

FINDING OF NO SIGNIFICANT IMPACT

Cottonwood Cove & Temple Bar Arsenic Water Treatment Facilities Environmental Assessment

July 2009

Lake Mead National Recreation Area
Clark County, Nevada and Mohave County, Arizona

PURPOSE AND NEED

The purpose of this project is to reduce arsenic levels in the drinking water at Cottonwood Cove and Temple Bar within Lake Mead National Recreation Area (NRA) by constructing a new water treatment facility (WTF) at each location. In 2001, the Environmental Protection Agency (EPA) reduced the acceptable Maximum Contaminant Level (MCL) of arsenic in drinking water to 10 parts per billion. The new regulation took effect January 23, 2006, leaving these developed areas out of compliance for safe drinking water standards.

Each of these developed areas contains campgrounds, restaurants, park employee and concessioner housing, and trailer villages. In addition to year-round residents, these areas receive high levels of recreational visitation, primarily in summer months. Arsenic is a tasteless and odorless element which has been linked to a variety of health problems, including several types of cancer. It is important that Lake Mead NRA become compliant with current arsenic level standards to reduce potential impacts to human health.

SELECTED ACTION

The selected action is the environmentally preferred alternative, which was identified and analyzed in the environmental assessment (EA) as the proposal. No changes are incorporated in the selected action based on public comment. Under this alternative, new WTFs will be constructed at both the Cottonwood Cove and Temple Bar developed areas. The WTF at Temple Bar will be located immediately adjacent to existing water storage tanks. The WTF at Cottonwood Cove will be located approximately 500 feet from existing water storage tanks. The permanent facilities will be approximately 100 feet by 50 feet at each location. Each site will contain arsenic treatment equipment, laboratory space, restrooms, covered parking, and water discharge structures for the backwash of filter media. New or improved unpaved access roads will be required at each location, although these roads will stem from existing roads and will be relatively small in size. Underground water and power supplies will be constructed at each location, and will stem from existing utilities in the immediate area.

Each arsenic WTF will be equipped with photovoltaic cells on the roof to provide supplementary power. Buildings will be oriented to minimize the amount of energy

required for cooling during the hot summers of the desert. Windows will be solar tinted to reduce heat from solar radiation, and skylights will be incorporated to reduce the energy costs of overhead lighting. WTFs will be located lower in elevation than associated water storage tanks so that gravity may be used to backwash filter media during the cleaning and replacement process, ensuring that only a single pump will be required at each location.

The buildings will be hidden from view both by existing structures and by strategic placement based on the elevational contours of the area to the greatest extent practicable. New structures will be colored to match their surroundings, and in order to protect dark night skies only shielded low intensity external security lighting will be used. Each facility will be enclosed by chain-link fencing, and neutral inserts will be utilized to reduce impacts on visual resources. Reducing arsenic concentrations in potable water will have positive impacts on human health for users in each of these developed areas.

NO ACTION ALTERNATIVE

Under this alternative, WTFs would not be constructed at Cottonwood Cove or Temple Bar. The potable water in these areas would continue to originate at wells, and would remain out of compliance with current EPA arsenic MCL regulations. Prolonged exposure to arsenic can lead to a wide range of health problems, including paralysis, loss of vision, and cancer.

ALTERNATIVES CONSIDERED BUT DISMISSED

An alternative considered but dismissed was switching from the use of groundwater to the use of surface (lake) water at both Temple Bar and Cottonwood Cove. While surface water does not contain appreciable arsenic levels, it contains a wide array of biotic and abiotic substances that must be treated or removed, creating additional waste that must be disposed of. Extracting surface water requires either a floating barge containing a pump and associated piping, or a pipeline that runs from the treatment facility into the lake. Lake Mead experiences constantly changing water levels, making these extraction methods both costly and time consuming. Invasive quagga mussels are present in both Lakes Mead and Mohave. These mussels grow readily on submerged objects, and are capable of clogging intake pipes. The maintenance involved in keeping pumps and pipes quagga mussel free can be very time consuming, labor intensive, and costly.

Treating groundwater for arsenic is a much more efficient and less complex method of attaining healthy drinking water than building and maintaining the necessary infrastructure to collect and treat surface water.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will promote the National Environmental Policy Act (NEPA), as expressed in Section 101 of NEPA. This alternative will satisfy the following requirements:

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

The Council on Environmental Quality states that the environmentally preferable alternative is "the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038)." According to the National Park Service (NPS) NEPA Handbook (DO-12), through identification of the environmentally preferred alternative, the NPS decision-makers and the public are clearly faced with the relative merits of choices and must clearly state through the decision-making process the values and policies used in reaching final decisions.

The selected action, Alternative B, is the environmentally preferable alternative because overall it will best meet the requirements in Section 101 of NEPA. Alternative B is consistent with criteria two, three, five, and six. Alternative B will improve water quality and ensure that public health is not jeopardized. Alternative B prevents undesirable consequences by limiting risks to health and safety. This alternative helps achieve a balance between the natural environment and human use, and enhances the quality of renewable resources for human consumption. By utilizing existing structures, natural topography, and earthen tones to disguise new facilities, and limiting new disturbance, Alternative B has beneficial impacts on human health and safety without degradation, jeopardizing park resources, or having other unintended consequences. The preferred alternative will meet the goals of the project and will achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities. With the implementation of mitigation measures, impacts to the natural environment will be minor under this alternative. Beneficial impacts to the human environment in terms of health and safety will be moderate.

Unlike Alternative B, the No Action alternative does not fully meet the goals of the project or NEPA criteria two, three, five, or six, because benefits to human health and safety would not be fully realized. The continued consumption of water with levels of arsenic higher than those recognized as safe by the EPA could result in serious health effects. This alternative would not enhance the quality of renewable resources or achieve

a balance between population and resource use that would permit high standards of living or a wide sharing of life's amenities.

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 mitigation measures presented in Table 1 related to constructing and operating WTFs will be implemented under the action alternative.

Table 1 - Mitigation Measures

Resource Area	Mitigation Measures	Responsible Party
Geology and Soils	Topsoil will be collected and stockpiled under the supervision of resource management staff. Upon project completion, topsoil will be placed in disturbed areas to enhance the recovery of native vegetation and to reduce erosion.	Contractor
	All construction equipment will be pressure-washed and inspected for foreign soil to prevent the introduction of invasive weeds. If equipment leaves the park, it will be rewashed prior to returning to the project site.	Contractor, Park Service
	All areas to be disturbed will have boundaries flagged prior to ground disturbing activities. All disturbances will be confined to flagged areas. Disturbance beyond the flagged work zone will be prohibited.	Contractor
Vegetation	Vegetation salvage will occur within project boundaries as deemed appropriate by NPS resource managers. Salvaged plants will be stored at the park's native plant nursery and used to revegetate the project site following construction.	Park Service
Wildlife and Special Status Species	During construction, a park biologist will be on site to ensure that no wildlife (including the protected desert tortoise) wanders into project areas. If wildlife is present, construction will be postponed until all animals have vacated the area.	Park Service
	All trash will be disposed of in appropriate containers and removed from the project site daily to avoid attracting ravens, which may feed on juvenile desert tortoises and other wildlife.	Contractor
	All open trenches and holes will be covered at night to prevent desert tortoises and other wildlife from becoming trapped. During the day, all open trenches will be checked in the morning, afternoon, and evening. Trenches will be checked immediately prior to backfilling.	Contractor
	Before construction begins, a qualified NPS biologist will provide on-site training to workers which will include information on desert tortoise biology, legal protection of the species, and all required mitigation and reporting requirements.	Park Service
	Project areas will be surveyed for burrowing owls prior to	Park Service

	construction. Any identified burrows will be avoided, or collapsed while unoccupied.	
Visual Resources	To reduce visual impacts, new facilities will be concealed by existing structures and elevational contours of the area, and any external lighting will be downshielded so as to protect dark night skies. The chain-link fencing surrounding new facilities will include neutral inserts to reduce visual impacts. Topsoil replacement and revegetation will further reduce visual impacts.	Contractor
	New facilities will be constructed using permanent pre-colored, non-reflective building materials that match surrounding hues to reduce impacts on visual resources.	Contractor
Safety and Visitor Use and Experience	Dust abatement measures will be developed to minimize impacts to air quality during construction activities.	Contractor

WHY THE SELECTED ACTION WILL NOT HAVE A SIGNIFICANT IMPACT ON THE HUMAN ENVIRONMENT

The NPS used the NEPA criteria to evaluate whether the selected action will have a significant impact on the environment. As defined by 40 CFR 1508.27, significance is determined by examining the following criteria:

1. Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an environmental impact statement:

No significant adverse impacts were identified that will require further analysis in an environmental impact statement.

2. The degree to which public health and safety are affected:

There will be moderate, long-term, beneficial impacts to public health and safety under the selected alternative due to a reduction in the arsenic levels in drinking water at Cottonwood Cove and Temple Bar. Bringing arsenic levels into compliance with current EPA regulations will reduce the potential for adverse health effects to users.

3. Any unique characteristics of the area such as proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains:

No wild and scenic rivers, ecologically critical areas, wetlands or floodplains are located within the project area. No cultural resources were identified during surveys of the project areas. There will be no unacceptable impacts and no impairment to cultural resources.

4. The degree to which impacts are likely to be highly controversial:

There were no highly controversial impacts identified during preparation of the EA or the public review period.

5. The degree to which the potential impacts are highly uncertain or involve unique or unknown risks:

No highly uncertain, unique, or unknown risks were identified during the preparation of the environmental assessment or the public review period.

6. Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration:

No significant adverse impacts were identified during preparation of the EA. Implementation of the selected action neither establishes a NPS precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

7. Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects:

The EA analyzed impacts to geology and soils, vegetation, wildlife, special status species, visual resources, park operations, and safety and visitor use and experience. As described in the EA, cumulative impacts were determined by combining the impacts of the selected action with identified impacts from other past, present, and reasonably foreseeable future projects and actions.

Future redevelopment plans at Cottonwood Cove will have additional impacts to geology and soils, vegetation, wildlife, special status species, and visual resources. Impacts will occur in or near the established developed area at this location. Due to the placement of new arsenic treatment facilities near existing structures and in heavily impacted areas, new facilities will not have significant effects to resources or result in impairment.

8. The degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources:

No cultural resources, historic properties, or historic viewsheds were identified in the project areas. There would be no unacceptable impacts and no impairment to cultural resources.

9. The degree to which an action may adversely affect an endangered or threatened species or its habitat:

Implementation of the selected action is not likely to adversely affect the desert tortoise. Since no other federally protected species occur in the project area, there will be no unacceptable impacts or impairment to threatened or endangered species.

Informal consultation with the United States Fish and Wildlife Service for impacts to the desert tortoise (Mojave population) was completed, and their concurrence with the "not likely to adversely affect" determination was received April 13, 2009.

10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment:

The selected action violates no federal, state, or local environmental protection laws. The EA for The Cottonwood Cove and Temple Bar Arsenic Treatment Facilities was prepared using the guidelines detailed in *NPS Management Policies 2006*, and the selected action meets all NPS requirements.

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

Scoping

A press release announcing a 30-day public scoping period for the Cottonwood Cove and Temple Bar Arsenic Treatment Facilities Environmental Assessment was posted on the park website and issued to area media on February 2, 2009. No public comments were received.

Agency Consultation

Informal consultation with the United States Fish and Wildlife Service was completed for impacts to the Mojave population of the desert tortoise. Concurrence with the finding of the "not likely to adversely affect" determination analyzed in the EA was received April 13, 2009. No other special status species occur in the project areas.

Public Review and Comments

On June 8th, 2009 a press release announcing a 30-day public review period for the environmental assessment was sent to various federal and state agencies, individuals, businesses, and organizations on the park's mailing list. The press release was also posted at the Alan Bible Visitor Center and Cottonwood Cove and Temple Bar ranger stations. Notification was also published on the Lake Mead NRA website (<http://www.nps.gov/lame>) and on the NPS Planning, Environment, and Public Comment website at <http://parkplanning.nps.gov>. Individuals and organizations could request the environmental assessment in writing, by phone, or by e-mail.

Lake Mead NRA's mailing list is comprised of 237 federal and state agencies, individuals, businesses, and organizations. The environmental assessment was distributed to 38 individuals, agencies, and organizations likely to have an interest in this project. Entities on the park mailing list that did not receive a copy of the environmental assessment received a letter notifying them of its availability and methods of accessing the document. Copies of the environmental

assessment are available at area libraries, including: Boulder City Library, Clark County Community College (North Las Vegas), Clark County Library, Las Vegas Public Library, Mohave County Library (Kingman, AZ), Sunrise Public Library (Las Vegas), University of Arizona Library (Tucson, AZ), University of Nevada- Las Vegas James R. Dickinson Library, Meadview Community Library, Moapa Valley Library (Overton, NV), Mesquite Library, Mohave County Library (Lake Havasu City, AZ), Laughlin Library, Searchlight Library, and Washington County Library (St. George, UT).

Public comments were accepted through July 10, 2009. One comment was received from the Nevada Division of Wildlife (NDOW) addressing the potential for Banded Gila Monsters to occur in the Cottonwood Cove area. A qualified biologist will inform project personnel of how to identify Gila monsters, how to distinguish them from other native lizards, and how to properly report a sighting should an encounter occur. NDOW will be notified immediately of any Gila monster sightings during the course of this project.

IMPAIRMENT OF PARK RESOURCES OR VALUES

The implementation of the selected action will not constitute an impairment of LMNRA resources or values. Impacts documented in the EA and summarized above will not affect resources or values key to the natural and cultural integrity of the LMNRA, or alter opportunities for the enjoyment of the LMNRA. The selected action will not impair LMNRA resources and will not violate the National Park Service Organic Act. This conclusion is based on a thorough analysis of the impacts described in the EA, and the professional judgment of the decision maker, in accordance with *NPS Management Policies 2006*. As described in the EA, implementation of the selected action will not result in major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of LMNRA, (2) key to the natural or cultural integrity of LMNRA, or (3) identified as a goal in LMNRA's *General Management Plan* or other relevant NPS planning documents.

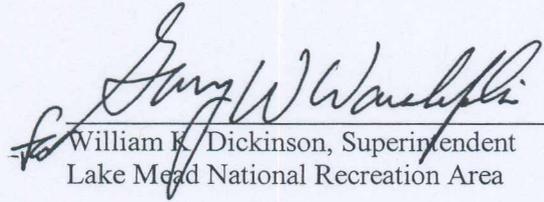
CONCLUSION

Based on the analysis completed in the EA, the capability of the mitigation measures to reduce, avoid, or eliminate impacts, and with due consideration of the minimal public response received, the National Park Service determined that the selected action does not constitute an action that normally requires the preparation of an environmental impact statement.

Negative environmental impacts that could occur are minor to moderate in effect. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, known ethnographic resources, or other unique characteristics of the region. There are no significant impacts to the affected environment. There are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence identified. Implementation of the action would not violate any federal, state, or local environmental protection law. Therefore, in accordance with the National Environmental Policy Act of 1969, and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental

impact statement will not be prepared for this project, and the selected action may be implemented as soon as practicable.

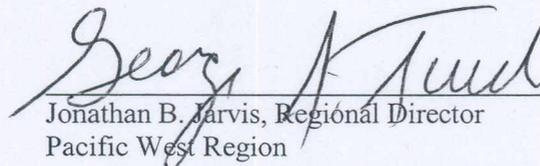
Recommended:



William K. Dickinson, Superintendent
Lake Mead National Recreation Area

7/16/09
Date

Approved:



Jonathan B. Jarvis, Regional Director
Pacific West Region

7/24/09
Date