

Facilities and Development

The management goal is to minimize development of new facilities that would detract from the setting and sense of discovery that currently exists. This means minimizing new development, including the proliferation of signs, new campgrounds and outdoor interpretive exhibits. Mojave will look to adjacent communities to provide most visitor support services such as food, gas, and lodging.

The National Park Service intends to locate some management facilities outside the Preserve, consistent with the existing management direction and proposed actions identified in this plan. This will include, but is not limited to, the headquarters site in Barstow, visitor information facilities in Baker and Needles and potentially employee housing in Baker, Nipton, or Essex. Buildings may be acquired through donation or acquisition. An assessment will be made for possible future uses such as visitor contact stations, administrative facilities, employee housing or restoration as historical interpretive properties.

SUSTAINABLE DESIGN

The Congressional mandate to the National Park Service has been expressed as conserving resources while providing for their enjoyment by the public in a manner that will leave them unimpaired for future generations. This concept can best be expressed today as *sustainability*, which is defined simply as making decisions and engaging in practices that meet the needs of the present generation, without compromising the ability of the next generation to meet its needs. The National Park Service has issued, and will update as necessary, guiding principles for sustainable design that will be applied throughout the Preserve.

Mojave will implement sustainable practices and pollution prevention activities in all its management actions, including the planning, construction and maintenance of facilities. New and rehabilitated visitor and management facilities in Mojave will be harmonious with park resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, welcoming to traditionally associated groups, energy-efficient, and cost-effective. In practical terms, the park must also integrate this philosophy into its daily standard operating procedures through adoption of water and energy conservation, recycling and waste reduction practices. Alternative energy sources such as solar electricity will be considered for facilities at remote NPS locations of housing or operations. Park facilities and operations will

incorporate sustainable practices and elements to the maximum extent practicable in planning, design, siting, construction, building materials, utility systems, recycling, and waste management.

VISITOR INFORMATION

Information Centers and Sources

Background

The National Park Service currently leases commercial space under the giant thermometer adjacent to the Bun Boy Restaurant in Baker, California as a visitor information center. The Death Valley Natural History Association and Mojave National Preserve share support and material costs. Information is available about recreational activities in Death Valley National Park, Mojave National Preserve and surrounding Bureau of Land Management recreation sites such as Dumont Dunes.

The Preserve leases office space in downtown Needles, California, for a visitor information center. This facility is jointly staffed by the National Park Service and the Bureau of Land Management and provides interpretive and recreational information about Mojave, Lake Mead, and BLM lands.

The Preserve also operates a visitor contact center at Hole-in-the-Wall in a building constructed by the Bureau of Land Management. A small amphitheater and picnic area are also available. This visitor contact center serves as a point for people camping in or visiting the area and provides overnight, short-term housing for one NPS staff member. Electricity is provided by a solar electric system.

Information on park recreational opportunities has become increasingly available on the internet over the last several years. The National Park Service maintains sites on every park unit at the address: www.nps.gov. By accessing this site, visitors can also gain access to numerous other links about NPS issues, policies and visitor data. This site will help visitors planning a trip to the area gain the basic information about activities, camping, and phone numbers. From the general nationwide homepage, the park has constructed much more detailed information on Mojave. For instance, detailed information on the geology of the Preserve has been assembled in a cooperative venture with the U.S. Geological Survey. In addition, the park cooperated in the development of an inter-agency desert-wide website that provides information on public lands in the desert and links to many interesting and informative sites. This page can be found at: www.californiadesert.gov.

Plan Actions

A small information and visitor contact desk will be staffed at the headquarters building in Barstow to serve the public and fill the needs of local communities. Staffed information centers at Baker and Needles will continue to operate with the same focus as at present for the near future, although the exact location is subject to change since the facilities are leased. Mojave will continue to pursue partnerships with other agencies (federal, state and local), tribes and private organizations to offer a broad range of visitor information at key desert gateway locations that target a variety of users.

The Preserve has many highway entrances and only two staffed information centers outside its boundary. Many visitors arrive without much opportunity to receive advanced information. To remedy this situation, the staff will continually investigate and develop effective means of providing advanced information about the Preserve and the Mojave Desert. The overall objective of this proposal will be to try to provide advance information that will enhance the quality of visitor's experience.

The Hole-in-the-Wall information center will continue to provide visitor information and serve as a base for interpretive programs such as ranger-led walks and talks. Eventual replacement of the existing information center is being evaluated in a separate development concept plan for Hole-in-the-Wall. One objective of this development concept planning effort is to design and locate facilities to be operationally efficient in their purpose, provide unstaffed visitor information, but be visually secondary and complementary to the beauty of the natural resources.

The park will continue to maintain and enhance information on Mojave via the National Park Service website (www.nps.gov/moja), and will continue to explore new opportunities for information distribution as technology develops. Mojave is also a partner in a project to provide interagency desert-wide visitor information on the internet at a single site (www.californiadesert.gov).

Interpretive Facilities

Kelso Depot

Background

The Kelso Depot offers considerable potential as the main interpretive and visitor contact facility for the Preserve. The building has two main floors above ground, and a basement space. Total area in the



building is 11,500 square feet. Currently, it is not accessible to the public, and it is interpreted only by a couple of information panels around the building. The building was abandoned by Union Pacific in 1985 and has been damaged over the ensuing years by vandalism, removal of asbestos, earthquakes, and fifteen years of nonuse. Most of the historic furnishings were removed prior to NPS ownership. Modifications over the years have resulted in alteration of the historic fabric in some parts of the building, such as the addition of modern drywall, new wall partitions and drop ceilings. Most of the historic landscaping has long since died or been removed, except for six large date palms. Parking is on denuded grounds to the west and north of the building. Bricks from the front of the building were removed by BLM and stored in a large steel container onsite. The site has easy access to electrical power, but telephone lines are limited at this time. Water and sewer are no longer available and must be developed if the building is to serve the public as a visitor center. Portable toilets were installed by the NPS in 1995 due to the high use in the area.

The depot is within a 100-year floodplain. The National Park Service conducted a floodplain study in 1997 to determine the potential threat of flooding to the building. Mitigating measures such as armoring the dike north of the depot, elevating a portion of Kelbaker Road so as to fill in the gap in the dike that the road creates, or establishing an advanced warning system could reasonably address concerns for the protection of human life and government property.

Plan Actions

Kelso Depot will be rehabilitated for use as a museum and interpretive facility. The exterior of the building will be restored to its pre-1942 appearance, as will certain interior spaces such as the Beanery, the ticket office, the conductor's room and two overnight lodging rooms. Other spaces inside the depot will be rehabilitated for visitor information displays, natural and cultural exhibits, audiovi-

sual exhibits, an auditorium, public restrooms, publication sales, working space for staff, conference/classroom space, and storage space. The landscaping will be rehabilitated to approximate the historic scene as much as possible, recognizing the need for parking, restrooms and concern for water conservation. The building will be fully accessible and provide the following primary functions:

- Visitor information and interpretation of the Preserve's natural and cultural resources
- Space for interpretive talks, videos, slide shows and educational classes
- Some NPS administrative offices, workspace and storage for interpretive and cooperating association functions
- Space for a Natural History Association sales outlet where books and other educational materials relating to Mojave can be purchased.
- Some overnight rooms for volunteers, researchers or employees
- Limited food sales initially, but potential for full service restaurant at some point in the future

Besides the depot itself, the following are other key elements of the Kelso Depot rehabilitation and visitor center strategy. The development concept plan for the Kelso Depot provides a more complete description of these concepts, as well as discussions of alternative layouts and building schematics:

- Evaluate the town of Kelso for possible nomination as a historic district
- Seek to acquire (or develop partnerships) the Kelso schoolhouse and general store for possible preservation and interpretation
- Seek to acquire adjacent private lands to provide adequate space for parking and exhibits and to allow the protection of the cultural landscape of the Kelso area
- Take necessary steps to secure flood dike to ensure protection of the depot during flood events
- Install water well and septic system
- Evaluate possible related interpretation of historic iron ore loading bin and Vulcan Mine

Soda Springs (Zzyzx)

Background

The visitor shade structure, restroom, and parking lot have been reconstructed or replaced to remove

structurally unsafe and nonfunctional facilities. A self-guided trail and some interpretive panels provide some basic information on some aspects of the history and current use. A few interpretive panels and a self-guided trail currently provide limited visitor information. In 2000, the NPS replaced an existing interpretive shade structure, comfort station and parking lot. These facilities will serve as the focal point for visitors coming to Zzyzx for day use.

Interpretive opportunities at this historic desert oasis abound. This site has been used for hundreds of years, from early Native Americans, to a stage stop and public bathing site in the 1870s, to the Tonopah and Tidewater Railroad in the early 1900s, to a religious group attempting to mine gold in the nearby hills in 1914, to Curtis Springer and his Zzyzx Mineral Springs and Health Resort, and finally to its current education and research use for the last twenty years. The area also provides habitat for the endangered Mohave tui chub and offers a unique opportunity for visitors to experience and learn about the importance and diversity of desert wetland/riparian habitat.

Plan Actions

Mojave will explore opportunities for expanded day use trails in the area, and will expand the existing self-guided interpretive program and exhibits. These opportunities will be developed through the long-range interpretive plan and site specific planning. Occasional ranger-led programs may be provided. Planning, visitor use and interpretive programs in this area will be coordinated with California State University. Where possible, the ongoing desert research will be interpreted to the public.

Hole-in-the-Wall

Background

Existing interpretive facilities are limited to basic information and displays in the existing visitor information center. Maps and book sales are also available. Seasonal staff or volunteers open the building during the spring, summer and fall. A couple of existing interpretive panels are also in place at the top of the Rings Trail.

Plan Actions

This proposal will be implemented to improve visitor information about recreational activities in the area, and will provide some interpretation of the natural and cultural resources. The NPS will develop a site-specific management plan for the Hole-in-the-Wall area to address visitor and administrative facilities.

This effort will be guided by the following goals:

- Visitor and administrative facilities will be separated and their footprint on the landscape will be minimized. Sustainable practices will be fully incorporated as buildings are replaced or as opportunities arise.
- Overnight facilities will be relocated outside of active 100-year flood channels or warning/protective systems installed.



- Information will be provided in ways to interpret the natural and cultural history of the area regardless of the staffing of the information center.
- Disturbed areas will be restored with native vegetation and interpretive information on desert disturbance and restoration will be developed.
- The existing picnic area and group/equestrian sites will be evaluated for possible relocation.
- New trail opportunities to expand visitor use activities in the area will be considered.

Signing and Orientation

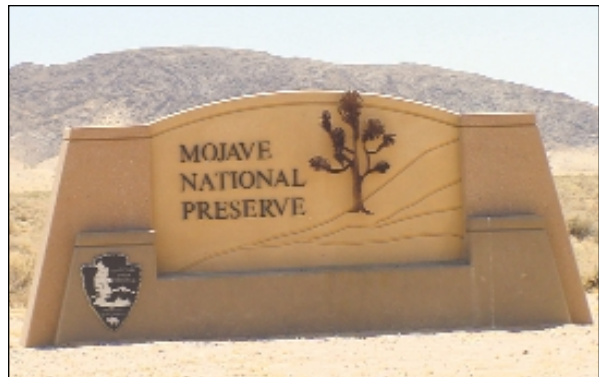
Background

Existing signs in the Preserve can be categorized as directional, regulatory and informational. The county posts the regulatory signs (i.e. speed limits) along the main travel routes. Directional signs, providing mileages and directions to specific sites, have been posted by the county, the National Park Service and the state. The park has recently erected major entrance monuments at each of the six paved entrances, marking the entrances into the Preserve, and including an information panel with a map and general information. Caltrans has also recently erected Mojave National Preserve signs along I-15 and I-40 at each of the entrances. Informational signs mark points of interest and visitor facilities or

may provide interpretive information about a particular resource. Many such signs existed when the Park Service began administering the area in 1994. Most of the signs marking the visitor facilities have been replaced with standard NPS signs, reflecting the new Mojave National Preserve designation.

Plan Actions

The philosophy on signs will be for them to be unobtrusive, used sparingly, and blend with the natural environment so that the undeveloped wild character and sense of exploration remains. The National Park Service will prepare a sign plan to ensure that this vision will be carried out. The sign plan will provide for directional signs to major points of interest, which are typically located on the major roads that carry most of the traffic. Secondary or backcountry roads will remain relatively free of directional signs. The intention will be to keep visitors from becoming lost. Efforts will be made in the sign plan to use international symbols or other appropriate methods to keep signs simple and easily understood for the broad spectrum of visitors entering the parks. Because the desert can be unforgiving in the summer, emphasis will be placed in the sign plan for signs that could help protect the health and safety of visitors unfamiliar with the desert.



A variety of portable media will also be used to minimize the proliferation of signs. Technological media such as compact disks and audiotapes will be provided to give visitors portable information. Brochures and other printed material will support a self-guiding interpretive program. Information will be provided in several languages and for various learning styles. These items might be part of an advance information program. NPS employees will emphasize visitor safety and resource protection.

NPS staff will develop an interpretive plan that will guide the overall direction and emphasis of the interpretive and educational programs. The overall objective will be to support the vision of visitors

being able to experience a land relatively free of development and improvements, with opportunities to feel a sense of exploration and discovery. The staff will constantly seek to understand and respond to visitor needs while striving to improve interpretive programs and facilities. To help accomplish this goal, visitor studies will be conducted every 5–10 years or as needed to gain the appropriate information (as funds are available). The National Park Service will work with California State Parks to develop a coordinated interpretive program that will offer information on Providence Mountains State Recreation Area and the Mojave National Preserve.

Existing interpretive media will be analyzed for accuracy, effectiveness, and appropriateness; some might be removed or replaced. Interpretive services will be supported by nonpersonal media such as wayside exhibits, brochures, and publications. Personal services such as ranger-led tours and nature walks will also be available.

Wayside Exhibits

Background

The BLM installed interpretive panels at Kelso Dunes, Zzyzx, Hole-in-the-Wall, Ft. Piute, Rock Springs, and the Teutonia Peak trailhead. The National Park Service has also installed an interpretive panel at the Kelso Depot.

Plan Actions

A minimal number of road or trailside interpretive wayside panels will be installed. Displays typically will be placed along paved or other heavily traveled roads to interpret significant and interesting resources visible from each area. Safety and orientation panels will be installed at key trailheads, developed campgrounds and other high visitor use areas such as Kelso Dunes. Care will be taken to make and keep these displays as unobtrusive as possible and secondary to the landscape they were interpreting. The objective behind this proposal is to provide a landscape relatively free of exhibits or signs so that visitors could experience a sense of exploration and discovery. Signs will be posted in parking areas asking visitors to check for tortoises under their vehicles before leaving parking areas.

Developed Campgrounds

Background

Mojave National Preserve has two developed campgrounds, Hole-in-the-Wall and Mid Hills. There is no fee to enter Mojave National Preserve, but a fee is charged

at Hole-in-the-Wall and Mid Hills campgrounds for the use of an individual or group campground.

Hole-in-the-Wall contains 35 campsites, water, vault toilets, an RV dump station and a campground host site. It is in very good condition. All campsites are accessible to visitors with disabilities and are designed for access by large recreational vehicles. The water system has recently been refurbished to provide better service. There is also a group camping facility with equestrian facilities at Hole-in-the-Wall.

The Mid Hills campground contains 26 campsites. It was not designed for larger vehicles, but serves tent campers and those with small recreational vehicles. The Mid Hills water system has been completely replaced and new vault toilets were installed in late 1997. Picnic tables and fire grates have also been upgraded.

California State Parks also operates a small, six-site campground at Mitchell Caverns.

Plan Actions

Mojave will retain the two existing developed campgrounds at Mid Hills and Hole-in-the-Wall that together provide 61 campsites. Ongoing improvements to existing campgrounds will continue. Campsites and trails in the Mid Hills campground will be redesigned to increase the level of accessibility for people with disabilities and to resolve other concerns. Campsite densities will not be increased. If visitation significantly increased to the point where many visitors were being turned away during most of the peak season, a campsite reservation system will be considered.

One new semi-developed campground with fewer services and campsites (approximately 15) will be considered in a separate planning effort.

Research and Education Centers

This section specifically addresses ownership and maintenance of facilities at existing research and education centers in Mojave National Preserve. The “Partnership” section of this plan addresses the NPS education and research mission and mandate, and partnership opportunities with universities to fulfill this mission. Use of the park as a natural laboratory for scientific study, research permits and collections are addressed under “Research and Educational Activities.”

Soda Springs Desert Study Center

Background

Soda Springs Desert Study Center is located a few miles south of I-15 off the Zzyzx exit, which is approximately 8 miles south of Baker. It is home to the Desert Studies Consortium, part of the California State University system. The facility, operated under an agreement with the National Park Service, offers dormitory-like lodging and classroom space for researchers and students attending field classes and extended education courses. Solar, diesel, and wind power provide electricity to the buildings. The facility consists of a complex of historic and modern buildings all located on National Park Service property. The historic buildings and site features have been nominated for the National Register of Historic Places as a historic district. There are 12 buildings, 3 sites, and 11 structures that have been identified as contributing elements to the historic setting. A total of 12 buildings/structures that have not been identified as contributing to the historic setting.

All the buildings (except mobile ones brought in by California State University) are federal property. The consortium has repaired and maintained most of the buildings and site features over the years to keep them in good condition. The site, structures, and buildings are to be managed through a cooperative agreement being developed between the consortium and the National Park Service. A caretaker associated with the consortium lives at the facility.

An unstaffed visitor information shade structure with restrooms and parking is located at the entrance to the education center. A path with interpretive signs leads visitors from the shade structure and around the pond directly to the east.

A fence and gate south of the facility keeps most trespass vehicles from the adjacent BLM Razor off highway vehicle open area out of the facilities, but on occasion vehicles illegally bypass the fence and come across the dry lakebed, which has been designated as wilderness.

Plan Actions

The California Desert Protection Act (section 514) calls for a cooperative management agreement between the National Park Service and the California State University to manage facilities and provide desert research and education at the Soda Springs Desert Study Center. This center operates at Zzyzx in facilities and land owned by the federal

government. The cooperative agreement will define use and maintenance responsibilities of the buildings and other facilities between CSU and the NPS. Buildings not routinely used by CSU may be considered for park offices or housing, especially where an NPS presence will assist in supporting and protecting resources and provide staff to interact with public not associated with CSU programs.

By virtue of its inclusion within the Mojave National Preserve, and as specified in law, the area must be managed consistent with federal laws and NPS policy and regulations. Many historic structures are located at this desert oasis, which has served as a desert research and educational facility for over twenty years. Historic structures, cultural landscapes, and other cultural resources must be maintained in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. The NPS and the public could benefit from a continued partnership with CSU to provide for continued maintenance and security of the facilities, offering of educational activities on desert resources for the public, and to attract scientific interests to pursue research in the Preserve.

Granite Mountains Natural Reserve

Background

The Granite Mountains Natural Reserve is part of the University of California natural reserve system and is dedicated to ecological research and education. The purpose of these reserves is to manage, protect and preserve sites that are undisturbed examples of California's extraordinary and diverse habitats for long term scientific research and for public education. On federal lands, this State purpose must be balanced with the park purpose and mission of protecting resources unimpaired for future generations and to provide for visitor enjoyment. The reserve serves as a classroom, laboratory, and ecosystem library for field studies in natural sciences. Every year, field classes and researchers come to the reserve. With the passage of the California Desert Protection Act, Congress designated 9,000 acres of the Mojave National Preserve as the Granite Mountains Natural Reserve. Within the 9,000 acres, approximately 2,200 acres are owned by the University of California. Housing, classroom facilities, a library, and office space is constructed and maintained by University of California, Riverside (UCR) on state land. No facilities are located on NPS land. UCR has sole authority for the use and maintenance of their facilities. The NPS and UCR have signed a cooperative agreement for the management and visitor use of the reserve.

Plan Actions

Section 513 of the CDPA designated the Granite Mountains Natural Reserve and called for a cooperative management agreement between the National Park Service and University of California to manage facilities and provide desert research and education. That agreement was signed by the UC Riverside Chancellor and the National Park Service.

The National Park Service will cooperate with the Reserve to develop informational kiosks for key entry points to provide information to the visiting public about the purpose of the Reserve, the NPS mission, and the need to exercise caution when visiting the area so as to not inadvertently disturb research projects.

Park Support Facilities

The National Park Service intends to locate some facilities outside the Preserve, consistent with the existing management direction and proposed actions identified in this plan. This will include, but is not limited to, the headquarters site in Barstow, visitor facilities in Baker and Needles and possibly employee housing, offices or maintenance shops in Baker or Essex.

Headquarters

Background

The headquarters for Mojave National Preserve currently occupies leased office space in the Mercado Mall (222 East Main Street) in Barstow, California. Other suites are available for leasing, but secured parking for government vehicle storage and warehouse space is unavailable at this site. In 2000, Mojave initiated steps through the General Services Administration to have new office space built to suit the needs of the headquarters operation. Commercial support services and housing are readily available in Barstow, Victorville, and surrounding communities.

Plan Action

Headquarters for Mojave National Preserve will continue to be located in the Barstow area. Space will be provided for the superintendent's staff, administration, planning, visitor services, resource management, special uses, and other central administrative offices. In addition, Mojave is co-locating with desert management partners (Department of Defense, Mojave Desert Ecosystem Program, Department of the Interior and Department of Defense Desert Manager coordinators and the U.S. Fish and Wildlife Service) to improve public access to agencies and information.

Field Offices

Background

Field offices are needed to provide working space for park rangers, resource and maintenance staff. The information center at Hole-in-the-Wall is also used as a field office for NPS staff. A visitor information center in Needles is in a leased building and also serves as office space for ranger staff. A small building was constructed in Baker in early 1998 for use as an office for interpretive, visitor protection, and maintenance staff. A mobile home in Kelso is used as a residence/office for a visitor protection ranger.

Plan Actions

Similar offices, such as the one built in Baker, are needed at other locations in the Preserve. The specific location and design of these buildings will be addressed in site specific development concept plans for these areas. Areas of prime consideration include Cima, Kelso, Lanfair Valley and the Hole-in-the-Wall vicinity. Sites with other existing development, electrical and phone service would receive first consideration. Facilities acquired from willing sellers will be evaluated in accordance with NPS policies for adaptive use as administrative sites.

Maintenance Facilities

Background

An office building was constructed in early 1998 in the abandoned Caltrans yard in Baker. Maintenance and visitor protection staff currently have offices in this building. The yard has several small structures that are used for storage and covered parking. A small carpenter shop was constructed in one of the empty buildings. The maintenance yard has plenty of open space to be used for vehicle and material storage. Some maintenance work is also based out of the Hole-in-the-Wall fire center.

A central maintenance facility is needed to provide storage and work space for maintenance activities. Baker currently serves as the interim central maintenance operation, taking care of most short-term maintenance needs. In late 2001, a maintenance area was being added to the new interagency fire center (see below). Other facilities such as shops, enclosed storage, and offices are also being constructed alongside this facility.

Plan Actions

The National Park Service will consider the option of contracting for some maintenance services if it will make economic and practical sense. General areas

that will be considered for a central maintenance function include Cima, Hole-in-the-Wall vicinity, Lanfair Valley and Essex.

Interagency Fire Center

Background

As of October 2001, the wildland fire control operation at Hole-in-the-Wall included a dormitory, office space, a vehicle storage building, and other storage buildings. Electricity is provided by a diesel generator. The Hole-in-the-Wall fire center dormitory, which is in fair to poor condition, houses 12 employees. Current staffing plans call for 15 employees in 1998 and up to 20 employees in the future, which means the dormitory is inadequate. Staff offices are also located in this building. The National Park Service added aboveground storage tanks for gasoline and diesel fuel. A dirt helicopter pad located just outside the fire center compound does not meet current agency standards. When used in the past, the access road to the group camping and equestrian areas was blocked.

Facilities for a seasonal interagency fire crew of fifteen, two large fire trucks, and support vehicles and equipment are necessary in close proximity to the historical fire occurrence. The fire crew responds to wildland fires throughout the Preserve, and extending south to Joshua Tree National Park and north to about Shoshone. Natural lightning caused fires occur primarily in the line of mountains extending from Granite Mountains to the Castle Peaks on the Nevada state line. In addition, vehicle fires along interstates 15 and 40 during the hot summer months threaten park resources. The fire crews respond to the vehicle fires not to suppress the vehicle fire but to ensure it does not spread to wildland.

Plan Actions

Wildland fire management operations will continue to be managed in cooperation with the Bureau of Land Management. An existing dormitory, office and garage at Hole-in-the-Wall are being replaced due to their poor condition. A value analysis process was utilized to consider the advantages of various building designs and about twelve alternative site locations. A separate development concept plan and environmental assessment for the entire Hole-in-the-Wall area is currently being developed. This plan will consider other visitor facilities. Construction to replace the existing fire center began in October 2001.

Employee Housing

Background

Most employees are not offered government housing, and must find their own residence on their own based on their assigned duty station location. However, some field positions, such as protection rangers and maintenance staff may be duty stationed at locations inside the park in order to have an onsite presence. It is also necessary to have short response times for these positions in the event of an emergency.

NPS employees find housing in many different ways. At headquarters in Barstow, employees obtain housing in the local communities. Employees in Baker may have the option of living in one of the five doublewide trailers once owned by the California Department of Transportation (Caltrans) or renting space in the community. Rentals are limited in Baker. The trailers, which are in an old Caltrans maintenance yard on BLM-managed federal land at the north end of town, are in fair to good condition. The NPS has upgraded them for occupation.

Kelso has a number of doublewide trailers that the railroad uses to house employees. Not all of the trailers have been occupied, and the National Park Service was able to rent one of them for employee housing. The stability of this housing option is uncertain. The National Park Service also owns a home northeast of the Hole-in-the-Wall ranger station off Black Canyon Road. The home is in poor condition and is undergoing major rehabilitation before it can be occupied. The visitor contact center at Hole-in-the-Wall provides a small efficiency apartment for one person. Existing housing in the community of Needles meets employee needs.

Plan Actions

When staffing levels exceed available NPS and private housing in Baker, new housing will be constructed to replace the existing double-wide trailers. Construction of new housing in Baker outside the existing yard will require appropriate approval and will depend on the availability of funding to buy private land to construct housing. The NPS will also consider leases or similar agreements with private parties to ensure housing for employees. Until then, the National Park Service will continue to upgrade the existing double-wide trailers where possible. NPS employee housing will not be provided in Needles or Barstow; rather, employees will find housing on the open market.

If existing homes in the Preserve were acquired by government purchase or donation, the park will evaluate the historical and aesthetic value, management needs, and the cost effectiveness of bringing these homes up to current standards. Standards and guidelines will include current NPS housing guidelines, building codes, historic preservation guidelines and standards, accessibility and energy conservation. Housing might be renovated, replaced, stabilized or removed as appropriate.

Before upgrading or renovating existing acquired homes or constructing new housing for employees, the National Park Service will evaluate the location of the housing and determine whether private housing within a one hour drive could serve the same need, and whether the total housing units are the minimum necessary to meet the mission of the Preserve. New housing construction will be considered when the evaluation step determined that renovation was not practical from an economical or operational standpoint and that the home had no historic significance.

Additional housing for employees in the Kelso area will also be pursued to support park programs. Housing may also be provided at the Hole-in-the-Wall area as positions are filled and adequate housing within a one-hour drive is unavailable outside the Preserve. A housing management plan is being prepared to consider the number and types of units necessary to meet the mission of the Preserve.

Access and Circulation

Background

Mojave National Preserve offers visitors a broad range of access options. Existing developed roads range from unmaintained primitive jeep roads to paved highways. A network of over 2,000 miles of roads is available. Hundreds of miles of old roads in wilderness, as well as developed hiking trails, and cross-country hiking provide foot and horseback access to all of the diverse and remote reaches of the Preserve.

In addition, the Union Pacific railroad traverses the center of the Preserve and provides a unique opportunity for seeing some of the inaccessible portions of the area, especially through the Devil's Playground. Train traffic on the Union Pacific tracks is also very active with up to 30 trains per day.

The region contains several highways that serve as major transportation corridors through the state.

Interstates 40 and 15 function as major routes between Los Angeles and southern California and many states to the east.

Kelso Depot is located at the Preserve's most used crossroad, where the 1997 average was 172 cars per day. Weekend traffic levels are estimated as being much higher but exact figures are not available.

Old Route 66 (National Trails Highway) runs through the south end of the planning area between Needles and Ludlow. The road is maintained by the county of San Bernardino. An increasing number of travelers have been attracted to this road because of the American culture and nostalgia attached to this highway. Movies such as *Bagdad Cafe* and other media have raised awareness to the point where even international visitors are driving the highway. Many cities and businesses along the highway are promoting Route 66 for the potential revenues from tourism. The highway has been nominated for the National Register of Historic Places.

Traffic has increased on local paved and maintained roads over the past years. The roads carry travelers north of Palm Springs, through Mojave National Preserve onto I-15, then back again. It is assumed that most of these travelers are headed to Las Vegas for the weekend.

Roads

Plan Actions

No major changes will be made to the existing roads. Some limited improvement of heavily used roads might be undertaken when funds permitted, such as the addition of crushed rock to the Kelso Dunes and Soda Springs access roads. Vehicle use will be limited to street legal vehicles. No offroad driving will be permitted. Driving in desert washes is not permitted unless they are shown as a developed road on park maps. These routes are usually easily identified on the ground, even after storms, due to the distinctive lack of vegetation from years of use forming a road alignment. Tracks caused from one or two vehicle passes do not establish a road.

To provide detailed guidance for managing the Preserve's road system, a road management plan will be prepared to evaluate the need for duplicate road sections, road surface conditions, and the appropriate level of maintenance. The management philosophy will be to enhance the visitor experience while providing for safe and efficient accommodation of park visitors and also protecting the natural and cultural environment. It also will include the

need to provide a road system that will allow for a variety of driving experiences consistent with the purpose and significance statements, as well as the desired future conditions for the Preserve.

Paved Roads

Background

Mojave National Preserve has six main paved entryways: Kelbaker Road, Cima Road, and Ivanpah Road off of I-15 on the north side; Kelbaker Road and Essex Road off I-40, and Goffs/Lanfair Road off of Route 66 on the south side. All these roads generally lead visitors in a north-south orientation with Kelso as a common point for four of these roads. The roads are all suitable for standard sedans and are in fair to good condition. Among these roads, Kelbaker road from I-40 to Kelso, Kelso-Cima Road and Morning Star Mine Road receives the heaviest use. Most traffic occurs on weekends as many drivers use these roads to travel to and from Las Vegas and Palm Springs.

The National Park Service does not maintain any paved roads at this time. San Bernardino County maintains an estimated 255 miles of road in the Preserve of which 176 miles is paved.

A road inventory by the county in 1996 indicated that there are approximately 2,180 miles of roads within the Preserve. Approximately 345 miles of roads were closed to mechanized and motorized use by Congressional designation of wilderness in the 1994 California Desert Protection Act. Roads were created over many years for access to utility corridors, ranching improvements, private property, mines, homesteading, favorite hunting or camping areas, viewpoints and for a variety of other reasons.

Plan Actions

The county of San Bernardino will continue to maintain the paved roads throughout the Preserve under a cooperative agreement with the NPS. An inventory of these roads, totaling about 176 miles, will be included in the cooperative agreement. In accordance with NPS regulations at 36 CFR 4.2.1, and to assure the safety of visitors and protection of park resources. Signing along these roads will be a joint responsibility, with the county installing and maintaining most regulatory signs, while the NPS will install and maintain interpretive and directional signs.

Maintained Dirt Roads

Background

The National Park Service maintains approximately 20 miles of dirt roads, including the Wildhorse Canyon, Kelso Dunes (first three miles), and the Zzyzx access road. The county maintains the unpaved Black Canyon Road, Lanfair Valley Road and Cedar Canyon Road (approximately 79 miles), which are normally suitable for use by passenger cars, except for occasional flood damage.

Plan Actions

The county of San Bernardino will continue to maintain the graded dirt Cedar Canyon, Black Canyon, Ivanpah, and Lanfair Valley roads (approximately 79 miles). The National Park Service maintains graded dirt access roads to Zzyzx, Kelso Dunes and Wild Horse Canyon road (approximately 20 miles). The cooperative agreement with the county will identify limited existing sites for equipment and materials storage, and specify road maintenance standards, lengths and widths. As with paved roads, signing along these roads will be a joint responsibility, with the county installing and maintaining most regulatory signs, while the NPS will install and maintain interpretive and directional signs.

Backcountry Dirt Roads

Background

The Preserve also has hundreds of miles of unmaintained dirt roads that traverse the backcountry. The condition of these roads varies considerably, from sometimes being passable by a passenger car, to barely suitable for a four-wheel drive vehicle. No regular maintenance is conducted by the National Park Service or San Bernardino County on these roads, although emergency repairs may be conducted.

Plan Actions

High-clearance and four-wheel-drive roads will not be routinely maintained by the Preserve or the County. However, emergency repairs or limited maintenance might be undertaken by the NPS or volunteer groups under cooperative agreements. Some private landowners that reside in the Preserve or organized groups may do limited maintenance on certain roads such as dragging the road or using a small tractor. Where these roads cross federal land, the NPS will require a permit for such routine maintenance. This permit is necessary to assure that no tortoise is harmed by the activity, and the maintenance is done in accordance with NPS standards. Backcountry users that encounter washed out roads

during their visit may make emergency repairs using hand tools, if required for them to exit an area.

Some pre-existing backcountry roads were included in wilderness areas by Congress and are no longer open to mechanized or motorized use. These routes are posted with carsonite or wooden signs and may not be used by mechanized or motorized vehicles of any kind, including bicycles, pursuant to the Wilderness Act.

Mojave Road

Background

The Mojave Road is a historic route that traverses the Preserve for about 60 miles from Ft. Piute to Zzyzx. The road was used from 1857–1883, abandoned, and not regularly used again until the early 1970s. A series of guidebooks authored by Dennis Casebier provide directions and interpretation of the cultural and natural history along the route. See the cultural resource section for a description of the road history. The existing alignment follows the historic road in some sections, while in others it parallels the old road section on a newer road. The section from old Ft. Piute through the canyon to the top of the ridge has not been used by vehicles in many years and retains much of its historic character. Most of the route is suitable only for high clearance or four-wheel drive vehicles. Maintenance over the years has been performed by user groups, such as the Friends of the Mojave Road.

Plan Actions

The Mojave Road will remain open for street legal vehicles, mountain bikes, equestrians, and hikers. Interpretive information will be available at visitor and information centers to enhance the public's understanding of features along the road. Opportunities to interpret significant features along the road will be considered. Information will stress proper low impact camping and travel techniques. The National Park Service will consider granting business permits for commercial guided tours of the road to provide visitors without the appropriate vehicle an opportunity to experience this resource.

Maintenance of the Mojave Road will be considered in a road management plan for the Preserve. Under that plan, general guidance will be given to allow the Mojave Road to develop its own character with minor maintenance action until the plan was completed. Maintenance generally will be limited to repairs needed to allow continued passage by vehicles currently using the road. The National Park

Service will seek partnerships with volunteer groups to help with maintenance of the road and other features in the road corridor.

Large groups will be required to camp at designated areas and obtain a special use permit (see Groups and Organized Events section for details). Areas that will be considered for large group use are Grotto Hills, Willow Wash, Seventeen Mile Point, the southeastern edge of Soda Lake in the Cow Hole Mountains, and the area know as the Granites, which are southwest of Soda Lake. The number of large groups using the road will be managed through the special use permit system. The intent of this action will be to keep adverse impacts low and avoid conflicting demands for camping space. This proposal will be further addressed under a future backcountry or visitor use management plan.

Nomination forms are being prepared to nominate the historic Mojave Road to the National Register of Historic Places. The National Park Service will strive to maintain the experience of solitude, adventure, and a sense of exploration for visitors traveling the Mojave Road. NPS rangers will patrol the road to offer emergency assistance and protect cultural and natural resources. The National Park Service will work to educate unprepared visitors about the rough character of the road. The primary guides for route finding will be the traditional rock cairns, along with maps, guidebooks, or other media.

Camping along the Mojave Road will be subject to management decisions made for roadside camping. Baseline information will be collected to determine use trends, the physical condition of the road, and conditions of natural and cultural resources adjacent to the road and at associated camping areas. When high use levels or inappropriate visitor behavior caused unacceptable impacts on the road or resources or negatively affected the quality of the visitor's experience, management actions will be taken to correct these problems. Standards for visitor use and resource conditions will be established after baseline information was gathered and evaluated in the backcountry or visitor use management plan.

Sand and Gravel for Road Maintenance

Background

Building materials (sand, gravel, and cinders), geothermal resources, and oil and gas on federal lands in the Preserve are not available for extraction or sale. There are no existing sites in the Preserve that are currently used for obtaining sand and gravel for road maintenance. Some previously used sites

do exist and need to be evaluated for reclamation potential.

Plan Actions

Use of borrow materials for road maintenance must conform to existing NPS policy, which requires materials to be obtained from sources outside the Preserve unless economically infeasible. The Preserve will allow the collection and stockpiling of material that washes onto roads during flood events for emergency use in repairing damage. This collection may occur in the active wash within 100 feet of the road centerline for the maintained paved and dirt roads, but only after a survey of the area certifies that no desert tortoise burrows would be harmed. Material accumulated on the active road surface may be reused or stockpiled without a survey. Stockpiling of such material may only occur at specified locations identified in the cooperative agreement.

Trails

Background

Few surface water sources in the Preserve are suitable to support extensive backpacking, but there are many opportunities for day hiking. There are two developed trails, one between the Mid Hills and Hole-in-the-Wall campgrounds, which is 8 miles one way. The second trail leads to Teutonia Peak from Cima Road and is 2 miles one way. Piute Canyon trail is an undeveloped trail, although an evident footpath established by use exists partway up the canyon. Cross-country hiking is also a traditional way of using the desert. Existing roads that are now included within wilderness areas are closed to use by mechanized vehicles, but open for hiking and equestrian use, including use by wheelchairs in accordance with NPS policy. All nonwilderness roads are open to hiking, bicycles, horses and licensed motorized vehicles.

A recreational driving trail also traverses the Preserve in several locations. The Heritage Trail is a collection of 660 miles of existing roads (mostly outside the Preserve) for which a series of guidebooks has been published to provide a recreational driving experience in the backcountry of the desert. This trail is still open for those visitors who prefer a driving experience in the backcountry, although some segments were affected by wilderness designation.

Plan Actions

The backcountry/wilderness management plan will address trail use by hikers, equestrians, bicycles, and visitors with disabilities. The plan will identify the

type and intensity of trail development, including the number of signs, trails, and trailheads, long distance trails extending into Bureau of Land Management or California State Parks and other jurisdictions, and anticipated maintenance levels for developed trails. The plan will be guided by the goal of increasing the diversity of recreational opportunities for the above activities in appropriate locations. Until completion of the plan, all trails will be open for use by hikers and equestrians, except where management problems were identified and restrictions needed to be established.

Previous roads that are now included within wilderness areas are closed to use by mechanized and motorized vehicles, but are open for other uses, including use by wheelchairs in accordance with NPS policy. During the trail planning effort, these roads will be evaluated for restoration or possible conversion to single track hiking trails.

Rights-of-way and Easements

Background

There are approximately 125 rights-of-way and/or easements within the Preserve. Some of these are entirely within the boundary, while others enter the Preserve and may terminate within or pass through the Preserve. Some of the existing rights-of-way and/or easements are listed below.

Plan Actions

Additional research and record checking over the next several years will be conducted in order to adequately document all the existing rights-of-way/easements and develop an administration plan. Mojave will convert existing rights-of-way to NPS standards and regulations wherever possible. If the right-of-way is no longer needed or its use is being converted to new technology, Mojave will seek to relocate the operation outside the Preserve. Abandoned rights-of-way will be restored by their holders. In addition, the NPS will develop a procedure to administer annual fee/rental collection. At present, the BLM collects and retains all annual fees/rentals associated with rights-of-ways/ easements in the Preserve. In some instances acquisition of the interest may be appropriate or warranted.

All proposed changes will be reviewed for impacts to the environment and all grantees of rights-of-way/easements will be educated regarding environmental concerns relevant to their authorized use. Agreements will be sought where necessary to protect Preserve resources.

Railroads

Background

The Union Pacific (UP) railroad line traverses the center of the Preserve for 91 miles, from Nipton, through Cima and Kelso, and to the southern edge of Soda Lake. This railroad right-of-way (ROW) is a 200-foot wide corridor that was granted by Congress in 1875. The railroad operates as a major regional freight corridor to southern California, servicing as many as 30 freight trains per day. UP also owns land in the Kelso Depot area and houses a small crew there in several mobile homes.

Passenger train service through the Preserve was discontinued by Amtrak in 1997. The line through the Preserve is currently a single set of tracks, with five sidings for passing located between Kelso and Cima. UP is currently pursuing permits to construct a second set of tracks parallel to the existing set, extending from Kelso Depot to Cima. This project would allow the return of passenger service from Los Angeles to Las Vegas, provided by Amtrak. Review of this double-tracking proposed is occurring under separate compliance.

Burlington Northern and Santa Fe railroad also operates a major railroad line that parallels the southern boundary of the Preserve in some locations. East of Goffs the railroad right-of-way forms the Preserve boundary, with the tracks outside the Preserve. This railroad does not enter the Preserve, but operations adjacent to the Preserve may impact park resources.

Plan Actions

If passenger train service resumes, the National Park Service will coordinate with Amtrak on the feasibility of placing NPS information and interpreters on trains and allowing passengers to stop at the Kelso Depot. The National Park Service will support the communities of Barstow, Nipton, and Primm in the establishing passenger train stops at these locations, with the anticipation of also establishing a stop at the Kelso Depot. Where feasible and appropriate, the National Park Service will also support the concept of using rail as an alternative form of transportation for visitors entering the Preserve.

The park will pursue cooperative agreements with both railroads to address issues such as spill response, emergency operations, permitting, maintenance of dikes that extend onto federal lands, use of pesticides and herbicides, and other relevant issues.

Roads

Most of the roads in the Preserve were constructed without rights-of-ways or easements being granted. The county of San Bernardino contends that all established roads in the Preserve are valid RS-2477 rights-of-ways. Revised Statute 2477 concerns rights-of-way established across public lands under the Mining Act of 1866. Although repealed by Congress in 1976 with enactment of the Federal Land Policy and Management Act, routes that existed prior to October 21, 1976 may "qualify" as an RS-2477 right-of-way. However, a right-of-way asserted under RS-2477 is not automatically assumed to be valid. Regardless of whether a party can successfully assert a valid claim to a right-of-way across national park land, the NPS retains the authority to regulate use of an RS-2477 right-of-way. See *U.S. v. Vogler*, 859 F.2d 638, 642 (9th Cir. 1988).

Wildlife Guzzlers

Background

Approximately 130 small game and six big game guzzlers were installed throughout the Preserve by agencies and interest groups over the last 60 years. The guzzlers were developed by the California Department of Fish and Game, the Bureau of Land Management, and volunteers before the area was designated a Preserve in 1994. The artificial waters were installed to enhance or replace natural waters for wildlife use.

A guzzler is a permanent self-filling water catchment. Most are similar to a cistern and are simple, low-maintenance devices that are essentially tanks filled by rain-collecting aprons (Giles 1971). Guzzlers are installed and used to provide water for hunted species in arid areas. Nongame species such as reptiles, songbirds, and insects also use these manufactured devices. Birds enter the covered tank through an opening and walk down a ramp to the



water. For bighorn sheep, piping extends from the storage tank to a drinking trough, which has a float valve to regulate the flow.

Plan Actions

The National Park Service will examine the use of and need for all big game and small game guzzlers. Guzzlers will be retained for native wildlife if they are found to be necessary to replace water lost due to actions taken by previous human activities. These developed water sites will be retained to allow native populations of plants and animals to return to or remain at a previously undisturbed population level. Simultaneously, with the retention of these developed water sites, the National Park Service will actively begin to restore natural water sources to be self-sustaining. When a water source becomes self-sustaining, the artificial facility will be removed. The National Park Service has no jurisdiction over developed water sites on private land. The park will modify existing water developments (mostly small game guzzlers) to prevent desert tortoise from gaining access and to ensure they are able to escape from them.

Motorized access to guzzlers in wilderness will be considered extraordinary and will not be routinely allowed unless unusual circumstances warrant it. These instances will be considered on a case-by-case basis. A minimum tool determination will be used prior to granting approval for motorized/mechanical equipment use within wilderness. Mojave National Preserve will follow the "Principles for Wilderness Management in the California Desert," the Wilderness Act, and the California Desert Protection act in the administration of the park's wilderness areas. Routine access for monitoring purposes will be by foot or horseback. Each water development in wilderness will also be examined in light of the restrictions in the Wilderness Act on structures and installations.



Ranching Developments

Background

Developments associated with ranching operations have been installed throughout the Preserve over the last 100 or more years. Hundreds of miles of barbed wire fences and water pipelines, as well as dozens of cattle guards, windmills, water tanks, troughs, corrals, earthen reservoirs, houses, barns, sheds and other structures exist to support the ranching operations. Maintenance of most of these facilities is the responsibility of the rancher who benefits from their use. Water is necessary for livestock grazing on NPS lands and these waters are controlled by the rancher to facilitate movement of livestock. Some fences, water tanks, pipelines and windmills are the responsibility of the NPS, the county or Caltrans (along I-15 and I-40) and are maintained by those entities. A partial inventory of these developments exists, but additional work remains to ensure the completeness and accuracy of the mapping and database.

Plan Actions

During the grazing management plan development, specific detailed lists and maps of the locations, ownership and maintenance responsibility of all these developments will be prepared.

If and when a grazing permit is purchased by a third part and donated to the NPS for retirement, most ranching developments will be removed following cultural resource inventory and analysis. Some of these developments may be retained as important features of the ranching history of the area. Others may be retained if necessary for other park resources management projects (i.e. burro removal or a park horse operation), park housing or administrative use.

