same type of impacts as alternative C. Components of the concession operations at any marina, especially those associated with fueling and boat maintenance, can create minor to moderate impacts on water quality within the marina area. Impacts can include the potential for fuel spills, potential for releases from sewage or gray water holding tanks, and higher concentrations of gasoline derivatives such as PAHs, benzene, and MTBE. Selected testing to date of selected high use areas, including marinas, have shown that while such compounds have been detected, they do not exceed state or Clean Water Act standards.

The NPS provides guidance on best management practices for the handling of fueling areas and boat maintenance for concessioners and the boating public. Public education and implementation of best management practices reduces the risk of spills. However, spills can still occur and create moderate to major impacts in the spill area.

Marinas generally create localized and minor increases in nutrient loading due to their attraction of waterfowl, gulls and fish, as well as the provision of a substrate to grow algae.

Lake Mead Cruises operates only four tour vessels out of its facility, therefore, it is not considered a marina where concentrated use occurs. Risks to water quality onsite are primarily from boat fueling and fuel spillage. These risks are minimized because of state requirements and best management practices.

*Cumulative Effects:* This proposal does not increase the cumulative impacts upon Boulder Basin from marina and boating operations. Essentially, the existing level of use at the current Lake Mead Cruises location would be relocated to the proposed area. The result is no net increase in boating or fueling activity, but transfer of the focus of that activity from one location to another. Cumulative number of boats in basin and general distribution of boats would remain the same or similar.

*Conclusion:* Detectable, localized impacts on water quality would likely occur in the new facility location. Marinas by definition concentrate a certain level of boating use, and may have localized nutrient loading from gulls, ducks, and carp. However, existing marinas on Lake Mead and within the Boulder Basin have been proven to operate within state water quality standards and standards within the Clean Water Act. Detectable amounts of contaminants that may be found in the vicinity of marinas do not exceed standards, and are localized impacts. The relocation of Lake Mead Cruises facility and operations would not result in impairment of water quality.

### **Floodplains**

The proposed location would have no effect on floodplain values. The proposed area is not located within a flood zone (or does not provide for overnight use in a flood zone). The marina is functionally dependent upon being located in the water within the reservoir inundation zone.

*Cumulative Effects:* The proposed location would have no cumulative effects on floodplain or wetland values.

*Conclusion:* The proposal complies with executive orders for floodplain management and does not impair floodplain values.

### **Air Quality**

Grading road and parking areas would result in local and temporary fugitive dust. Newly graded roads could be treated with dust palliative to reduce dust emissions. Localized increases in hydrocarbon emissions could occur in direct area of the facility.

*Cumulative Effects:* Fugitive dust should be temporary, and mitigated by addition of dust palliative to road. Increases in hydrocarbon emissions would not have any net effect or cumulative effect, as the relocation of the facility from one area of Boulder Basin to another area and would not increase the number of boats in use.

*Conclusion:* There would be minor to moderate impacts to air quality as a result of increased dust in the project area, and with increased traffic in the new marina location. There would be no impairment to the air quality as a result of the impacts associated with this alternative.

### **Cultural Resources**

The project area for this alternative does not contain cultural resources.

There are no submerged cultural resources offshore from this location.

*Cumulative Effects:* There are no cumulative cultural resource impacts from this alternative.

*Conclusion:* This alternative does not create an impairment of cultural resources.

### **Recreation Resources**

Boulder Beach has a history of recognized use zones, which have been discussed in the *Lake Management Plan and final Environmental Impact Statement*. This alternative places the Lake Mead Cruises facility in the area designated as the SCUBA park. The placement of the facility in this location would have a negative effect on those who have traditionally used the SCUBA park. The NPS would work to designate another area for the exclusive use of divers.

*Cumulative Effects:* If other marinas are relocated due to low water conditions, there is the chance that shoreline users would be further displaced. However, sufficient areas still exist for recreational use in the general vicinity, and sufficient area abounds in the entire Boulder Basin and other portions of Lake Mead.

*Conclusion:* There would be moderate impacts to those visitors who have used, or expect to utilize, the SCUBA park. These visitors would be displaced to elsewhere in the recreation area.

### **Visitor Experience and Public Safety**

Traditional users of the SCUBA park would be displaced until water levels allow Lake Mead Cruises to move back to Boulder Harbor.

*Cumulative Effects:* There would still remain adequate space for a spectrum of recreation activities that recognizes the traditional uses in the area. Cumulative effects are not significant. There are adequate areas within Boulder Basin to accommodate the various user populations. There is no net change in number of boats in the basin.

*Conclusion:* This alternative would result in mixed impacts to visitor experience. Some visitors would experience beneficial results as they would be able to experience a boat trip on Lake Mead. Some visitors would experience minor to moderate negative impacts from the displacement from their recreational use area.

### **Socioeconomic Resources**

This alternative would positively impact the operators of Lake Mead Cruises as they would be able to continue operations. However, Lake Mead Cruises would have to spend more of their profit on setting up the utilities at this site. Utilities are located nearby, at Lake Mead Marina, but extensions would be required.

*Cumulative Effects:* There is a significant positive cumulative effect compared to the no action alternative. The operators of Lake Mead Cruises would be able to continue their business, supplying a valued service to the area.

*Conclusion:* The alternative has a favorable impact on socioeconomic resources, but would not be as beneficial as Alternative B, due to the longer extensions and higher costs required for the utility hook-ups..

### **Recreation Area Operations**

The recreation area planning, resource and maintenance staff has been and would continue to be involved in planning and compliance review for this facility relocation. The recreation area staff and concessioner would coordinate the development of certain infrastructure, such as utilities, to facilitate the move of the privately held marina facilities. However, the NPS would not be required to compensate the marina operator for the loss of its business. The NPS would provide support in terms of grading the access road and parking area, and providing restrooms in this location.

*Cumulative Effects:* The recreation area does not have the staff to support another temporary location. They are currently being utilized at the Horsepower Cove location for periodic maintenance activities. This would add an additional workload to the staff.

This environmental assessment only discusses the temporary moving of the facility until such time as long term planning can be completed and/or water levels increase. In addition, predictions for continued falling lake levels may necessitate the moving of additional marinas on Lake Mead. The recreation area is committed to completing a *General Management Plan* amendment in the near future that will discuss the permanent location for this marina, as well as potential needs to move other marinas should the lake levels continue to fall.

If Lake Mead Cruises moves to the SCUBA beach location, that would preclude the use of that location by Lake Mead Marina should it be required to move part of all of its facilities.

*Conclusion:* There would be a cost to the recreation area for work related to grading and preparing the land-based facilities, such as improving road access, moving and maintaining restrooms, and grading parking areas, at the SCUBA park area for the Lake Mead Cruises facilities. Ongoing maintenance of a new area could create minor to moderate adverse impacts to recreation area operations.

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## SECTION V: COORDINATION AND CONSULTATION

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Public scoping took place between January 9 and February 8, 2003, to generate issues and alternatives related to the proposed plan. A scoping press release was distributed, and a scoping newsletter was sent to interested agencies, organizations, and other interested parties. In addition, a scoping notification was published on the park's web page. The park received one written responses expressing support for the relocation of the Lake Mead Cruises facility.

Public notice of the availability of this environmental assessment was published in local newspapers, and on the Lake Mead NRA Internet Web site (<http://www.nps.gov/lame>). Individuals and organizations could request the environmental assessment in writing or by phone. The environmental assessment was circulated to various federal, state, and local agencies, individuals, businesses, and organizations on the park's mailing list for a 30-day public review period. Copies of the environmental assessment were made available at area libraries.

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

Superintendent  
National Park Service  
Lake Mead National Recreation Area  
601 Nevada Way  
Boulder City, Nevada 89005  
Telephone: (702) 293-8957  
Facsimile: (702) 293-8008

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## APPENDIX A

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Listing of Threatened and Endangered Species – State of Nevada

[http://ecos.fws.gov/webpage/webpage\\_region\\_lists.html](http://ecos.fws.gov/webpage/webpage_region_lists.html)

Accessed on February 3, 2003

### Nevada -- 37 listings

#### Animals -- 29

| <u>Status</u> | <u>Listing</u>  |
|---------------|---|
| E             | Chub, bonytail ( <i>Gila elegans</i> )  |
| E             | Chub, Pahrnagat roundtail ( <i>Gila robusta jordani</i> )                             |
| E             | Chub, Virgin River ( <i>Gila seminuda (=robusta)</i> )                                |
| E             | Cui-ui ( <i>Chasmistes cujus</i> )  |
| E             | Dace, Ash Meadows speckled ( <i>Rhinichthys osculus nevadensis</i> )                  |
| E             | Dace, Clover Valley speckled ( <i>Rhinichthys osculus oligoporus</i> )                |
| T             | Dace, desert ( <i>Eremichthys acros</i> )   |
| E             | Dace, Independence Valley speckled ( <i>Rhinichthys osculus lethoporus</i> )          |
| E             | Dace, Moapa ( <i>Moapa coriacea</i> )   |
| T             | Eagle, bald (lower 48 States) ( <i>Haliaeetus leucocephalus</i> )                     |
| E             | Flycatcher, southwestern willow ( <i>Empidonax traillii extimus</i> )                 |
| E             | Frog, mountain yellow-legged (southern California DPS) ( <i>Rana muscosa</i> )        |
| T             | Naucorid, Ash Meadows ( <i>Ambrysus amargosus</i> )                                   |
| E             | Poolfish, Pahrump ( <i>Empetrichthys latos</i> )                                      |
| E             | Pupfish, Ash Meadows Amargosa ( <i>Cyprinodon nevadensis mionectes</i> )              |
| E             | Pupfish, Devils Hole ( <i>Cyprinodon diabolis</i> )                                   |
| E             | Pupfish, Warm Springs ( <i>Cyprinodon nevadensis pectoralis</i> )                     |
| E             | Skipper, Carson wandering ( <i>Pseudocopaesodes eunus obscurus</i> )                  |
| T             | Spinedace, Big Spring ( <i>Lepidomeda mollispinis pratensis</i> )                     |
| E             | Spinedace, White River ( <i>Lepidomeda albivallis</i> )                               |
| E             | Springfish, Hiko White River ( <i>Crenichthys baileyi grandis</i> )                   |
| T             | Springfish, Railroad Valley ( <i>Crenichthys nevadae</i> )                            |
| E             | Springfish, White River ( <i>Crenichthys baileyi baileyi</i> )                        |
| E             | Sucker, razorback ( <i>Xyrauchen texanus</i> )  |
| T(S/A)        | Tortoise, desert (outside/taken from Sonoran Desert) ( <i>Gopherus agassizii</i> )    |
| T             | Tortoise, desert (U.S.A., except in Sonoran Desert) ( <i>Gopherus agassizii</i> )     |
| T             | Trout, bull (U.S.A., conterminous, lower 48 states) ( <i>Salvelinus confluentus</i> ) |
| T             | Trout, Lahontan cutthroat ( <i>Oncorhynchus clarki henshawi</i> )                     |
| E             | Woundfin (except Gila R. drainage, AZ, NM) ( <i>Plagopterus argentissimus</i> )       |

#### Plants -- 8

| <u>Status</u> | <u>Listing</u>   |
|---------------|--|
| T             | Milk-vetch, Ash meadows ( <i>Astragalus phoenix</i> )                  |
| T             | Centaury, spring-loving ( <i>Centaureum namophilum</i> )               |
| T             | Sunray, Ash Meadows ( <i>Enceliopsis nudicaulis var. corrugata</i> )   |
| E             | Buckwheat, steamboat ( <i>Eriogonum ovalifolium var. williamsiae</i> ) |

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*)

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**APPENDIX B  
PUBLIC SCOPING**

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**National Park Service**  
U.S. Department of the Interior

Lake Mead  
National  
Recreation Area

**601 Nevada Way**  
**Boulder City, NV 89005**

**702.293.8947 phone**  
**702.293.8936 fax**

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**Lake Mead National Recreation Area News Release**

**For Immediate Release: January 9, 2003**  
**Release #3-03**  
**Roxanne Dey, 702.293.8947**

**Environmental Assessment Being Prepared for Possible Temporary Relocation of  
Lake Mead Cruises Facility**

William K. Dickinson, Superintendent, Lake Mead National Recreation Area, is soliciting public comments for an environmental assessment related to issues associated with the proposed temporary relocation of the Lake Mead Cruises facility.

Water levels on Lake Mead are at 40-year lows and have dropped to a level where the operators of Lake Mead Cruises must consider options for the temporary relocation of their facilities. Water level projections are for continued decreases, including a 20-foot vertical drop in 2003 and an additional 10-foot drop in 2004. Based on these projections, it is estimated that the Lake Mead Cruises facility may have to vacate its present position by the end of April 2003.

Lake Mead Cruises operates the tour boat service on Lake Mead, offering several sightseeing cruises on a variety of vessels. Its flagship vessel, the Desert Princess, a 125-foot paddlewheel, offers daily sightseeing tours to Hoover Dam. It is currently located in the Boulder Basin of Lake Mead just north of Lake Mead Marina.

The National Park Service is in the process of preparing an environmental assessment to identify and evaluate feasible alternatives, including: no action; relocation within the current cove; and relocation of the facilities to a different area within the Boulder Basin. To assist with the process of preparing the environmental assessment, Lake Mead National Recreation Area is seeking public comment on the issues and potential alternatives. Written comments can be submitted through February 8, 2003 to:

Superintendent, Lake Mead National Recreation Area,  
ATTN: Environmental Assessment – Lake Mead Cruises, 601 Nevada Highway,  
Boulder City, Nevada 89005.

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In the near future, Lake Mead National Recreation Area will initiate a long-term planning process to address the low water issue. An amendment to the Lake Mead National Recreation Area General Management Plan (1986) will investigate the necessary and appropriate management options for park facilities and operations, including marina locations, as part of an on-going process to address the lowering water levels while continuing to provide public access to Lake Mead.

**-end-**

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