

February 2022

Construct New West Entrance Fee Station Environmental Assessment



Joshua Tree National Park

National Park Service

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Joshua Tree National Park

74485 National Park Drive
Twentynine Palms, CA 92277

Information about this document:

The National Park Service (NPS) has prepared this Environmental Assessment (EA) to examine the potential environmental impacts of the alternatives being considered for the proposed construction of the new West Entrance Fee Station located in Joshua Tree National Park, San Bernardino County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from the alternatives, and measures proposed to avoid, minimize and/or mitigate potential adverse effects on the environment.

What you should do:

Please read this EA. A paper copy of this document is available to review at:

Joshua Tree National Park Headquarters
74485 National Park Drive
Twentynine Palms, CA 92277

Twentynine Palms Library
6078 Adobe Road
Twentynine Palms, CA 92277

The EA is also available for review online at these websites:

- https://parkplanning.nps.gov/West_Entrance
- <https://www.nps.gov/jotr/getinvolved/westentrance.htm>

For individuals with sensory disabilities, this document would be made available in large print or on compact disk. To obtain a copy in one of these alternate formats, please contact the

Environmental Coordinator listed below.

We welcome your comments. Submissions must be in writing and postmarked to the address below, or received thru our comment website (https://parkplanning.nps.gov/West_Entrance).

Written comments regarding this EA may be submitted by **mail** to the following address:

Joshua Tree National Park Superintendent
RE: West Entrance
74485 National Park Drive
Twentynine Palms, CA 92277

Questions on the planning process can be sent to JTNP environmental coordinator:

- jotr_planning@nps.gov (Include “West Entrance” on the subject line)

What happens next?

After comments are received from the public and reviewing agencies, the park will review the comments for substantive content and revise the EA as necessary. Substantive comments are those that:

- Question, with reasonable basis, the accuracy of the information in the NEPA document.
- Question, with reasonable basis, the adequacy of the environmental analysis.
- Present reasonable alternatives other than those presented in the NEPA document.
- Cause changes or revisions in the proposal.

After considering substantive public content and revising the EA, the NPS will issue a Finding of No Significant Impact (FONSI) if appropriate. After NEPA documentation is completed, the project will be approved for construction.

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Chapter 1

Purpose and Need

Background

This project addresses issues with the inadequate size and location of the existing West Entrance Station located on Park Boulevard. The location of the existing station causes excessive traffic back-up outside the park that results in considerable wait times for entrance, inefficient fee collection, unsafe working conditions, frustrations for the local community, a negative initial visitor experience, and drivers making unsafe maneuvers to turn around or find alternate routes on county roads.

Joshua Tree National Park (JTNP) is proposing to relocate the West Entrance Fee Station from the park boundary 5 miles outside the town of Joshua Tree, California to a new site located another one-half mile inside the park. The existing entrance station consists of a single fee collection kiosk, small parking area, and comfort station, approximately 250' inside the park boundary. Just outside the park boundary, private homes and driveways have proliferated. With significant increases in visitation, the vehicle queue of visitors entering the park often backs up past the park boundary for one to one and a half miles down Quail Spring Road, blocking driveways, side streets and impeding community circulation and services. By relocating the entrance station further into the park and expanding the number of fee collection kiosks, the vehicle queue length and times would decrease, and the risk of impeding neighbors and communities would be greatly reduced if not eliminated.

Purpose and Need

Purpose of the Project

The purpose of constructing a new West Entrance Fee Station further into the park is to resolve long-standing issues regarding excessively long traffic back-up outside the park boundary. Constructing a new fee station would enable more efficient fee collection and create safer working conditions for park staff in the desert environment.

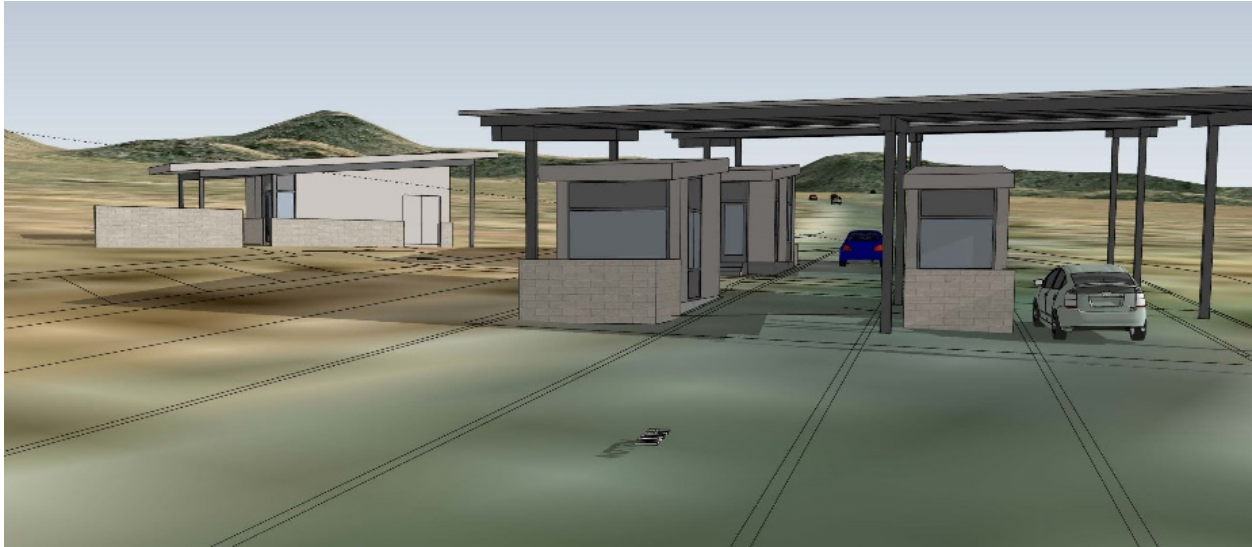


Figure 1. Rendering of West Entrance Fee Station

Need for the Project

The project is necessary to address:

Excessive long traffic back-up outside the park boundary:

- Drivers doing unsafe maneuvers to try and bypass the line, including driving on the wrong side of the road, and driving thru open desert areas.
- Traffic congestion causing blocking of nearby private driveways and county streets outside NPS boundary
- Emergency vehicle access is hampered when there are long lines that form for entry into the park.

Considerable Wait Times for Entrance

The existing West Entrance Fee station is only one kiosk. West Entrance can receive over 55,000 cars per month during the parks busy season. During the first five months of 2021, the traffic count has been over 45,000 cars per month (See Figure 8). Despite efforts to get traffic diverted to other entrance stations, this is the park's most popular entrance. The volume of cars waiting to enter the park causes long waits up to 45 minutes and diminished visitor satisfaction. Cars have been backed up as far as one mile down Quail Springs Road (also known as Park Boulevard), the road leading to the West Entrance Fee Station.

Inefficient Fee Collection

For the volume of cars, the existing West Entrance Fee Station only has one kiosk and window. Although the park is utilizing other methods to collect fees, Recreation Fee

Technicians (RFT) with fee collection tablets, and consistent campaign promotion to buy passes on-line, the configuration of the kiosk is not efficient for fee collection and pass-thru traffic. When lines get too long, for safety and visitor satisfaction reasons, the line is flushed by allowing cars to pass through without paying entrance fees. This causes loss of revenue to the park, creates a pulse of many cars arriving at trailheads at once, and prevents visitors from receiving a park map or other information from a RFT.

Unsafe Working Conditions for RFT Staff

- Recreation Fee Technician (RFT) staff collecting fees are in hot conditions where excessive numbers of idling vehicles backed-up to enter the park cause emissions to build-up around the fee collection area. RFTs work alongside idling vehicles collecting fees with tablets to help expedite entrance into the park.
- The existing fee station is not accessible and does not meet ABAAS standards.
- RFTs entering and exiting the fee station must pass thru active traffic lanes and be subject to moving traffic and inattentive drivers causing safety concerns for the RFT.
- RFTs leaning out of windows and walking lines of traffic are exposed to direct sun many hours a day, increasing the risk sunburn and other health issues from prolonged ultraviolet (UV) rays.

Project Objectives

A successful project would:

- **Address Community Concerns.** The local community wants the issues that impact them to be resolved. During pre-NEPA, the park has received a package of 20 letters from the Monument Manor Neighborhood Association, a neighborhood located directly adjacent to the West Entrance boundary, related to the issues they want resolved. Monument Manor is the neighborhood just outside the West Entrance boundary. The letters expressed support of the location of the new fee collection station and believe that the station is far enough up the road that there would no longer be queueing of cars beyond NPS boundary.
- **Self Sufficient Facility to be Off the Power-Grid and be Constructed to have a Mid-Century Desert Modern Design.** The proposed new entrance fee station is located in an undeveloped desert setting. For setting compatibility, two key design concepts were part of the planning of the building and structures. First, the complex would be off-grid for electrical and data. The complex would be powered by a solar photo-voltaic (PV) array with battery storage and data communication would be via satellite. Second, the building architecture would be uniquely compatible with desert dwellings built mid-century. The complex would be compatible, yet unique, to other mid-century modern buildings associated with the park's historical Mission 66 landscapes and buildings.

- **Keeping Project on Schedule.** The project has support from the local public, especially the community just outside the West Entrance boundary. Because of funding shortfalls due to the COVID pandemic, the project has been delayed which has frustrated the public. To the extent possible, the park wants to keep the project on schedule and be in construction in late summer of 2022.

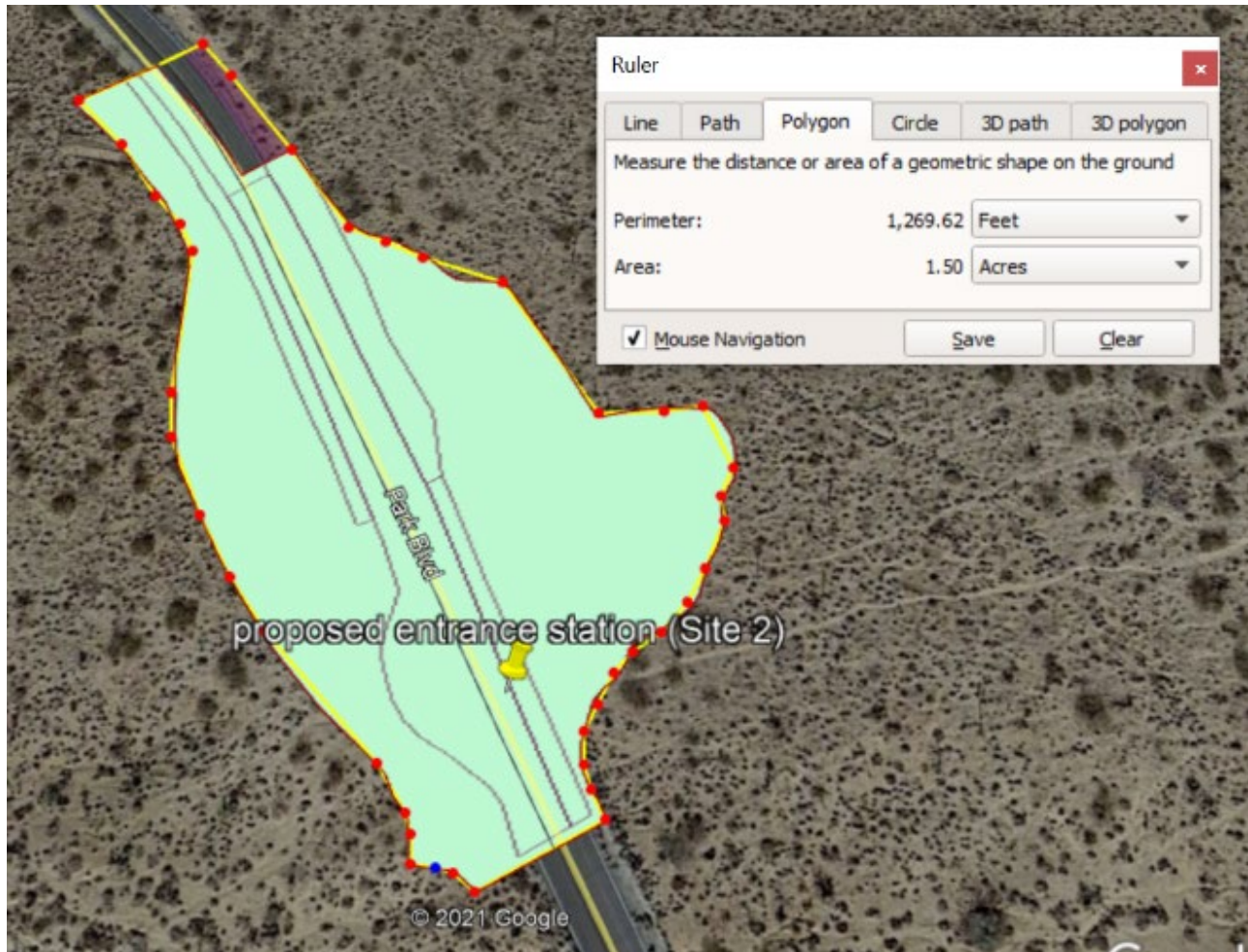


Figure 2. Disturbance Footprint

Civic Engagement (Pre-NEPA) and Internal Scoping

Civic Engagement

The following is a summary of Civic Engagement for this project issues and concerns were raised during pre-NEPA Civic Engagement and internal scoping.

The Superintendent of JTNP David Smith has had frequent communications with the community at large and the local residential community adjacent to the West Entrance

boundary represented by the Monument Manor Neighborhood Association (MMNA). Superintendent Smith has discussed the project on the local 107.7 radio talk show, the Up Close Show, which has a listening reach throughout the Morongo Basin.

JTNP has been including updates to this project in planning newsletters and has a page dedicated to this project on the park's webpage: nps.gov/jotr/getinvolved/westentrance. The messaging to date has provided basic information about purpose and need of the project, and the project timelines for review and comment.

NPS received email queries from Bill Gillman, President of MMNA on 5/27/21 and 7/15/21. JTNP provided a detailed response regarding the schedule of major milestones that are necessary leading up to the construction of the new station.

Superintendent Smith received and reviewed 20 letters from members of the Monument Manor Neighborhood Association (MMNA) on June 21, 2021. The letters expressed support for the relocation of the West Entrance Fee Station and strongly urged the park to move the project to construction. In addition, some letters described the bad behavior of drivers in the community outside the park while the traffic is backed-up. Some of the letters expressed issues with traffic leaving the park. JTNP provided a detailed response to MMNA acknowledging receipt of the letters and reiterating timelines for the project. In addition, the park shared renderings of the new fee collection station.

The NPS (David Smith and Jane Rodgers) and San Bernardino County Field Representative Mark Lundquist met via a virtual meeting with MMNA on 7/16/21. The NPS and County discussed the current state of and future plans for the construction of the new JTNP West Entrance Fee Station and issues in the community. Smith, Rodgers, and Lundquist took questions and discussed community concerns.

Internal Scoping

In reviewing the project the NPS staff identified the following issues and concerns:

Specific Impacts of Concern:

Joshua Trees. ([See Chpt. 3 Vegetation](#)). Clearing of ground to accommodate the new West Entrance Fee Station would cause impacts to 16 Joshua Trees.

Desert Tortoise. ([See Chpt. 3 Wildlife](#))

Cultural Resources. ([See Chpt. 3 Cultural Resources](#))

Agency Coordination and Public Scoping

Agency Coordination

During project planning, the NPS coordinated with the U.S. Fish and Wildlife Service (USFWS) and the California State Historical Preservation Office (SHPO).

USFWS. During coordination with USFWS the NPS provided the agency with a project description and a preliminary impact summary of the project regarding the Desert Tortoise, an Endangered Species listed under the Endangered Species Act (ESA) that has suitable habitat located within the project's action area. In response, the USFWS provided guidance to the NPS on how to meet their obligation under ESA. In December, JTNP provided project information and measures the park would implement to minimize harm to the Desert tortoise to the USFWS for concurrence. JTNP is awaiting concurrence.

SHPO. The NPS coordinated with SHPO using the process outlined under 36 CFR Part 800. Following a 4-Step National Historic Preservation Act (NHPA) process, the NPS has completed three steps of this process (Establish the Undertaking; Identify Historic Properties; Assess Adverse Effects) in coordination with SHPO. Because the project has been determined to have an adverse effect to historic properties and concurrence from SHPO on this determination; the NPS has been coordinating Step 4 (Resolve Adverse Effects) with SHPO. Conclusion of the NHPA Section 106 process would be when the NPS has executed a Memorandum of Agreement (MOA) with SHPO as a signatory to the agreement; and following required public notification and comment on the MOA that would occur as part of the release of this EA process. The draft MOA is included as Appendix D.

Public Scoping and NPS Response

Public Scoping was initiated on August 18, 2021, for a 30-day and public review and comment period. Notification of the start of public scoping was done by: news release; park planning newsletter (<https://conta.cc/3gfxB78>) to approximately 861 people; social media (tweet was sent with links to newsletter and Public PEPC comment site); and posted on JTNP website (<https://www.nps.gov/jotr/getinvolved/westentrance.htm>).

JTNP received comment from 53 individuals in response to our public scoping outreach.

Substantive vs Non-Substantive Comments

Substantive comments are those that:

- question, with reasonable basis, the accuracy of the information provided.
- question, with reasonable basis, the adequacy of the information provided.
- present reasonable alternatives other than those presented; or

- cause changes or revisions in the proposal.

Comments that merely support or oppose this proposal were considered non-substantive comments but have been noted by park management as providing a general sense of how the public is perceiving the project. Most of the commenters noted support for the project, especially those that have experienced the long queues for park entrance, or members of community who are affected by vehicles backing up outside the park boundary. Only a few comments opposed the project.

A summary of the scoping comments and JTNP consideration of these comments is provided in Appendix A.

Impact Topics Retained for Analysis

The suite of impact topics considered in this document is based on existing conditions in the project area and the nature of the Project itself. Specific impact topics were developed to focus discussion and to allow comparison of the environmental consequences of alternatives. These impact topics were identified based on federal law, regulations, executive orders, NPS policies, and staff knowledge of special or vulnerable resources in the project area.

- | | | |
|--------------------|-----------------------------------|----------------------------|
| • Air Quality | • Cultural Resources | • Park Operations |
| • Vegetation | • Visitor Use and Experience; and | • Special Status Species – |
| • Visual Resources | Community Concerns | Desert Tortoise |

Impact Topics Not Considered in Environmental Analysis

Potential impact topics were not considered for further evaluation if:

- They do not exist in the analysis area.
- They would not be affected by the proposal, or the likelihood of impacts are not reasonably expected, and due to there being no effect or not measurable, there would either be no or a low contribution toward trend effects.

Topics dismissed from further consideration include:

Geohazards/Natural Hazards. The high level of seismic activity in the park is a result of the many fault zones in the vicinity, including the San Andreas to the west; however, construction associated with the project, including site grading building construction would be superficial and minimal. Although the proposed action does feature habitable structures that could expose people to geologic risks, it is not expected that the proposed action would have an adverse effect on geologic conditions in the area nor

increase the exposure of people or property to seismic hazards. The probability of damage to proposed project components from other geohazards, including, unstable ground failure, subsidence, liquefaction, expansive soils, or landslides is considered low. Geohazards/natural hazards have therefore been dismissed as an impact topic in this EA.

Soundscapes. Under the proposed action, operation of noise-generating heavy equipment would be required for the following construction activities: excavating the utility trench, dig and install the septic system, and rough grade the new proposed West Entrance site and bypass lane, and construct the kiosks and support building.

The closest congregation of visitors close to the project site would be at the existing West Entrance Fee Station, or in small numbers along pullouts along Park Boulevard. Visitors using these areas could experience construction noise, particularly those that park along the road shoulder upslope of the construction site. The sound of construction equipment would likely be audible, but because visitor use is not heavy in these areas, noise exposure would be felt by few visitors and would be of short duration for their short stay in these areas. Some visitors in other areas of the park may experience elevated noise as heavy equipment or materials are transported to the construction site or transporting soil to the Queen Valley site. This exposure would be of very short duration.

The temporary nature of construction activity would not result in a chronic noise impact on the solitude, tranquility, and natural environment associated with the park. The potential exposure of visitors and wildlife to noise would be limited to the area of construction during work hours. The area of construction is within the footprint of the busiest entrance road in the park; construction noise would be in addition to noise generated by routine traffic. Most visitation occurs on the weekend, and construction on weekends is only allowed with written permission from the NPS. Exposure to noise would be limited to their passage near the activity. Noise from construction activity would be audible during approved construction days Monday through Friday and hours from 7 am to 6 pm.

An enclosed 20 Kw propane generator would occasionally kick-on when loads exceed the batteries available energy. The run time for the generator would depend on several factors: solar production, electrical loads used throughout the day, and battery capacity. The generator would turn on when it must supply power to the buildings and recharge depleted batteries, but because it is enclosed, and would run very infrequently, the sound impacts would mostly be heard by those near the station complex.

The proposed action would include implementation of resource protection measure (See Appendix C - NOI), which would require that all construction motor vehicles and

equipment have mufflers; limit idling of construction vehicles; prohibit the use of unmuffled compression brakes and air horns inside park boundaries; and prohibit construction work on weekends and holiday during high visitation. For these reasons, the effects of noise on visitors have been eliminated from further analysis in this EA.

Lightscape Management. The proposed project would minimize lighting during construction and would require any lighting to be directed downward and be shielded. Permanent lighting of the complex would use light poles and would only illuminate the minimum necessary for park staff to safely navigate the complex at night. Indoor lighting of the support building would be motion activated and follow park lighting protocol with lumens below 400 and color temperature below 2700 kelvin. Outdoors, only fully shielded light fixtures would be used. With implementation of BMPs (See Appendix C – NS), there would be minimal effects to night sky, as such, this topic is not considered further in this document.

Prime and Unique Farmlands. The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland are classifications of U.S. Department of Agriculture's Natural Resources Conservation Service and are defined as soil that produces general crops such as common foods, forage, fiber, and oil seed or specialty crops such as fruits, vegetables, and nuts. The project area does not contain prime or unique farmland. Because there would be no effects on prime and unique farmlands, this topic is not considered further in this document.

Indian Trust Resources. Secretarial Order 3175 requires that any anticipated impacts to Indian Trust Assets from a proposed project or action by Department of the Interior agencies be explicitly addressed in environmental documents. Indian trust assets are owned by Native Americans but held in trust by the United States. Indian trust assets are not present within the park, and are consequently not evaluated further in this EA. However, effects on cultural resources are considered and consultation with tribal governments has occurred.

Environmental Justice. Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not result in changes in the socioeconomic environment of the area, and no impacts on minority or low-income populations or communities are anticipated. Environmental justice was therefore dismissed as an impact topic in this EA.

Climate Change and Sustainability. As part of the application process for projects under the Great American Outdoors Facility Investment Plan, in coordination with NPS Climate Change Response Program, JTNP prepared a climate change hazards report. The report is relevant to summarize climate change hazards for this proposed project (See Appendix B). This proposed new West Entrance Fee Station has been designed with many sustainability and resiliency features that address the climate change hazards at JTNP. The climate change hazards and how the project is addressing these hazards are as follows:

Hotter Temperatures: Heat avoidance features include shade structures over the kiosk stations, and thermal massing of the building envelopes.

Altered Rainfall / Flash Floods: During early design a hydrologic study was done, and it was determined that the original proposed new site of the buildings could be affected if a nearby drainage received a 100-year rain event. The buildings were subsequently relocated outside of this zone.

Renewable Energy Production: The project is designed to be off the electricity energy grid and would have its energy needs met by a stand-alone photovoltaic array. Although a back-up propane generator would be available, it is expected to be used infrequently for cycling the generator, or if there are prolonged days without sufficient sunlight.

Wildfire: With climate change it is expected fire frequency to increase and a prolonged fire season at JTNP. Exacerbating wildfire is the increase abundance of fine annual grasses which vary by the amount of rainfall. The area where the new fee station is located is not considered a high-risk fire area, however disturbance to the site could increase annual grass abundance. Park staff would be revegetating the site and conducting invasive species control around the buildings into the future so that fuel buildup would not threaten the facilities.

Floodplains, Wetlands, and Riparian Habitats. The project action area does not contain any jurisdictional Waters of the U.S. (WOTUS) including wetlands that require U.S. Army Corps of Engineers Clean Water Act permitting.

A hydrology report that analyzed the local watershed containing the project area prepared by the Architect and Engineering consultants indicate that a 100-year stormwater event had the potential to cause flooding near the proposed project area and advised the park to locate facilities away from this potential area of impact. The facilities have been relocated away from this potential area of stormwater impact.

According to FEMA's National Flood Hazard Layer, the proposed action area is mapped as Zone D based on FIRM Panel 0671C8885H dated 8/28/2008. Zone

D is defined as “Undetermined Flood Hazard”. Based on site characteristics, the proposed locations is not within a jurisdictional 100-Yr Flood Zone.

According to USFWS Wetland Mapper viewed on 11/13/20, the proposed action area, and areas immediately adjacent to the action area, are not in jurisdictional wetlands.

Geology Resources and Soil.

Geology.

Powell et. al (2014) describes the geology of JTNP as geologically diverse terrain with varied geologic evolution that spans nearly two billion years of Earth history. The

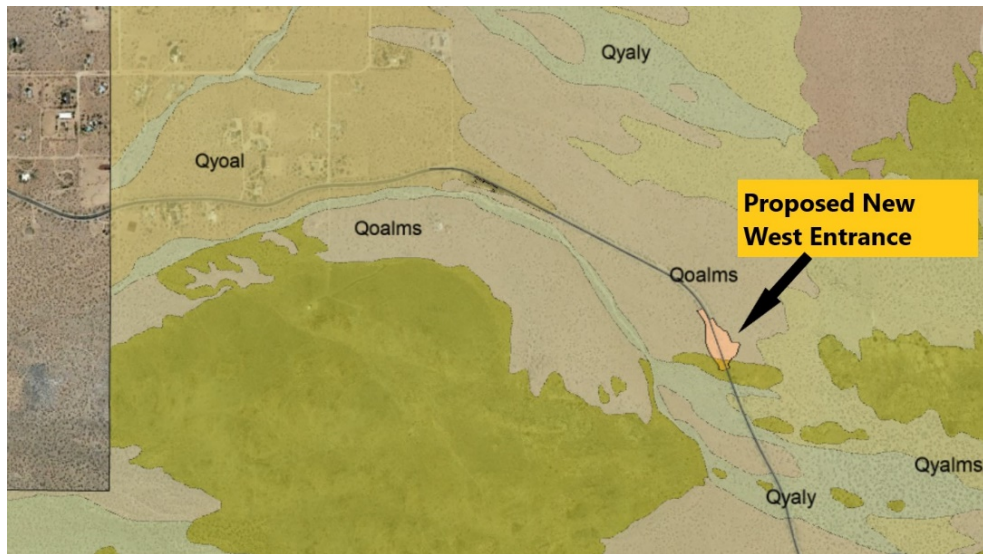


Figure 3. Geology Unit Type

specific geologic map unit where the new West Entrance Fee Station is to be located is in geologic mapping unit “Qoalms” described as, “Old alluvium, light-sourced pediment apron, middle unit, sheetwash ash deposits from the Pleistocene Epoch (See Figure 3). This geologic unit is ubiquitous throughout the park and disturbing approximately 2 acres of this geology unit is insignificant to the overall geology unit.

Soils. Based on information from JTNP’s Soil Survey (USDA, et. al, 2013), the proposed new West Entrance Fee station is in soil map unit 3677 (Morongo Sand) a ubiquitous unit located throughout the park. It is described as a well-drained soil on alluvial fans soil made up mostly of sand on slopes less than 4%. The proposed action would involve excavation, trenching, and horizontal directional drilling (HDD) activities that would disturb a maximum of 2 acres of land. While most areas are previously disturbed road shoulder, some areas of relatively undisturbed road shoulder and native soils would be disturbed. These activities could affect the soils’ ability to sustain biota, water quality, and hydrology. Topsoil is being saved for site rehabilitation and excess topsoil not used for rehabilitation would be used for other park future uses.

Loss of soil / Soil Erosion. The project would balance the cut and fill by using excess cut fill on the east side of the road and use it to construct the construction bypass lane on the west side of the road. No excess rough grade fill (fill below 3") is expected to be hauled off site. The top 3" (topsoil) would be conserved, hauled off site for storage, and be brought back to the site post construction to be used to rehabilitate the disturbed footprint. Overall, there would be no net loss of soil (off haul out of the park). Soil erosion from rain events and wind is likely during the next couple of years after disturbance. Topsoil removed during clearing of the site would be returned to the site and vertical mulch and native plantings would be used for soil stabilization. Topsoil erosion would be abated but not eliminated; however, this erosion would not be substantial and only slightly more than pre-disturbed conditions.

Source: <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Soil Map Unit 3677 - Morongo sand, 2-4 %



Figure 4. Soil Map Unit 3677 Morongo Sand

To minimize and control erosion, a stormwater Pollution Prevention Plan (SWPPP) would be prepared that would have actions to address sediment control, erosion control, and other pollutants (See Appendix C – SM).

Socioeconomics. Construction activities and costs associated with the proposed action would provide a temporary but small stimulus to the local and regional economy. Wages, overhead expenses, material costs, and profits would last only as long as the construction period, anticipated to be no more than 12 months; consequently, impacts

on local communities and socioeconomic resources would be temporary. No travel delays for visitors traveling to or leaving the park are anticipated. Impacts would be negligible; accordingly, socioeconomic impacts were dismissed as an impact topic in this EA.

Wilderness. Construction activities associated with the proposed action would not take place within designated wilderness. Construction activities would not directly encroach upon any of the designated wilderness areas within the park. Sounds and noise from construction activities would not be heard in adjacent wilderness; however, the sounds and noise would be temporary and negligible. Consequently, wilderness was dismissed as an impact topic in this EA.

Traffic and Transportation. The proposed project would not increase the number of cars entering the West Entrance Fee Station, rather it is intended to improve traffic conditions and reduce wait times. Specifically, the project would have minimal to no change or adverse effects for the following traffic parameters.

Traffic. The project is not expected to increase the number of vehicles entering through West Entrance Fee Station. Generally, even with the issue of long wait times, overall number of cars entering the park through West Entrance has been increasing. Visitation has more than doubled in five years with nearly 20 million people living within a three-hour drive and the local counties expecting to grow by 25% over the next 10+ years. Vehicle traffic into the park is expected to keep increasing regardless of whether the West Entrance Fee Station is constructed. Constructing the new West Entrance Fee Station further into the park with more travel lanes and fee collection kiosks is expected to improve the circulation and wait times for vehicles to enter the park. This is addressed in detail in the impact topic "Visitor Satisfaction".

Traffic Circulation. Traffic circulation, for the purposes of this discussion is whether the project changes access or connections to adjacent roadways. With the construction of the new West Entrance Fee Station, access would be improved. This is discussed in the impact topic "Visitor Satisfaction". The project would not have an impact on adjacent roadways within the park. The project would improve pedestrian access at the existing West Entrance Fee Station by enhancing parking and constructing a new pedestrian path to the entrance sign from the enhanced parking lot. There would be no change to bicycle circulation.

Vehicle Miles Traveled. The proposed project would result in a temporary increase in vehicle trips during construction. Construction worker trips would occur in the morning and late afternoon hours going to and from the construction site. Truck trips associated with materials and equipment deliveries to each

project site would likely be distributed throughout the workday. Construction trips are assumed to come from the local area (Morongo Basin). Because this project is not considered a large construction project, the predicted number of daily trips to the work site by construction workers is not expected to exceed 10 trips per day during normal construction but up to 30 trips per day during project start-up. Likewise, material hauling trips would likely not exceed 10 trips per day during normal construction but up to 30 trips per day during start-up. Once constructed, the project would generate a small number (<15 trips) of permanent vehicle trips by park staff working at the new entrance station. Carpooling would be encouraged by JTNP.

Soil hauling trips. During project startup (rough grading of site) the project would salvage 3" of topsoil (~675 cy) from the site and haul it to the Queen Valley Administrative Site (QVAS) and return ~ 260 cy of topsoil back to the site for site rehabilitation. The distance is approximately 13.2 miles one-way. This would result in a maximum of 62 total trips (15 cy per trip) over several days to/from the QVAS. Depending on the area of contractor laydown space that is needed, topsoil may be stored on site which would reduce the number of trips by 17. Soil below the 3" layer would be used as fill for bypass lane and not require hauling offsite. Soil hauling trips to/from the construction site is minimal in comparison to the overall number of car trips along this road corridor which can be up to 5,000 per day during peak season.

Roadway Geometric Design. There would be two geometric design changes to Park Boulevard, the roadway leading to the new West Entrance Fee station. First design change would occur at the existing West Entrance Fee station where the fee kiosk would be removed and the removal of the striping that leads to the kiosk lanes. This would allow for free-flowing traffic going in/out of the park. The second change would be at the new West Entrance site where there would be three inbound lanes leading into the park, two leading to the fee kiosks, and one lane bypass. This bypass would allow for oversized vehicles to move around the kiosk stations and their overhead shade structures.

Emergency Access. Park Boulevard, the roadway leading into the park, is one lane in each direction. When car traffic is backed up outside of the park boundary, emergency access into the park is hampered. With the removal of the kiosk allowing free flowing traffic there would no longer be a back-up of cars outside the park and unhindered emergency vehicle access. And, with the addition of three lanes of traffic going thru the new West Entrance Fee Station, including a bypass lane, emergency access would be unhindered there as well.

Wildlife. JTNP is in a transition zone between two major biotic communities—the Mojave Desert and Colorado Desert regions. The diverse vegetation communities in JTNP support a variety of wildlife species. NPS-managed lands provide havens for wildlife because they are more protected and generally less developed than privately owned lands. Approximately 270 bird species either nest or migrate through the park. The Park is also home to 52 species of mammals. The desert tortoise, a federally threatened species, also inhabits the park and is discussed in the “[Special Status Species](#)” section. Wildlife habitat in the project area has been generally free from land disturbance but is close to an active roadway that causes frequent consistent noise that disrupts wildlife behavior and occasional roadkill. Wildlife use is likely transitory habitat for mobile wildlife species.

Construction activities would result in approximately 1.5 acres of disturbance to vegetation that provides habitat for birds, small mammals, invertebrates, and reptiles. However, because the habitat is located along a roadside, it provides relatively low-quality habitat for mobile wildlife species because of the frequent traffic activity. Impacts include disruption of behavior during construction activities. Human presence and construction noise would temporarily disturb and could displace resident wildlife; however, the duration of the disturbance is likely to be very short. Construction activities could also result in incidental death of unseen wildlife along roads, such as beneath crushed vegetation, in undetected burrows, or by entrapment of wildlife in pits or trenches. Construction activities would be confined to the smallest area necessary to complete the work, and areas of temporarily disturbed land would be restored to existing topography following construction to minimize impacts. Existing Joshua trees would be avoided during construction. Native shrubs that cannot be avoided would be removed and replanted to serve as vertical mulch and cover for animals. The proposed action would have local short-term effects on wildlife from activities associated with the construction activities and general noise and disturbance above the levels currently present. To minimize impacts to wildlife, a wildlife monitor would conduct pre-construction surveys to relocate if possible, wildlife species that are in the construction area, and would be present during major ground disturbing activities (See Appendix C – W/NB). Changes in traffic flow (slowing traffic) have the potential long-term benefits of reduced roadkill in the immediate area.

Threatened and Endangered Species (T&E). Using U.S. Fish and Wildlife Service’s IPaC resource database, JTNP obtained a list of T&E species that are known or expected to be on or near the project area. The list included species that occur outside of the project area, but that could potentially be adversely affected by activities in the project area. There were three species included on the list; Desert Tortoise (*Gopherus agassizii*), and two plant species, Parish’s Daisy (*Erigeron parishii*) and Triple-ribbed

Milk-vetch (*Astragalus tricarlinatus*). No critical habitat exists at the project location. JTNP biologists have determined that the two plant species are not present on the site and the site lacks habitat conditions for these species. The impacts to Desert Tortoise are described in the Wildlife impact topic section.

Chapter Two

Alternatives

Introduction

This chapter describes the two alternatives analyzed in this document: Alternative A – No Action/Current Management and Alternative B – Proposed Action/Preferred Alternative. These alternatives were developed through evaluation of comments provided by individuals, organizations, governmental agencies, and the parks' interdisciplinary management staffs.

Alternatives

No Action / Continuation of Current Conditions Alternative

No Action. The No Action alternative for this EA means there would be no project, park fee operations would continue to be collected at the existing fee station. For this No Action alternative, the no action alternative would be the same as the baseline condition in which the other two action alternatives would be compared.

Proposed Action / Preferred Alternative

The proposed action and preferred alternative are located approximately 2,550 linear feet east of the Park boundary. While the location is just around a curve in the road, the slope of the site and lack of rocks, trees or other obstructions still allows for high visibility in both directions. This location allows for more cars to queue.

The proposed action has two locations where project activities would take place (See Figure 6):

- Existing West Entrance Fee Station Location: 34.093484, -116.264885
- New West Entrance Location: 34.089806, -116.258905

Summary Description of Actions

Existing West Entrance Fee Station

- Demolish the existing single fee collection kiosk at the park's West Entrance.
- Grind and remove striping that directs traffic to/away from fee kiosk
- Change area of vehicle parking and at the existing entrance area:
 - Remove parking on the entrance side (west side) of the comfort station

- Add an additional 4 parking spaces to the 9 existing parking spots on the east side of comfort station for a total of 13 spaces (2 accessible).
 - Add 1,900 sf asphalt pad pullout for oversized vehicles near the comfort station exit.
- Accessibility Upgrades:
 - Construct a new accessible path to the park entrance sign.
 - Upgrade, lengthen, and make accessible the sidewalk along front perimeter of parking area to the comfort station.
 - Create an accessible entryway into the comfort station.
- Amenities:
 - Create a pad directly adjacent on east side of comfort station for visitor gathering that would provide visitor information such as wayfinding or other relevant information for visitors first entrance into the park.
 - Provide a bike rack for bike parking.
- Remove and replace signage.
- Stormwater control.

New West Entrance Fee Station Location

Site Clearing: Prepare the site for construction.

- Clearing and Grubbing:
 - Strip, salvage, and store topsoil; Topsoil to be brought back after site construction to rehabilitate disturbed footprint.
 - Remove, protect, and replant 16 Joshua trees that are within the project area (see description below).
 - Other brush to be salvaged within the project area. Brush to be stored and reused as vertical mulch for restoring disturbed footprint.
- Remove existing asphalt and roadside swales
- Earthwork / Grading of Site approximately 24,500 sf (Max disturbance 1.5 acres)
- Widen the main park road to 5 vehicle lanes, including inbound and outbound bypass lanes



Figure 5. Proposed Action Locations

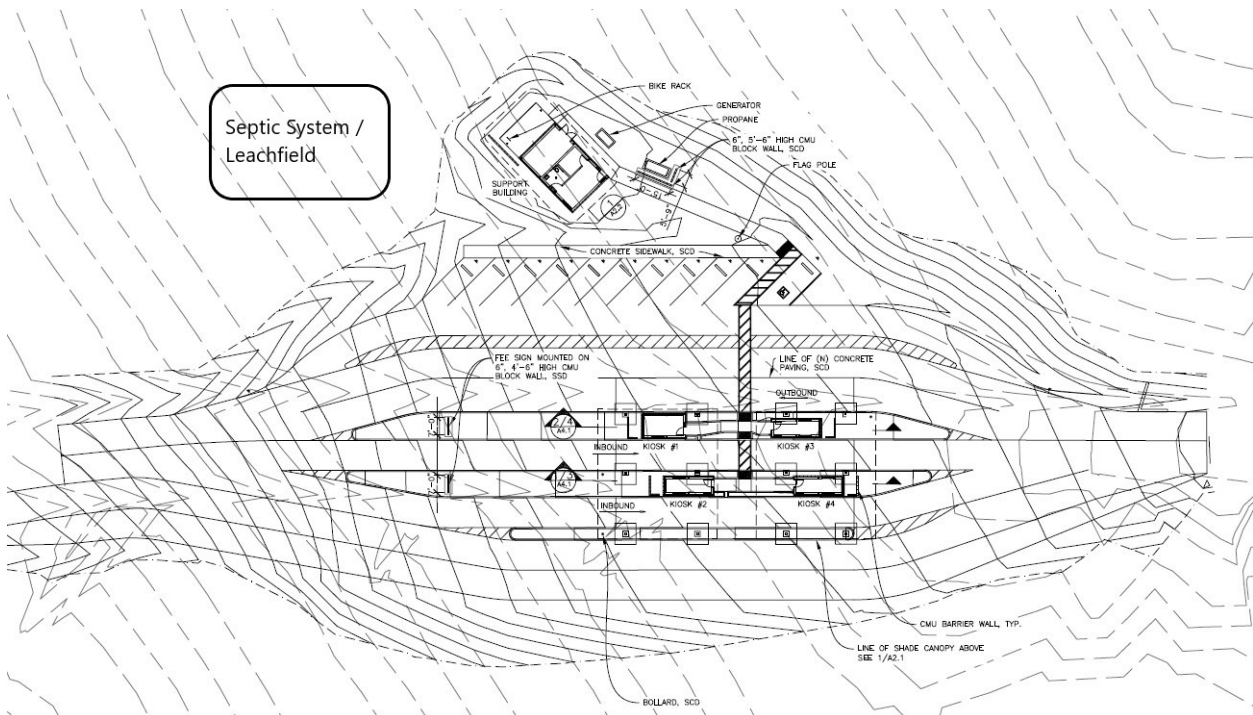


Figure 6. New West Entrance Site Plan

Trenching/Horizontal Drilling. Water utility trenching from existing West Entrance Fee Station to the new station.

- Extend waterline from existing West Entrance comfort station to the new proposed fee station. A trench would be excavated for water line and empty conduit for future use. It is possible that horizontal pneumatic drilling would be done for the utility lines; however, this would not be known until a contractor is selected. Six pull boxes would be placed evenly between existing station and new station along the road utility corridor.

New Building and Structures Construction

- Construct four new tandem (two per island, slab on grade) fee collection kiosks with curbed islands and connecting walkways.
- Construct separate staff support building/breakroom and materials storage room building with extended roofline (~630 sf); and adjacent staff parking spaces (9).
- Construct two large steel-framed shade shelters over fee collection kiosks to reduce sun directly shining on service windows and fee collectors. The shade structures would be used for placement of the PV panels

Construct On-site Wastewater System.

- Septic tank and drain field with two sets of distribution lines to be connected to the staff support building.

Joshua Tree Relocation

The Joshua tree is a State of California Candidate Species for protection under the California Endangered Species Act (ESA). Although the Joshua tree does not have any federal protection under federal ESA, the health and viability of Joshua Trees is important to the park. As such, the park is committed to replanting these trees to adjacent areas, or back within the construction footprint after final grading has occurred. Joshua trees would be salvaged and relocated from the project area prior to ground disturbing activities. Salvaged Joshua trees would either be immediately transplanted to a new location near the proposed entrance station or boxed and stored until transplanting could occur.

Salvage Actions:

- Joshua trees shall be watered one or more times prior to salvage to assure trees are not water-stressed at time of salvage and that soil of the harvested root ball is moist to promote it remaining intact.

- The hole to receive a salvaged tree would be watered prior to placement of the salvaged tree.
- Salvaged trees shall be watered immediately or as soon as practically possible after placement.
- Salvaged and transplanted Joshua Trees shall be periodically watered by filling an earthen ring reservoir around each tree with supplemental water.
- Supplemental watering shall occur once every two weeks in the month following transplanting and once a month thereafter for a period of one year.
- Frequency of supplemental watering would be adjusted based on monitoring of salvaged trees.
- Frequency and quantity of supplemental water would be adjusted based on precipitation events if these events result in moist soil at a depth of 8 inches.

Disturbed Site Rehabilitation

- The area disturbed adjacent to the developed structures would be restored by redistributing salvaged topsoil, native vegetation planting including Joshua tree replanting, and random vertical mulch distribution. Vegetation used for site rehabilitation would include plant species found in the *Yucca brevifolia/Larrea tridentata* plant association in a pattern and density that mimics the surrounding undisturbed area. Salvaged plants and propagated plants would be used. Vertical mulch would be placed randomly throughout the site to create microhabitat for establishment of native vegetation, wildlife habitat, and soil stabilization. Temporary irrigation may be used pending ability to hand water. Irrigation design would mitigate potential for wildlife to chew or damage the system.

Schedule

The project would be done in phases to ensure collection operations are not interrupted and vehicle traffic would not be impeded by construction. The order and duration of construction phasing would generally occur in the following order:

- New site clearing and grading and construction of bypass lane (~1 month).
- Trenching of utility lines from existing to new station (~1 month).
- Construction of support building, fee kiosk stations, and shade structures (8-12 months).
- Once fully operational, removal of existing kiosk station and restriping (~1 month).
- Existing pullout and comfort station rehabilitation would occur within three years depending on funding availability (3 months).

The existing pay station kiosk would be removed along with all road markings, signs, and striping. This would only be done after the new fee station is completely

operational. Visitors would still be able to access the restroom and parking that currently exist at the site. Depending on funding availability, there would be striping, and parking changes done at the existing fee station parking area. These improvements would be done after the existing fee kiosk has been removed and the new fee station is operational.

Staging and Access

Park Boulevard would remain open during construction and traffic would not be delayed during construction, except for a short period of time while the bypass lanes are being constructed. The two-way by-pass lane would allow vehicles to move around the construction area where the new fee station is being constructed. Construction staging would be wholly encompassed within the construction footprint of the new station (see Figure 1).

The existing fee kiosk station would remain fully operational until the new station is completed and fully functional at which time the operations would be relocated to the new fee station. The new West Entrance Fee Station would have two lanes leading inbound through the two island of 4-kiosks and an additional lane that bypasses the fee kiosks. Kiosk windows would open depending on how much traffic is entering the park, with up to four kiosk windows available to open at the park's busiest times and management of the bypass lane for efficient pass thru for pass holders.

Impact Reduction Measures (Best Management Practices)

See Appendix C.

Alternatives Considered and Dismissed

Alternate Site Location

Two potential sites for the new entrance station were identified during early feasibility planning. The alternate site (Site1 as shown in Figure 7) identified during initial planning identified a site approximately 1,525 ft from the park boundary, approximately 1,000 feet closer to the boundary than the existing site. Using Value Analysis, the alternate site was eliminated from consideration for the following reasons:

- The alternate site was directly in line of sight with the existing entrance signs, and in view of the historic park entrance monument.
- Given the car queue lengths experienced at the existing station, there was still a slight probability that queue lines

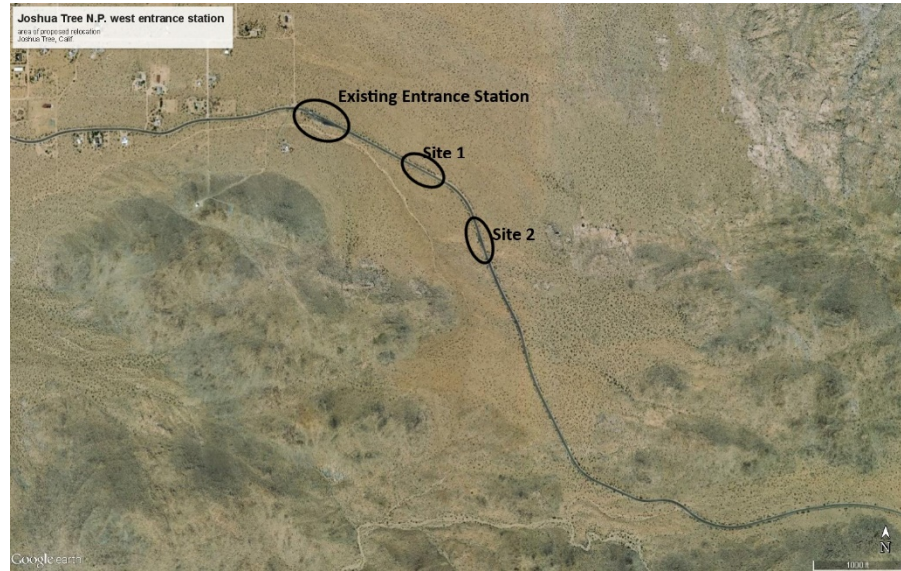


Figure 7. Alternative Site Considered and Dismissed

- could reach the park boundary from the alternate site. The site selected would have an additional 1,000 feet of vehicle queueing.
- The alternate site had a slight reduction in the hours of sunlight on the service window due to its orientation.
- To a large degree, this alternative was not able to fully resolve the purpose and need for the project, namely resolving the back-up of vehicles into the community beyond the park's boundary.

Chapter Three

Affected Environment and Environmental Consequences

Methodology

The Affected Environment section for each resource topic describes existing conditions as they pertain to that resource. This description is followed by an Environmental Consequences section, which describes potential impacts from the two alternatives considered. For each alternative, the Environmental Consequences section describes the adverse/beneficial impacts to the resource from the actions proposed under the alternatives and reaches conclusions regarding impacts. A separate section describes the trend impacts.

General definitions are as follows:

- Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource towards a desired condition.
- Adverse: A change that moves the resources away from a desired condition or detracts from its appearance or condition.

Trend Impacts

Trend effects are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The Park has not identified other present and reasonably foreseeable actions that would adversely effect resources affected by constructing a new fee station.

Speculatively, actions that could affect the same resources as the construction of a new West Entrance Fee Station could include similar entrance station improvements within the park or other projects that would affect traffic and circulation near the West Entrance Fee Station, however, at this time there are no such construction projects that have been funded or have existing decisions for implementation. One construction project recently approved for implementation is the Barker Dam Parking Lot expansion project. This project has phased implementation and could be implementing at the same time as the construction of West Entrance. Most of this project is being done with NPS staff and would only use contractors for paving. Paving would be done in 1-2 days and construction related traffic for this short duration would not add to emissions or increased construction traffic of any significance. Neither of these projects would increase traffic coming to the park.

Affected Environmental and Environmental Consequences

Vegetation

Affected Environment

The project is located in a single vegetation association, within the *Yucca brevifolia*/*Larrea tridentata* (Joshua tree/Creosote bush) plant association. This plant association forms an open woodland with *Y. brevifolia* and *L. tridentata* aspect dominants. Additional characteristic species common to this association include *Acamptopappus sphaerocephalus*, *Ambrosia salsola*, *Cylindropuntia echinocarpa*, *Ephedra nevadensis*, *Eriogonum fasciculatum*, *Krameria grayi*, *Scutellaria Mexicana*, *Yucca schidigera* and *Pleuraphis rigida*. Total vegetation cover in this association generally ranges between 16 – 26%. Tree cover averages 0 – 2%, shrub cover 12 – 40%, and herbaceous cover 0 – 48%.

The *Yucca brevifolia*/*Larrea tridentata* plant association occurs between elevations of 3300 and 4600 feet on toeslopes and washes. Slopes are gentle at 2-6 degrees. Soil textures are coarse sand to fine sandy clay loams formed in sandy alluvium and granitic parent materials.

The work identified at the existing West Entrance Fee Station would not disturb any additional habitat than the area that is currently developed

Joshua trees (*Yucca brevifolia*). Sixteen Joshua trees (*Y. brevifolia*), ranging in height from 8 inches to 15 feet, presently occur within the area of potential impact of the proposed action. Clearing of ground to accommodate the new West Entrance Fee Station would cause impacts to 16 Joshua Trees. The Joshua tree is a State of California Candidate Species for protection under the California Endangered Species Act (CESA). Although the Joshua tree does not have any federal protection under federal ESA, the health and viability of Joshua Trees is important to the park. As such, the park is committed to replanting these trees to adjacent areas, or back within the construction footprint after final grading has occurred.

Federal Endangered Plant Species. No federally listed threatened or endangered plant species are known to occur with the area of potential impact. No locally rare plant species or plant species of concern are known to occur within the area of potential impact.

Environmental Consequences

Alternative A – No Action

Under the No Action alternative, the proposed new West Entrance Fee Station would not be constructed, and no vegetation or ground disturbance would occur at the location of the proposed entrance station.

The existing West Entrance station is developed and disturbance to vegetation happens infrequently by park visitors who travel beyond the developed footprint. Under continuation of existing management, disturbance of vegetation at the existing West Entrance Fee Station by Park visitors is unlikely to increase under the No Action alternative as traffic and pedestrian access is confined to the paved road (Park Boulevard) or developed parking and comfort station area.

Alternative B – Preferred Alternative

The proposed construction of a new West Entrance Fee Station would disturb approximately 1.45 acres; sixteen Joshua trees occur in this area. All vegetation would be removed from this area to facilitate construction of the proposed West Entrance Fee Station.

The Joshua tree is the iconic species in Joshua Tree National Park and is a candidate species for listing under the California Endangered Species Act (CAESA). Clearing of ground to accommodate the new West Entrance Fee Station would cause impacts to 16 Joshua Trees. Salvaging and transplanting the trees outside of the construction area could mitigate such an outcome.

Under the Preferred Action alternative, the proposed new West Entrance Fee Station would be constructed and would require the removal of all vegetation from the 1.5-acre project site. Approximately 1.5 acres of the *Yucca brevifolia/Larrea tridentata* plant association would be permanently altered or destroyed and replaced by paved road, sidewalks, and buildings. In this plant association, plant community canopy cover generally ranges between 16% and 26%.

Any vegetation that was not salvaged from the project area would be killed and removed through site preparation and blading of the soil surface. Areas of soil disturbed during project construction that were not covered by permanent structures (pavement, sidewalks, and buildings) would be restored using native plants typical of the *Yucca brevifolia/Larrea tridentata* plant association to mimic adjacent undisturbed native vegetation.

Sixteen Joshua trees within the project area would be salvaged and transplanted to locations near to but outside of the project site.

Salvaged Joshua trees would receive supplemental water prior to the salvage operation to assure trees are not water-stressed at the time of harvest. Transplanted Joshua trees would receive periodic supplemental watering to provide soil moisture and promote root growth and survival. However, survival of salvaged and transplanted Joshua trees decreases with increasing tree size and maturity/age. It is unlikely that all salvaged Joshua trees would survive transplanting. Survivorship of salvaged Joshua trees in Joshua Tree National Park has ranged between 50 and 89%. Additionally, survival of transplanted Joshua trees increases in years with above normal precipitation amounts as soil moisture is more frequently available. Present (December 2021) predictions are for current drought conditions to persist in the southwestern United States, including southern California and Joshua Tree National Park. Survival of transplanted Joshua trees would likely be heavily if not entirely dependent on periodic supplemental watering to provide soil moisture; this dependence would continue for multiple years (two or more) or until the drought ended. Interruption of supplemental watering would increase mortality of salvaged and transplanted Joshua trees.

Soil disturbance associated with site preparation and construction coupled with removal of existing vegetation would create opportunities for non-native species, such as red brome, to invade disturbed areas not covered by pavement or concrete. However, the proposed action includes a mitigation of monitoring for and treating invasive non-native plants for three years following project implementation. Implementation of BMPs (Appendix C – VM) would minimize impacts to vegetation.

Special-Status Species – Desert Tortoise

Affected Environment

Special-status species comprise plants and animals listed as threatened or endangered or identified as candidates for listing under the ESA. Additionally, many bird species are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (Eagle Act).

Using U.S. Fish and Wildlife Service's IPaC resource database, JTNP obtained a list of T&E species that are known or expected to be on or near the project area. The list included species that occur outside of the project area, but that could potentially be adversely affected by activities in the project area. There were three species included on the list: Desert Tortoise (*Gopherus agassizii*), and two plant species, Parish's Daisy (*Erigeron parishii*) and Triple-ribbed Milk-vetch (*Astragalus tricarinatus*). No critical habitat exists at the project location. JTNP biologists have determined that the two

plant species are not present on the site and the site lacks habitat conditions for these species. The impacts to desert tortoise are described below.

Desert Tortoise

The desert tortoise was federally listed by the USFWS in April 1990 (USFWS 1990) as a threatened species (50 CFR 17.11 – 17.12). The state of California listed the desert tortoise as threatened in 1989. The tortoise inhabits topographically flat areas dominated by gravelly soils and creosote scrub (NPS 2003). Lands surrounding JTNP are designated critical habitat for the desert tortoise under the 1994 Desert Tortoise Recovery Plan (Section II.B and E) (USFWS 1994a). JTNP is not included as critical habitat because the park Special Status Species adequately protects populations of the tortoise (59 CFR 5820). The USFWS completed a final recovery plan for the desert tortoise in 1994 and released a revised recovery plan in May 2011 (USFWS 2011).

Desert tortoises inhabit rocky slopes, alluvial fans, and mountain slopes containing soil that is loose enough for burrow excavation and solid enough to prevent burrows from collapsing (USFWS 1994b). Desert tortoises spend much of their lives in burrows and are typically active in the Mojave Desert from mid- to late-March to about November, depending on the weather (USFWS 2010). Desert tortoises hibernate in deeper dens during winter months and use shorter, shallower burrows during the warm season (USFWS 2010). In southeastern California, desert tortoises range from below sea level to nearly 7,000 feet above sea level and frequent areas with high annual bloom potential with diverse vegetation (USFWS 2010). Tortoise activity is expected to occasionally occur in the project area, as tortoise activity has been detected in adjacent surrounding areas in previous years in similar habitat.

Programmatic Biological Opinion

On September 24, 2021, the USFWS completed a Programmatic Biological Opinion (PBO) for the activities in Joshua Tree National Park affecting desert tortoise. The activities herein fall within the purview of this PBO.

Environmental Consequences

Alternative A – No Action

Under the No Action alternative, the proposed new West Entrance Fee Station would not be constructed, and no ground disturbance would occur at the location of the proposed entrance station.

There would be no new impacts on the desert tortoise under the no action alternative. Under continuation of existing management, human activity (e.g., traffic and human presence) in the project area would continue to affect the quality of desert tortoise habitat in and near the action areas.

Alternative B – Preferred Alternative

The proposed construction of a new West Entrance Fee Station would create a loss and degradation of tortoise habitat of approximately 1.45 acres.

As part of the project, any tortoises found during the pre-construction survey would be moved from the construction area and tortoise fencing would be placed to prevent tortoises from entering the active construction area. During commencement of these activities, tortoises could be harmed or harassed.

Despite the tortoise exclusion fencing, there is potential for a tortoise to enter the construction area and be harassed or killed by construction equipment. Also, because the area would be occupied by construction works for a short period of time for up to 12 months and a long-term presence of park staff who operate the fee kiosk station, the presence of humans attracts tortoise predators such as common ravens and coyotes. Predator presence would offer more of a chance opportunity for them to predate on tortoises in and around the affected area.

With the implementation of best management practices described in Appendix C, the potential for harm or harassment of desert tortoises is lessened. For instance, authorized biologists and monitors would conduct clearance surveys to remove desert tortoises from work areas prior to the onset of ground-disturbing activities. Also, if a tortoise needs to be handled, at least one authorized biologist must have sufficient training and experience to move a desert tortoise safely according to USFWS published guidance. Other required actions which would be implemented can be found in Appendix C.

For this project, JTNP would be utilizing an approved Biological Opinion issued by the U.S. Fish and Wildlife Service (9/24/21) that provides Incidental Take of Desert Tortoise provided that JTNP implement protective measures outlined in the Programmatic Biological Opinion. These protective measures would minimize the take of desert tortoises and are described in Appendix C (Best Management Practices). These protective measures would be imposed on the Contractor doing the construction work as part of the contract requirements.

Cultural Resources

Affected Environment

Regulatory Context

The National Historic Preservation Act (NHPA) requires JTNP to assess potential effects to historic properties as a result of an undertaking. The Proposed Project is an

undertaking as defined in 36 Code of Federal Regulations (CFR) §800.16(y) with the potential to cause effects on historic properties (36 CFR §800.3(a)). As such, JTNP has consulted with the State Historic Preservation Officer (SHPO) and the park's 15 traditionally associated Native American communities in compliance with Section 106 of the NHPA to consider the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP).

Area of Potential Effects

The Area of Potential Effects (APE) encompasses the area where ground disturbance would occur during implementation of the proposed Project, including access and staging areas. The APE for this project is the first one (1) mile of Park Boulevard within the JTNP entrance, with a 100-meter buffer as the construction area is not anticipated to extend more than 50 meters on either side of the road. This area extends well beyond the proposed footprints of the two potential locations to consider the larger context of the site, including historic districts, viewsheds and potential traditional landscapes. Due to digging and trenching that would take place as part of the proposed action, a vertical APE for the new entrance station was established at 15 feet and at 4 feet at the existing West Entrance Fee Station.

Historic Resource Survey Results of the APE

JTNP cultural resource staff completed a pedestrian survey of the APE to identify surface archeological resources and completed archeological testing to identify subsurface archeological deposits within the footprint of the planned fee complex. No archeological sites were found during either effort. Fifteen individual artifacts were identified during pedestrian survey within the 50-meter construction area. During subsurface testing, two individual artifacts were located; these two artifacts were collected and cataloged by park staff. JTNP determined that none of the artifacts were eligible for inclusion in the NRHP and the California State Historic Preservation Officer (SHPO) concurred on 01/14/2021.

Ethnographic Resources

JTNP staff completed site visits with each traditionally associated Native American community who requested one during 2019 and 2020. No ethnographic resources were identified in the APE during or following these visits.

Cultural Landscapes

In 2017, NPS-JTNP commissioned a Determination of Eligibility (DOE) on the park's Mission 66 entrances, including the West Entrance, from Hennebery Eddy Architects to evaluate them as historic districts. The resulting report determined that the West, North,

and South Entrances are all eligible for listing in the NRHP under the Mission 66 Multiple Property Documentation Form. The DOE was transmitted to the SHPO in July of 2018 and concurred upon as eligible for listing in the National Register on 8/31/2018.

Environmental Consequences

Alternative A – No Action

Under the No Action alternative, the proposed new West Entrance Fee Station would not be constructed, and no cultural resource impacts would occur at the location of the proposed entrance station.

Under continuation of existing management, new impacts to cultural resources at the existing West Entrance Fee Station by Park visitors is unlikely under the No Action alternative as traffic and pedestrian access is confined to the paved road (Park Boulevard) or developed parking and comfort station area. Pedestrian access to the entrance sign would continue to occur; however, this does not impact this contributing element of the historic district.

Alternative B – Preferred Alternative

Archeological Resources (Pre-historic)

Thorough pedestrian survey and subsurface testing identified no archeological sites and no artifacts that qualify for inclusion in the NRHP. Because of these identification efforts, it is unlikely that previously unidentified artifacts would be disturbed due to ground disturbance associated with the proposed action. There would be no impact to archeological resources.

Ethnographic Resources

No ethnographic resources are located in the APE. There would no impact to ethnographic resources.

Cultural Landscapes

The site has been determined eligible for listing in the National Register. According to 36 CFR 800.5(a)(1), an adverse effect is found when an undertaking alters any of the characteristics of a historic property which make it eligible for inclusion on the National Register. It has been determined the cumulative effects of the undertaking would diminish the integrity of the historic district's setting, design, and feeling, characteristics which contribute to the district's qualification for inclusion in the National Register. The district's integrity of materials, association, workmanship, and location would remain intact.

Aspects of Integrity

Setting. The setting of the West Entrance has already been affected by nearby private residential development, which has proliferated since the construction of the monuments in 1964 and now borders the park itself. The removal of the non-contributing fee booth, constructed in 1997, improves the immediate setting of the West Entrance monuments, but overall, the relatively significant size and scale of the new entrance complex, which may be visible from nearly every point within the historic district, would be an adverse effect to the setting.

Design and Feeling. The construction of the new entrance complex would have adverse effects to the integrity of design and feeling for the Mission 66 historic district. Design is defined as the combination of elements that create the form, plan, space, structure, and style of a property, while feeling is defined as a property's expression of the aesthetic or historic sense of a particular period of time (National Register Bulletin 36). Despite design efforts to reduce impacts, the form, plan, and space of the historic entrance would all be altered under the proposed Undertaking, predominately in the reorganization of the entrance sequence and layout, in the expansion of the roadway at the new complex, and in the increased scale of development. Additionally, both the aesthetic and historic sense of the site would be altered; rather than driving freely into an open landscape after crossing the park boundary, visitors would proceed to the new entrance complex with its canopies, one-half mile up the road and potentially visible on the near horizon. The project would be an adverse effect to the integrity of feeling and design.

Memorandum of Agreement

As an Adverse Effect under 36 CFR 800.6, a draft Memorandum of Agreement (MOA) has been developed with the SHPO to resolve the adverse effects and is included as Appendix D.

Mitigation Measures

Appendix C (CR) has identified mitigation measures should an inadvertent discovery is made during construction.

Air Quality

Affected Environment

The Clean Air Act of 1977 and NPS's Management Policies 2006 require NPS to consider air quality impacts from projects. JTNP is designated as a Federal Class I Airshed under the Clean Air Act, granting special air quality protections from any new major stationary source or major modifications near the park.

The proposed project is located within the Mojave Desert Air Quality Management District (MDAQMD). MDAQMD and Southern California Association of Governments (SCAG) have developed air quality management plans (AQMPs) to meet the requirements of the federal Clean Air Act. The proposed project must comply with CARB and/or the USEPA mandated mobile source emissions regulations outlined in the applicable AQMPs.

The project area is in a non-attainment area, exceeding federal and state air quality standards for:

- Ozone 8-Hr (1997 Standard)
- Ozone 8-Hr (2008 Standard)
- Ozone 8-hr (2015 Standard)
- PM 10 (1987 Standard)

Mobile Source Emissions

The project would generate mobile source emissions from construction equipment at the jobsite, and workers traveling to and from the project site. Most of the construction related mobile emissions would occur during the grading phase where larger diesel-powered construction equipment would be used to prepare the site for construction. Other mobile emissions would be generated by intermittent supply trucks, and short-term use of large equipment for paving and concrete work. During the bulk of the construction, worker trip travel would be most common.

MDAQMD has developed Not to Exceed Emissions Thresholds for projects. If a project exceeds these thresholds, it would be deemed “Significant” and require the project to incorporate mitigation measures to bring the project below the threshold levels.

Table 2. MDAQMD Significant Emissions Threshold

Criteria Pollutants	Annual Threshold (Short Tons)	Daily Threshold (pounds)
Greenhouse Gases (CO ₂ e)	100,000	548,000
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO _x)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO _x)	25	137
Particulate Matter (PM ₁₀)	15	82

Fugitive Dust. Management of fugitive dust caused by project construction is a regulation of the MDAQMD and is covered under Rule 403.

Permanent Stationary Emissions

Propane Generator. The proposed project includes the placement of a propane generator that would be intermittently used to recharge lithium batteries and directly provide power to the buildings when batteries are too low. This propane generator is considered a permanent stationary emission source and would need to meet efficiency standards of California Air Resources Board (CARB). The use of the generator would need to be permitted by MDAQMD.

The specifications of the proposed generator are as follows:

- 20-kW propane
- Standby with automatic remote start/stop
- Self-enclosed

Environmental Consequences

Alternative A – No Action

Under this alternative the project would not occur. There would be no construction related emissions, or permanent source emissions.

Under continuation of existing management, traffic would continue to use Park Boulevard for access into the park. Emissions from gas powered vehicle traffic would continue and may likely increase as visitation increases.

Alternative B – Preferred Alternative

Mobile Emissions

Pollutants and GHGs emitted because of construction related activities would consist of construction emissions from vehicle and equipment exhaust, and trips to and from the construction site. Because this activity would be well below MDAQMD Significance Thresholds, the actual modeling of emissions was not conducted. However, because emissions would be generated from construction related activities, Best Management Practices have been identified that would minimize air quality emission impacts (See Appendix C).

Fugitive Dust. The project does not meet the thresholds for fugitive dust as defined under Rule 43 as the project footprint is ~1.5 acres and less than 2,500 CY total would be handled as part of site preparation. Rule 43 thresholds: 5 acres disturbance footprint for non-residential construction; and moving, depositing, or relocating more than 2,500 cy per day on at least 3 consecutive days. The project would not be moving,

depositing, or relocating more than 2,500 cy for three consecutive days. Expected soil handling would be as follows:

- Approximately 675 cy of topsoil (east side of road) to be salvaged for site rehabilitation and future park uses.
- Approximately 815 cy of rough grade soil (soil below 3") moved to west side of road to be used for fill for bypass lane.
- No more than 1,518 cy of fill to be brought in if necessary, for fill for bypass lane (worst case scenario).

As such, MDAQMD Rule 43 would not be triggered, and no dust control plan would need to be submitted to MDAQMD. However, because dust would be generated during site grading and preparation, BMP measures would be implemented to minimize fugitive dust (See Appendix C - AQ).

Permanent Stationary Emissions

The propane generator proposed for intermittent use is designed to be a 20-kW propane generator. The design of the PV system is intended to provide sufficient energy for operation of the entrance station in order to minimize use of the generator, and only have it run when loads exceed the batteries available energy.

The run time for the generator would depend on several factors: solar production, electrical loads used throughout the day, and battery capacity. The generator would turn on when it must supply power to the buildings and recharge depleted batteries. Worst case scenario is if there is a total failure of the PV system, such as the inverter, the generator could use up to 2.91 gallons of liquid propane gas per hour with a total run time of approximately 137 hours using a 500-gallon propane tank. However, the more likely scenario is the generator would run when the batteries are depleted due to high energy load for multiple days without adequate solar radiation, either due to cloudy days, or during short days in the winter.

If the propane generator is only minimally used, which is the objective of the off-grid PV system, the generator would still need to be exercised to keep components lubricated by circulating oil through the engine. Exercising the generator would be done at least monthly for a few hours but would be timed automatically by the generator control system. NPS would obtain permit to operate the generator and would implement any measures as required by the permit.

Best Management Practices (AQ)

- Construction activities would be coupled with water sprinkling to reduce fugitive dust emissions. Water sprinkling would be conducted as necessary on active work areas where soil or fine particles are exposed.

- Idling of construction vehicles would be limited to reduce construction equipment emissions. Unnecessary idling of all construction vehicles and equipment would be avoided throughout the construction period.
- Propane generator would meet CARB standards.
- NPS would obtain a permit from MDAQMD for the operation of the propane generator.

Park Operations

Affected Environment

JTNP entrance operations require Recreation Fee Technician (RFT) staff from 6:30 am to 8:00 pm. The existing West Entrance Fee Station only has one fee kiosk and is only large enough to support 2-3 RFTs per shift with overlapping shifts.

RFT Staffing Levels. Staffing levels at the current west entrance from November to May requires two Recreation Fee Technicians operating and collecting fees at each of the inbound (1) and outbound (1) fee collection windows. A second shift of two Recreation Fee Technicians allow the operation to have two shifts with hours of operation 6:30 am to 8:00 pm. Shift times overlapping between the hours of 10:00 am and 4:00 pm allows one or two Recreation Fee Technicians to direct traffic and expedite pass holder entry for peak traffic hours 10:00 am to 4:00 pm. Pass holders are expedited through an oversized asphalt road shoulder, wide enough for average sized passenger cars and trucks to use as a lane. Excessively wide RVs and Trailers are not able to use the bi-pass lane.

Working Conditions. Working conditions for the RFTs in the entrance station include long hours with constant traffic flow through the entrance; helping visitors determine the correct pass for a visit; and answering questions about the park, its hiking trails, pet regulations, and campgrounds in an expedited transaction lasting 30 to 45 seconds per visitor (group/family). The entrance stations are air conditioned; ergonomic office equipment and chairs are supplied, but there is little to no anti-glare or protection for RFTs from sunlight during a transaction while a fee window is open. The entrance station does not have adequate crosswalks for RFTs to use while crossing lanes to access the nearby ranger station and rest rooms. Hi-visibility vests are worn to cross a lane, with pedestrian and driver communication including eye-contact, gestural and verbal calls.

Fee Collection Inefficiencies. Inefficiencies in the operation include low volume of customer service. With one fee window on the inbound lane, only one RFT can assist one visitor at a time. The bypass lane for pass holders is insufficient to reach deep into

traffic congestion. One inbound lane with a single service window does not adequately serve the volume of traffic entering the Park.

During times of traffic congestion, an RFT would obtain a portable register terminal, stand in the island in front of the inbound lane window and sell single vehicle and motorcycle passes, increasing the service volume to two vehicles at once. This is a time-limited solution as the portable terminal has a two-hour battery life before returning it to a charging station for an hour charge. Another RFT or Volunteer Park Traffic Ambassador would direct traffic to the bypass lane or to the fee lanes to keep the traffic line to a minimum. When the traffic wait time becomes longer than 15 minutes or blocks neighborhood access, an RFT would wave traffic through and into the park without collecting a fee. This process can take between 15 minutes or up to an hour and a half until the traffic rate returns to a manageable level. This pass-thru can be conducted more than once a day. Outbound lanes at the North and West Entrance do give the visitors another opportunity to pay fees or purchase annual passes, but most visitors are upset or do not understand why they are waved through just to pay on the way out of the park. Fees for up to 21 visitors per 15 minutes can total between \$630 to \$800; estimated losses for an hour of waved traffic can result in uncollected fees of \$1,600.00 an hour.

RFT provide important visitor orientation and regulatory information that benefits visitor experience and resource protection. Congestion and heavy traffic reduce the amount of time and ability the RTF has to provide this important information and limits opportunities to provide for a safe, enjoyable, and responsible experience.

Emergency Services. When the West Entrance Fee Station backs up outside the park it is difficult for emergency vehicles to navigate through the congestion to quick service an emergency.

Other Park Operations. Other Park operations that service West Entrance includes maintenance and law enforcement (LE) who are there at various times throughout the day on an as needed basis. The comfort station at West Entrance gets service 1-2 times per day depending on use levels. Maintenance and LE are not stationed at West Entrance fulltime.

Environmental Consequences

Alternative A – No Action

Under this alternative there would be no construction of a new West Entrance Fee Station and the existing West Entrance Fee Station with one kiosk would continue to be used. Staffing, working conditions, and fee collection operations would continue be the same as described under the affected environment above.

Alternative B – Preferred Alternative

RFT Staffing Levels. This alternative would construct a total of 4 operational kiosks compared to only one at the existing station. The staffing of this new station requires additional RFTs to work each of the fee kiosks. During peak operations up to 5 RFTs would be stationed during the overlap of shifts from 9:00 am to 5:00 pm. During shoulder hours RFTs would be reduced to match traffic flow. During peak operations, this would result in only 1-2 additional RFTs to be necessary to fully operate the new fee station.

Fee Collection Inefficiencies. With implementation of the project, the West Entrance would be able to serve four inbound visitors simultaneously: dividing traffic into two lanes each with two entrance kiosks, conducting business in tandem. A third “Pass Lane” is available to allow pass holders an expedient entrance to the park reducing the overall traffic congestion to the west of the entrance station. This also reduces the traffic backing up outside the park and into the gateway community. The proposed entrance station provides the opportunity for four points of collection and one alternative entrance route allowing for up to five times the efficiency. Collection of park fees is expected to increase (i.e., increase park fee revenue) because it would no longer be necessary to flush the cars in line to enter the park, as wait times during most times would not be greater than 15 minutes. Improved traffic conditions are expected to increase opportunities for visitor orientation and communicating regulatory information.

Working Conditions. Working conditions (comfort and safety) for RFT staff would be greatly improved by the construction of the new West Entrance Fee Station. Different aspects of design features when constructed would provide better comfort and safety for on-site working personnel. The construction of a shade shelters over the fee kiosks would eliminate the constant sun glare, reduce UV radiation on staff and buildings, and support the cooling of the fee stations during peak heat season. The new support building would allow for RFTs to be given a work break offering a place to relax, take a bathroom break, and eat lunch away from traffic and fee collection operations. Entrance and exit to the fee kiosk booths would be safer with pedestrian pathway striping and protective physical infrastructure such as bollards and raised curbs to allow for safer staff movement around the complex.

In the event of an emergency, the bypass lane would be arranged as expedited access into the park for emergency vehicles.

Park Maintenance Operations. The addition of 4 kiosks, support building, additional wastewater treatment system, and off-grid PV electrical system would increase the routine maintenance effort from the no project alternative. Additional NPS maintenance effort would be needed in the following areas:

- **Building Maintenance:** The addition of 5 new buildings would require additional routine maintenance for upkeep and cleaning.

- Monitoring and maintenance of the on-site wastewater treatment system.
- Off-Grid Electrical System: Equipment associated with the off-grid PV electrical power system adds additional equipment such as PV Array, power inverters, batteries, propane generator/tank.

It is estimated this additional maintenance effort would require approximately 0.35 of an FTE (Full Time Equivalent) to perform the regular maintenance functions required for the complex.

Visitor Experience and Satisfaction, and Community Concerns

Affected Environment

Visitor Experience and Satisfaction

The existing West Entrance Fee Station is only one kiosk and thru this kiosk over 55,000 cars per month have passed thru this narrow pinch point during the parks busy season (see Figure 8). The “0” count in April 2020 was due to park closure because of the pandemic. During 2021, during the first five months, the traffic count has been over 45,000 cars per month average. The volume of cars waiting to enter the park causes long wait times. The longer the wait the lower the visitor satisfaction. To prevent excessively long waits, fee staff sometimes flush the line of cars and ask the visitors to pay on their exit. In a visitor use study conducted by Clemson University (2020), adding additional entrance lanes was a future management action supported by most of park visitors surveyed. The comfort station at the existing West Entrance Fee Station provides a bathroom which provides the first bathroom in the park for the visiting public.

Community Concerns

The local community adjacent to the existing West Entrance Fee Station (Monument Manor Neighborhood Association) have expressed frustration regarding the long line of cars that line up along Park Boulevard outside the park, and have registered complaints to the park about the impacts this line of cars has on their quality of life, including, not being able to access their driveways, cars parking along shoulder and blocking driveways or causing a nuisance; speeding traffic; and headlight beams shining inside their living environment.

Environmental Consequences

The measurement indices for impact assessment are as follows:

Visitor Satisfaction

- How the proposed project affects wait times and traffic congestion for vehicles entering the park.

Community Concerns

- How the proposed action affects car queueing on adjacent roadways outside the park and blocking private driveways.
- How the proposed action affects headlight beams shining light into private homes.

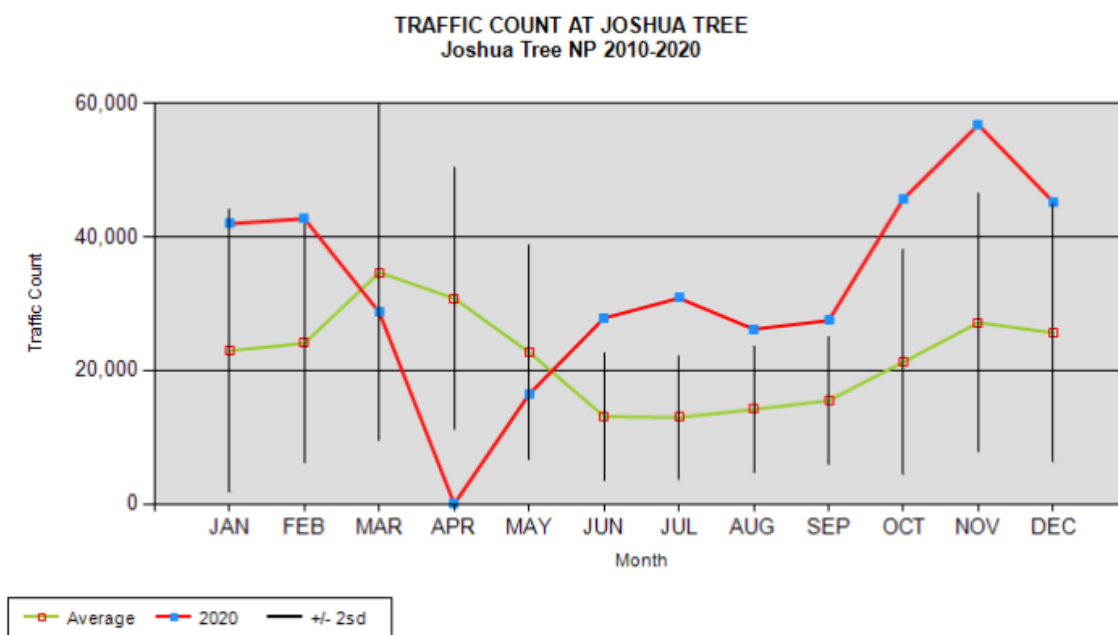


Figure 8. JTNP Traffic Count by Month

Alternative A – No Action

Under the no action alternative, a new fee station would not be constructed, and issues associated with traffic congestion and long wait times would not get addressed. Congestion and long wait times would persist and likely get worse as visitation increases.

Community concerns would continue to persist and would likely get worse as visitation to the park increases. Under continuing park management, JTNP would continue to implement actions to minimize impacts to traffic congestion and wait times, including encouraging visitors to arrive at the park during non-peak days/times, visitor notifications to use the North or South Entrances, and waving cars through without collecting fees. Under the no action alternative, the issues associated with visitor satisfaction would continue and be adverse.

Alternative B – Preferred Alternative

Visitor Experience and Satisfaction

Implementation of the proposed project would improve traffic congestion and wait times. Features of the proposed action that would improve traffic congestion and wait times revolve around moving the station further into the park while providing more fee kiosks (+3 from existing) and having three lanes of traffic (+3 from existing). The additional fee kiosks would allow for additional staffing during peak times/hours to match traffic flow; and a third “Pass Lane” would allow pass holders an expedient entrance to the park reducing the overall traffic congestion. These actions would reduce wait times and congestion at the existing entrance station and thereby increase visitor experience and satisfaction.

Community Concerns

Blocking Driveways and Vehicles Queuing Outside the Park.

For the same reasons discussed under visitor experience and satisfaction above, the proposed action would eliminate cars blocking driveways and queuing outside the park. The new fee kiosk station is located ~2,642 feet from the park boundary, whereas the existing fee station is only ~254 feet from the park boundary, a net difference of 2,388 feet. Using an average length of car as 15 feet with 4-ft buffer between cars, this would allow for queuing of ~140 cars versus the existing condition of ~13 cars, a net difference of ~127 cars. Only in unusual circumstances such as the top 5% of visited days, lack of RFT staffing, or vehicle accident emergency, would there be the possibility of vehicles queuing beyond the park boundary. Under these circumstances the park would use similar protocols as are currently used to flush the line should it extend beyond the park boundary.

How the proposed action affects headlight beams shining light into private homes.

As is standard practice at JTNP fee entrance stations, vehicles are asked to stop at the fee kiosks to show their proof of payment. This practice does cause multiple vehicles to queue behind the entrance station especially during times of high visitation. The queuing of multiple exiting vehicles could increase the amount and intensity of headlight shine in the direction shown on Figure 9. JTNP does not expect there to be long queues of vehicles exiting the park or vehicles queuing for long duration because there would be up to two exit kiosks that people could utilize to show proof of payment, and with less vehicles needing to pay on the way out, exit queues would be much faster.

And fee kiosk stations are normally only open until 8pm, there would be no queuing of traffic after this time. Because the project is not changing the geometric design of the road, cars exiting the park, after leaving the proposed fee station, would shine their headlights in the same fashion and direction as the existing condition.

As shown in Figure 9, the 45-degree typical pattern of a vehicle's headlights from the proposed location site would shine towards some of the properties within the Monument

Manor neighborhood. The middle of the 45-degree area would have the greatest illumination and intensity with the intensity of light diminishing with distance. JTNP would monitor headlight beam intensity from queued cars waiting to exit the West Entrance Fee Station to determine if there are headlight beam impacts that are new with the project that were not existing under current conditions. If impacts are apparent, JTNP would work with the community to identify potential treatments (See Appendix C – RM).

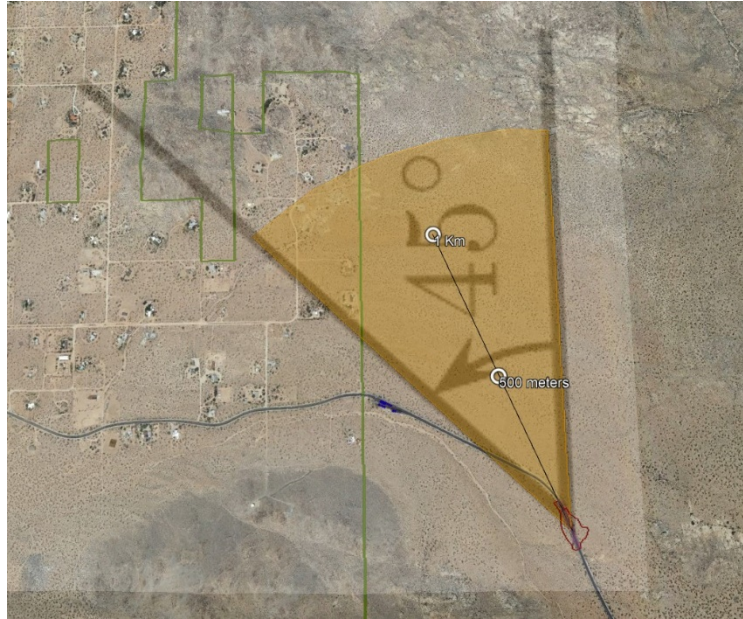


Figure 9. Vehicle Headlights

Visual Resources

Affected Environment

The proposed site of Monument Manor Viewpoint was evaluated as a viewpoint in September 2017 as part of a parkwide visual resource inventory following NPS protocols (<https://www.nps.gov/subjects/scenicviews/inventory-process.htm>).

The viewpoint was described as follows:

- Viewpoint Description: Looking downslope at hills in a valley with distinct mountain ranges and development in valley; Bajada, hills with abundant vegetation.
- Foreground View: Edge with grand pad to ridge from left/west towards entrance station

- Middleground View: To other side of prominent ridge/rock outcrop in Monument Manor
- Background View: Valley, Yucca Mesa and mountains on horizon
- Colors: Tan, Med-dark brown for hills; Charcoal Grey/blue mountains in background; medium green for vegetation; Structures in background White/Silver
- View Importance: Pullout off main road
- Interpretive Themes: Joshua trees, urban interface, geologic process, Mojave Desert
- Viewer Concern: Short views observed by cars in passing, hikers would not likely linger, those seeking sunset views may linger
- Overall viewer importance: 4 out of 10.
- Scenic Quality Rating: B



Figure 10. Monument Manor Viewpoint

Environmental Consequences

The visual impact of the project will be measured using the following visual impact measurement.

Visual Contrast:

- Change of the project site to what is seen by the viewer. This includes viewers passing in their cars, hikers and sunset/night sky viewers, and from viewers located in the Monument Manor neighborhood adjacent to the park boundary.

During the parkwide visual resource inventory no viewpoints were established that showed the project area as part of the foreground or middle ground; however, the

background viewpoint taken from Eureka Peak included the area of the project site, but the project site was undetectable.

The project would introduce a building complex into an undeveloped desert setting. For compatibility to the Mission 66 Historic District, the building design used Mission 66 design principles. There are and have been buildings with many different architectural styles within Joshua Tree National Park including adobe buildings, wood-frame homestead cabins, and dry-stack masonry mining cabins. However, the majority of JTNP infrastructure was constructed during the Mission 66 era.

NPS buildings from this time are often described as “Park Service Modern” and included buildings designed by mid-century master architects Richard Neutra and Frank Lloyd Wright. Because the new entrance complex at West Entrance is located within the Mission 66 Historic District, Mission 66 design principles and materials are the most appropriate references at this location. Park staff identified materials, such as the concrete block used for the entrance monuments and the geometric corrugated metal used on the Mission 66 picnic structures at Cottonwood, and design principles, such as utilizing deep overhangs, large plate glass windows, and low-slung masonry, which were used in the park during this period. Colors used were of the same hues found in or compatible for this desert landscape.

Alternative A – No Action

Under the No Action alternative there would be no new development. From any viewpoint there would be no change to what would be seen by the viewer.

Continuation of existing management visitors would continue to infrequently spend much time in any of the areas between the existing West Entrance Fee Station and the proposed fee station. Visitors who do spend time in this area would see no change to their viewpoint.

Alternative B – Preferred Alternative

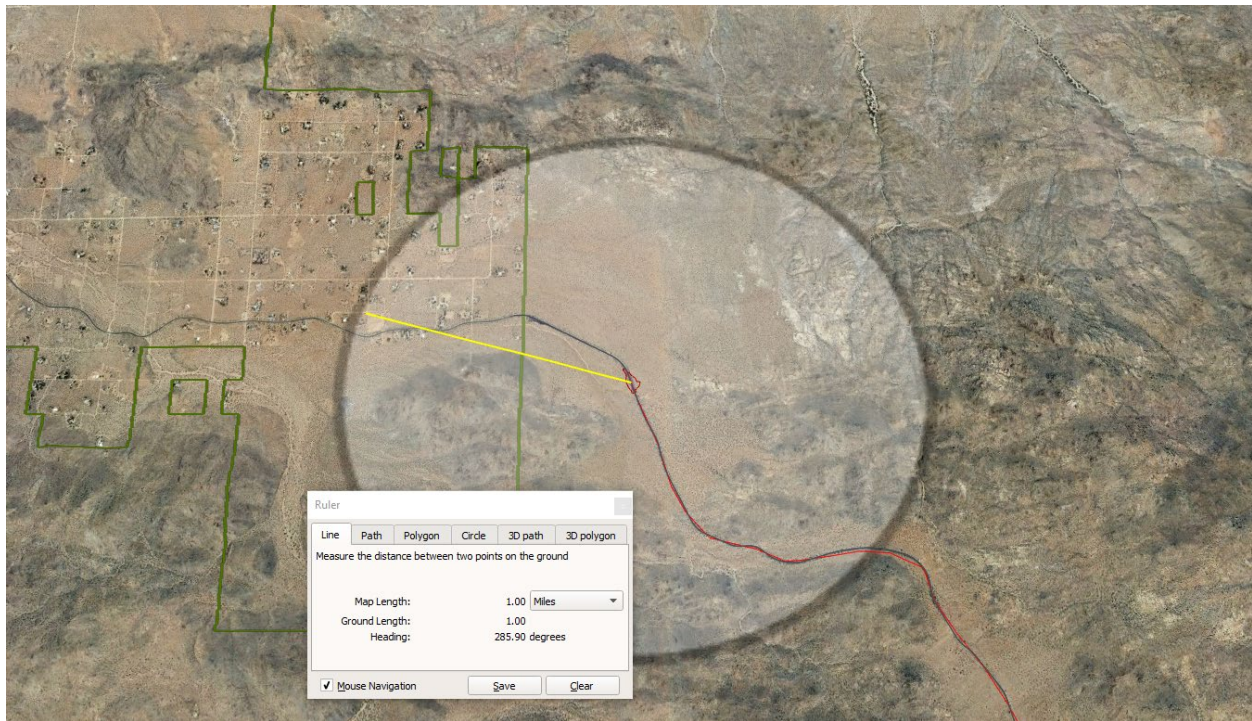


Figure 11. Viewshed

Visual Contrast

Viewer: Passing in Their Vehicles: This viewer would be the most common among the viewers that would be viewing the new building complex. Park visitors heading north, exiting the park would not see the complex until they drove past a long curve about a ½ mile from the proposed complex. As they approach the fee complex, they would notice the most prominent features of the complex being the two shade structures placed over the fee kiosks and the park staff support building. The shade structures would have PV arrays on top of them and would be angled to the south (the direction the vehicles are exiting) at a 1:12 slope to better capture the sun. The exit approach to the fee kiosks is downhill, so the angled shade structures would appear more prominent than if they were flat or tilting in the opposite direction (See Figure 12).

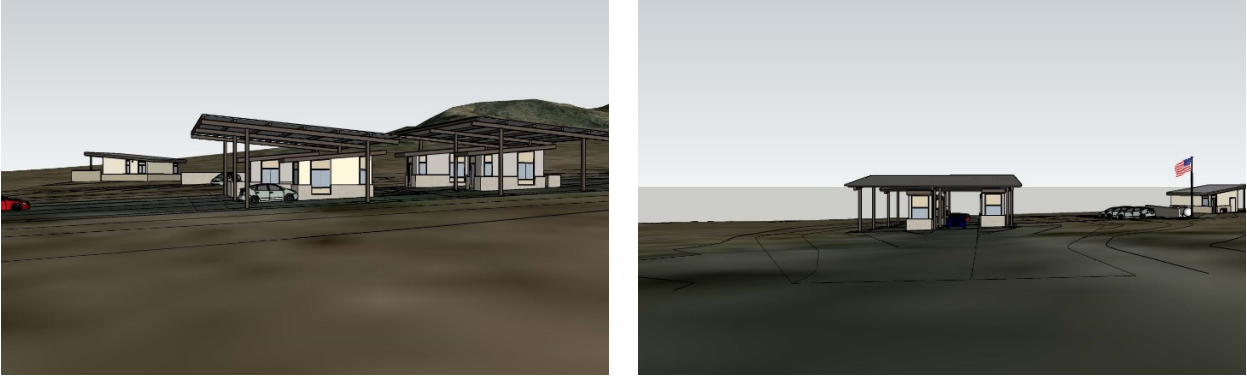


Figure 12. Rendering of Shade Structure Tilt

These viewers exiting the park would be anticipating encountering the fee station and beyond, including the community development just outside the park boundary. At night, they would see the lights of Morongo Basin, Yucca Valley, and those of Monument Valley. Viewing subdued lighting from the fee complex would not be harsh and would be within expectations being viewed in their background view. The design features of the building design would subdue the contrast, but the complex would be highly noticeable, but not unanticipated.

Viewer: Hikers, Sunset and/or Night Sky Viewers. The area shown in Figure 11 is not popular for viewers that are hiking, rock climbing, or doing sunset/night sky viewing from this area. There are many areas in the park where the viewer would find better opportunities for these activities. During daylight, the contrast of the complex against their viewpoint would depend on which direction they are viewing the complex. Viewing it looking south, with the complex in the background, it would appear as a noticeable contrast to the surrounding desert background and out of place in an undeveloped landscape. However, viewing the complex looking toward the north and northwest, with the complex in the background, it would appear as one of many developments in the local area. At night, the complex would not detract from sunset viewers as they would be viewing the sunset generally to the west and likely from the roadside. From this vantage point the complex would not be prominent. Night sky viewers would not generally be viewing night skies from this area because lights from the Morongo Basin and Yucca Valley would be visible from the area outlined in Figure 11 and night sky viewers would find much better viewpoints further into the park that don't have light pollution from development.

Viewer: Monument Valley Community. From the viewpoint from the proposed site development, portions of the Monument Valley neighborhood are visible, but are not distinct or sharp due to the distance. Since a viewpoint was not established from the Monument Valley neighborhood, it is presumed the view looking towards the fee kiosk complex would appear the same, as a small and indistinct structure, but visible if the viewer knew where to look. Because the

complex would be built with hues that are compatible and not contrasting to the surrounding desert landscape, and because the shade structures would be tilting away from the community, the complex would be barely visible from the neighborhood.

From the existing West Entrance Fee Station, the proposed fee building complex is elevated approximately 120 feet and beyond a curve in the road. Because of this curve, the distance of ~1/2 mile, its elevated stature, and the intervening desert vegetation shielding views in between, the proposed fee kiosk complex would barely be visible, if at all.



Figure 13. Different Views from Proposed Location

Chapter Four

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National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Appendix A – Public Comment Summary and Agency Response

Project: Construct West Entrance Fee Station Project

PEPC #: 83105

Appendix A

Public Comment Summary and NPS Response

Introduction

Public Scoping was initiated on August 18, 2021 for a 30-day and public review and comment period. Notification of the start of public scoping was done by: news release; park planning newsletter (<https://conta.cc/3gfxB78>) to approximately 861 people; social media (tweet was sent with links to newsletter and Public PEPC comment site); and posted on JTNP website (<https://www.nps.gov/jotr/getinvolved/westentrance.htm>).

JTNP received comment from 53 individuals in response to our public scoping outreach.

By-Pass Lane.

Approximately 8 commenters desired that as part of the design and/or operation of the West Entrance Fee Station that a by-pass lane be used for visitors who have a pass, or a receipt. Some suggested the use of different methods or technologies for use at kiosks or the by-pass lane for making entrance into the park more efficient, such as the use of scanners or posting a fee ranger in a by-pass lane. One suggested having a priority or express lane for locals and residents.

A By-Pass lane is included as part of the proposed design of the new West Entrance Fee Station. The physical infrastructure would allow for more efficient access into the park. The exact way the By-Pass lane will be operated by our entrance operations team has not been decided and is beyond the scope of this proposal. However, the comments regarding more efficient entrance by fee or receipt holders has been made available for consideration by our entrance operations team for consideration as they develop their operations for the New West Entrance Station.

Affordability

One person commented on park fees, wondering if the park could make the park free to local residents; and also expressed frustration that the park entrance fee makes the park inaccessible due to affordability.

Making the park free to locals and the affordability of the park entrance fees are outside the scope of this analysis and will not be addressed in this EA.

Sustainability

One comment had concerns and suggestions regarding the sustainable and resiliency of the design of the West Entrance Fee Station complex. The commenter wondered whether the design of the complex addressed: animal crossings; recycled materials for

pavement; “Cool” pavements; “Cool” roof design; re-using rather than demolishing the existing West Entrance Station; Passive design systems; establishment of native trees to minimize heat island effects and reducing the impact of idling; design addressed resiliency and adaptability to climate change, including flooding from more intense rain events.

In defining the project, the park established design building guidelines for the Architecture and Engineering (A&E) professionals to use in designing the building. These design guidelines did include consideration of the project areas climate and sustainability. Climate considerations included designing for cool winters with near freezing conditions, and summers that are extremely hot and dry. The rainfall is low but tends to occur in tremendous downpours a trend that would continue with climate change. Buildings orientation would take advantage of solar orientation and be designed with heat avoidance as a primary consideration. Heat avoidance features include shade structures over the kiosk stations, and thermal massing of the building envelopes. Changes from schematic design changed the location of the comfort station due to potential flood hazard of an adjacent flow channel. The proposed design of the buildings has taken into consideration sustainability and climate change the details of which can be reviewed under the proposed action alternative description.

Communications

One comment suggested that the use of a satellite link for data communication is unreliable and suggested that communication line could be placed in the same trench as the water line to create a hard-line connection.

Data transfer is necessary for credit card fee collection. The technology being used for the registers that will be used at the new West Entrance allows for the flexibility of offline collections. This includes credit card transactions. In the event of low satellite capacity, a fee collector will need to be online only when logging in and out, collecting fees offline between. A conduit for data will be included in the water line trench so that if high-speed data lines reach the West Entrance Park boundary they could be added in the future.

North Entrance

Two comments touched on the North Entrance asking for it to be expanded or to make the roads one way, with entry into the park thru the North Entrance and exit the park thru the West Entrance.

The actions being considered in this analysis are focused on West Entrance with meeting the objective of creating a more efficient entry way into the park and reducing back-up of cars into the community. Expanding the North Entrance or making the roadway one-way are beyond the scope of this analysis and won't be

discussed in this EA. However, the comments have been noted for possible future consideration.

Moving the Entrance Sign

Two comments asked the park to move the entrance sign further into the park, one asking that it be moved to where there is parking, and the other requesting it move to where the new West Entrance Station will be built. Both comments felt moving the sign would keep visitors from parking alongside the roadway and in private driveways and would help alleviate congestion at the West Entrance NPS boundary.

Moving the entrance sign was not an action NPS is proposing with this project. The sign and its location are one of two primary contributing features associated with the Mission 66 West Entrance Historic District. The other primary contributing feature is the roadway. Moving the sign would cause adverse impact to the historic district and may cause significant loss to the district's integrity. If enacted, the district would likely become ineligible for historic district status.

Parking will remain at the existing West Entrance station and signage would be added to direct visitors to the parking area. The Park is aware of actions the County of San Bernardino has made to the roadway just outside the West Entrance boundary that makes it difficult for motorists to park along the road. These actions include safe-hit delineator posts along the road shoulder and placement of "No Stopping" signs. These County actions, along with additional signage that will be enacted by the NPS, should discourage roadway parking for people wanting to take a picture of the historic entrance sign.

Speed Reduction

Four comments expressed concerns regarding the speed of cars through the residential area. Concerns were raised that with the removal of the existing West Entrance Station there to slow traffic, cars would be leaving the park at a higher rate of speed through the residential area.

Paved roads within the park have a speed limit of 35 mph. The speed of cars for this stretch of roadway leaving the park would not be any different for car speeds than any other stretch of open road within the park. Some motorists will exceed the speed limit and our law enforcement rangers will monitor this area as well as all areas of the park and ticket motorists exceeding the speed limit.

The park will post roadway signage indicating to motorists they are leaving the park and entering a residential area. Cars traveling more than the speed limit, currently set at 55 mph outside the park, are outside of JTNP jurisdiction for enforcement. The park has coordinated joint meetings with the County of San Bernardino to address residential concerns adjacent to JTNP boundary.

Existing West Entrance Improvements

Concerns were raised regarding how visitors would use the area around the existing West Entrance comfort station after the fee station is removed. Specifically, visitors stopping at the comfort station at all hours of the night, partying, and being loud. One commenter felt the situation would worsen without the station and law enforcement having a presence at the site and if the parking area is expanded

The comfort station at West Entrance is open 24-hours a day. With the removal of the fee station, NPS personnel would no longer be at the site during their normal fee collection hours. There has never been a constant ranger presence at the comfort station after fee collection personnel leave the site. Given this, JTNP does not feel the conditions would be more conducive for this type of after-hours activity; and if this type of activity occurs it would happen at the same frequency as the existing situation (unoccupied fee station). JTNP encourages the public to report this type of activity so that it can be addressed when it is occurring.

One commenter asked whether the existing comfort station parking could be expanded and made into a visitor center where visitors could receive maps and information.

The parking lot is not being expanded at the West Entrance comfort station to accommodate more parking. Parking would remain relatively the same; however it is being slightly reconfigured to allow for better accessibility and space for larger RV vehicles, and a pedestrian pathway to the entrance sign. JTNP does not want to expand visitor services at this site because space and parking is limited and does not want to cause congestion at this site. This site will continue to disseminate basic park information.

Collection of Fees

There were comments related to how JTNP should expedite or improve the collection of fees at the new West Entrance Fee Station to expedite entrance into the park, including bypass lanes and limiting the amount of interaction with visitors passing thru the kiosks. Also, there was a suggestion for the park to extend the hours of entrance collection to bring in more fee revenue.

The purpose of this proposal is to create infrastructure that would facilitate more efficient collection of fees and to eliminate the back-up of traffic into the park.

The method of collecting fees and staffing hours of the fee station is beyond the scope of this analysis.

One-way Loop Alternative

One commenter suggested to reduce congestion at West Entrance would be to make a one-way loop, with entrance at the North Entrance located at Twentynine Palms, and exiting through the West Entrance.

This project has a very specific purpose and need (See above Purpose and Need) to reduce congestion and increase efficiency of fee collection for JTNP most used entrance. Although the one-way loop would certainly eliminate congestion at West Entrance, it likely would create a similar congestion problem at the North Entrance, and the need to build a new fee station to handle the JTNP entrance traffic. This alternative is not being considered because it does not meet the purpose and need of the project.

Headlights Leaving the Park

Several commenters are concerned about the light intrusion on their residences of headlights and taillights from cars as they make the last turn leaving the park or queueing to enter the park. The specific concern is when cars are making the last turn leaving the new proposed entrance station their headlights sweep across residences outside the park. One comment thought the condition would be amplified with the site location of the new station. The commenters provided suggestions to improve light intrusion, including: minimize queueing at the kiosks, a vegetation or physical barrier around the curve of the bend, or signs that would deflect the lights.

This issue is analyzed in Chapter 3, Visitor Experience and Satisfaction, and Community Concerns impact topic.

Issues Outside the Park

Several commenters expressed concerns for conditions that are occurring outside of the park, including, cars using residential roads trying to find a shortcut into the park, and the speed limit of Quail Springs Road that leads to the Park is too fast;

Addressing these issues is outside the scope of this analysis. The NPS does not have jurisdiction in the land areas outside the park.

Increase in Visitor Use

One commenter is concerned that by making the entrance station larger and making it easier and faster to collect fees there will be an increase in the amount of traffic that enters the park. The same commenter believes the park should limit the visitation into the park to preserve park resources.

Whether the larger and more efficient fee station would increase park visitation is analyzed in the impact topic Traffic and Circulation. The suggestion to limit park visitation is beyond the scope of this analysis and is not considered in this analysis.

Traffic and Congestion

Two comments are concerned that the site of the new fee station is not located far enough in the park and still may be a back-up of cars outside the park.

Whether the new fee station is sufficient to keep cars from backing up into the residential neighborhoods outside the park is analyzed in the impact topic Traffic and Circulation.

Photovoltaic and Grid Electric Power

One commenter wanted more details on the solar photovoltaic system being proposed for the new station. This commenter is concerned about the placement of the panels and visual impact it could have to residents adjacent to the park and visitors entering or exiting the park. The same commenter asked why electrical service is not being trenched in from the existing site, and if done it would eliminate the need for a generator and propane.

Details of the photovoltaic (PV) system has been described in the proposed action (Chapter 2), including a description and diagram renderings of where the PV panels are located (and direction they will be facing), and location of the generator and propane tank.

A value analysis (VA) was used to determine whether to bring in grid electrical power or to use PV. Due to the power needs of the new fee entrance station and the distance the electricity would need to travel, the grid power panel at the existing site needed a significant upgrade to meet these requirements. When compared to upgrading the existing power, the cost of putting in a PV system, including life-cycle costs, was determined to have the least costs. JTNP successfully manages a similar off-grid PV system at Cottonwood.

Architectural Design Considerations

We received two comments regarding the architectural design of the buildings and questioning whether mid-century modern is the most appropriate architectural style to reference.

We received two comments regarding the architectural design of the buildings and questioning whether mid-century modern is the most appropriate architectural style to reference.

There are and have been buildings with many different architectural styles within Joshua Tree National Park, including adobe buildings, wood-frame homestead cabins, and dry-stack masonry mining cabins. However, the majority of Joshua Tree National Park infrastructure was constructed during the Mission 66 era. Mission 66 was a nation-wide NPS building program which was defined by its use of mid-century modern design and architectural principles, and which includes buildings and infrastructure constructed between 1945 and 1972. NPS buildings from this time are often described as “Park Service Modern” and included buildings designed by mid-century master architects Richard Neutra and Frank Lloyd Wright.

At Joshua Tree, Mission 66 development occurred between approximately 1956 and 1972. During this period, the road networks were formalized, campgrounds were built, and buildings were constructed. These developments also included the formalization and paving of Park Boulevard and Pinto Basin Road, as well as the construction of entrance monuments at the North, West, South, and Indian Cove entrances of the park. Today, four districts associated with Mission 66 at Joshua Tree have been determined eligible for inclusion in the National Register of Historic Places: the Cottonwood Mission 66 Historic District, which includes the ranger station, employee housing, the maintenance building, the campground, and road connecting the development with the Cottonwood Spring; and the North, South, and West Entrance Mission 66 Historic Districts, which encompass the first mile of roadway and the entrance monuments themselves, as well as the associated parking areas at the North and South Entrances. Four additional campgrounds have also been determined eligible for inclusion in the National Register as sites: Ryan Campground, Jumbo Rocks Campground, Sheep Pass Campground, and Indian Cove Campground.

Because the new entrance complex at West Entrance is located within the Mission 66 historic district, Mission 66 design principles and materials are the most appropriate references at this location. Park staff identified materials, such as the concrete block used for the entrance monuments and the geometric corrugated metal used on the Mission 66 picnic structures at Cottonwood, and design principles, such as utilizing deep overhangs, large plate glass windows, and low-slung masonry, which were used in the park during this period. This approach is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, which recommend incorporating the forms, materials, and color ranges of a historic resource when new construction at that resource's location is proposed. Additions and alterations should be compatible with original buildings or structures, but also distinct from them. Above all, it is important to avoid copying historic structures and buildings in a way that allows non-historic buildings to be mistaken as historic. Park staff believe that the proposed design incorporates these principles in a way that is appropriate within the historic context of the Mission 66 West Entrance Historic District.

Joshua Trees

The scoping notice described that during the clearing of the site for construction that 16 Joshua trees would be affected but would be removed and relocated. One commenter asked about the ability of these Joshua trees to survive being relocated given the current climate conditions.

The project's impact to Joshua trees in the project area is being assessed in under Vegetation in Chapter 3, including their likelihood of surviving after being relocated to an adjacent area.

Cultural Resources

One commenter asked if moving the West Entrance Station even further into the park would eliminate the adverse effect to historic properties.

Constructing the new entrance station more than a mile inside the park's boundary likely would have eliminated the adverse effect to the Mission 66 West Entrance Historic District. However, due to the topography and geography of the park beyond the one-mile distance, it is likely that the entrance booth would have needed to be sited considerably farther inside the boundary in order to be sited at a reasonably flat and straight section of the road. This would have resulted in significantly higher costs due to the much longer run required for water and data infrastructure and was determined to be infeasible. Additionally, the park did not complete identification of historic properties at other locations beyond the Mission 66 West Entrance Historic District because of the physical and financial challenges of constructing an entrance complex at those locations. While siting development of the entrance complex outside of the Mission 66 West Entrance Historic District might avoid adverse effects to that historic property specifically, there may be other historic properties at locations farther inside the park which would be affected by construction at those locations.



National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Attachment B – Climate Change Hazards Summary Report

Project: Construct New West Entrance Project

PEPC #: 83105



Climate Change Hazards Summary Report for Constructing West Entrance Station

Joshua Tree National Park
January 2022

Prepared By
NPS Climate Change Response Program
NPS Sustainable Operations and Maintenance Branch

Introduction

Information in this report is prepared for Facility Investment Projects. Information provided in this report is intended to help parks consider climate change related hazards when addressing Question 16 of the narrative template.

Specifically: What risks or hazards (current and projected, e.g. effects of climate change) are likely to affect this project? If applicable, what adaptation strategies and/or resiliency measures have been identified for scenarios that pose high risks to project assets?

Step 1: Review summary information for known or potential hazards identified for Joshua Tree National Park

- Review the list of potential hazards below and decide whether or not they apply to your specific project. NPS Climate Change Response Program (CCRP) staff attempted to identify potential hazards for the park; however, park staff and project planners have more information about hazards that are likely to be applicable to a specific project.
- The hazards below were selected from a longer list included in Appendix 1, which also indicates CCRP's 'best professional judgement' about the relevance of the hazard for this park. Note both lists serve as a "coarse filter" screening tool to help identify potential climate-related hazards for facility and asset planning.

Hotter temperatures

Greenhouse gas emissions from human activities have increased temperatures globally (IPCC 2013), across the U.S. (USGCRP 2017), and in U.S. national parks (Gonzalez et al. 2018). For the area within the boundaries of Joshua Tree National Park, annual average temperature increased at the statistically significant rate of $1.5 \pm 0.1^{\circ}\text{C}$ ($2.7 \pm 0.2^{\circ}\text{F.}$) per century from 1895 to 2017 (Gonzalez et al. 2018). Under the highest greenhouse gas emissions scenario, climate models project additional heating of Joshua Tree National Park of $4.6 \pm 0.9^{\circ}\text{C}$ ($8.3 \pm 1.6^{\circ}\text{F.}$) by 2100. The temperature increase could be kept to $1.5 \pm 0.6^{\circ}\text{C}$ ($2.7 \pm 1.1^{\circ}\text{F.}$) under a scenario of reduced emissions (Gonzalez et al. 2018). Under the highest emissions scenario, models project an increase of 30 to 40 more days per year with a maximum temperature $>32^{\circ}\text{C}$ (90°F.) and an increase of $2\text{--}3^{\circ}\text{C}$ ($4\text{--}6^{\circ}\text{F.}$) in the hottest temperature of the year, from 1990 to 2050 (Vose et al. 2017). Extreme temperatures can increase weathering and stress on infrastructure and people.

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Altered rainfall and snowfall

For the area within the boundaries of Joshua Tree National Park, total annual precipitation decreased at a statistically significant rate of $-32 \pm 12\%$ per century from 1895 to 2017 (Gonzalez et al. 2018). For projections under continued climate change, approximately half of the climate models project increases and half project decreases (Gonzalez et al. 2018). This lack of agreement exists for monthly, seasonal, and annual projections. Even if precipitation were to increase, higher temperatures would tend to increase aridity in the Mojave Desert through an increase in evapotranspiration (Byrne and O’Gorman 2015). The number of dry days per year and the number of extreme rainfall days could increase, leading to intense droughts alternating with intense wet periods (Polade et al. 2014, 2017; Swain et al. 2018). Under the highest emissions scenario, climate change would reduce the probability of snowfall in southern California mountains and high desert to zero (Klos et al. 2014). Changing rainfall and snowfall affect drought, wildfire, water scarcity, flash flooding, and wood decay

Climate change has contributed to a 10% increase in 100-year storms (a day with more precipitation than any other day, on average, in 100 years) for the southwestern U.S. as a whole from 1958 to 2016 (Easterling et al. 2017). Under the highest emissions scenario, continued climate change could, in southern California by 2100, double the frequency of extreme storms comparable to the storms that generated the 2016-2017 floods (Swain et al. 2018). Under the highest emissions scenario, climate change could increase the frequency and intensity of atmospheric rivers, narrow bands of highly concentrated storms that move from the Pacific Ocean into California, increasing rainfall in severe storms in southern California up to 28% by 2100 (Hagos et al. 2016, Huang et al. 2020). Extreme storms can cause flash flooding, damaging water and wastewater systems, drainage systems, roads, buildings, and other infrastructure.

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Drought

Drought is an extended period of low precipitation, surface water, or soil moisture below a long-term average. A severe drought struck most of California from 2012 to 2016, with the hottest annual average temperatures and lowest 12-month precipitation total since 1895 (Diffenbaugh et al. 2015). From 2012 to 2015, soil moisture for California as a whole dropped to its driest level in the past 1200 years (Robeson 2015). For California as a whole, the high temperatures of human-caused climate change accounted for one-tenth to one-fifth of the 2012-2014 period of the drought (Williams et al. 2015). From 2000 to 2018, the increased heat of human-caused climate change has caused half the severity of the most severe drought for the southwestern U.S. as a whole since the 1500s (Williams et al. 2020).

Under the highest emissions scenario, climate change could increase the number of dry days in southern California by five to ten days per year (Polade et al. 2014). Under the highest emissions scenario, climate change increases drought risk in southern California by 2100 to the 1% driest drought severity

experienced currently (Cook et al. 2015), increasing the probability of a drought as severe as the 2012-2016 California drought to once a year by mid-century (Diffenbaugh et al. 2015). This could cause more frequent water shortages in southern California (Pagan et al. 2016). Drought can also affect and water and wastewater system operations, water quality (Mosley 2015), and soil stability (Fernandes et al. 2015).

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Wildfire

Wildfire is a natural part of many forest, woodland, and grassland ecosystems. Climate change is intensifying the heat that drives wildfire above natural levels (Jolly et al. 2015) and altering the distribution and density of vegetation that comprises the fuel for wildfires (Gonzalez et al. 2010). These effects combine with the unnatural buildup of coarse woody debris and understory trees from decades of suppression of all fires, even natural ones (Agee and Skinner 2005).

Under a medium emissions scenario, the increased heat of continued climate change could increase fire frequency in the Mojave Desert (Mann et al. 2016) and lengthen fire season up to three weeks by 2050 (Abatzoglou and Kolden 2011), mainly from increases in exotic grasses creating a fine fuel layer (Moloney et al. 2019). This depends on increases in precipitation, which would increase spread of exotic grasses. If aridity increases under continued climate change, invasive grasses would not tend to increase, causing a lack of fuel for wildfires.

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Flash Floods

In southern California, increases in extreme rainstorms under climate change could increase probabilities of flash floods 30-40% (Modrick and Georgakakos 2015). Flood threats to infrastructure include erosion, structural damage from the force of floodwaters, damage to electrical systems, and post-flood physical deterioration of building materials.

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Tornadoes

While tornadoes are very rare in southern California, residents reported a tornado in the town of Joshua Tree in 2001. Climate change can increase the frequency of severe thunderstorms, which generate tornadoes. Under the highest emissions scenario, continued climate change could slightly increase the number of severe thunderstorm days with tornado conditions in southern California (Diffenbaugh et al. 2013).

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Insect Pests

Warmer and moister conditions, which may increase under climate change, tend to favor numerous insect pests, including termites, ants, and hornets (Sims and Appel 2017). Continued climate change under low to high emissions could increase the number of invasive termite species in southern California (Buczowski and Bertelsmeier 2017). Pests can directly infest buildings and other infrastructure and indirectly affect infrastructure by increasing risks of tree death and falling branches or trees.

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

Invasive species

Climate change can favor invasive alien plant species in temperate zone ecosystems due to increased warmth, humidity, vegetation disturbances, and atmospheric carbon dioxide (Davidson et al. 2011, Hellmann et al. 2008, Liu et al. 2017). Climate change could increase invasive red brome and Sahara mustard in the Mojave Desert (Curtis and Bradley 2015). Joshua Tree National Park is in a zone of medium to high risk of invasive alien plant and animal species under climate change (Early et al. 2016). Increases in invasive grasses would increase fire risks (Abatzoglou and Kolden 2011).

Park staff assessment – relevant to West Entrance Project:

- ☒ Yes
☐ No

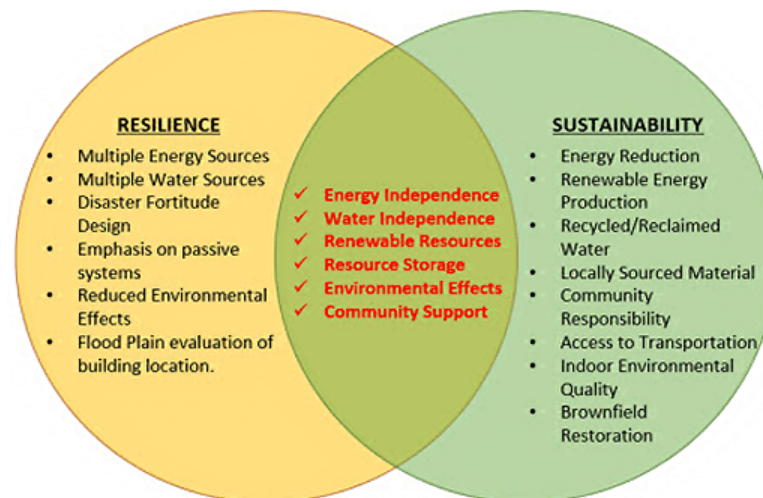
Step 2: Consider adaptation and resiliency strategies

- Review definitions of resiliency and adaptation strategies.
- Identify adaptation strategies that will help park resources respond to the hazards identified in Step 1.

Question 16 requires a screening for climate hazards followed by a review of adaptation and resiliency strategies that would be put in place to respond to these hazards. For the purposes of this report and investment planning, resilience is a property of a system or asset and generally refers to the ability of the system or asset to maintain its intended purpose following a temporary disturbance.

Adaptation strategies, in the context of built infrastructure, refers to the intentional management decision to identify, prepare for, and respond to observed or expected sustained changes in hazards, including climate change, to adjust to a sustained change in conditions.

It is important to note that resilient park operations can be supported through the use of green infrastructure such as sustainable landscaping, as well as sustainable energy, water, and building envelope solutions. The figure below illustrates this relationship.



Lists of adaptation strategies for different types of infrastructure projects in response to different hazards can be found here: [Incorporating Climate Change Adaptation in Infrastructure Planning and Design](#) (see Chapter 4, Tables 25-34). If used, these adaptation strategies will need to be modified for proposed park projects.

Buildings and assets within national parks may include cultural resources (e.g., historic and pre-historic buildings and structures). The adaptation and resiliency options for cultural resources often overlap with those defined for facilities; however, NPS has detailed specific strategies when dealing with cultural resources and climate change in national parks ([Cultural Resources Climate Change Strategy](#)). “Climate change poses an especially acute problem for managing cultural resources because they are unique and irreplaceable — once lost, they are lost forever” ([NPS Policy Memorandum 14-02](#)).

Step 3: Develop an answer to Question 16 for your specific project and location, as well as strategies to address each hazard

- An example response to Question 16 is provided below.
- You will need to identify the general type of project and modify the text below based on the hazards identified in Step 1 and the adaptation strategies identified in Step 2 for your park and project. The park response should be as project-specific as possible.
- The NPS Climate Change Response Program (CCRP) and Sustainable Operations and Maintenance Branch (SOMB) are available to help evaluate climate change hazards and resiliency strategies for your specific projects. Requests should be sent to the NPS GFIP Hazards and Risk Assistance email account; a member of the team will reply with support.

Question 16: What risks or hazards (current and projected, e.g. effects of climate change) are likely to affect this project? If applicable, what adaptation strategies and/or resiliency measures have been identified for scenarios that pose high risks to project assets?

Several climate change hazards may affect a (new building, historic building restoration, road repair, water system, other) project in Joshua Tree National Park, including hotter temperatures, drought, wildfire, and flash floods. Possible adaptation and resiliency strategies include:

- Clear any flammable vegetation or other material away from buildings.
- Avoid new infrastructure in or near intermittent water courses.
- Use site location, orientation, and design to take advantage of natural conditions such as breezes, shade, natural light, and sunshine for solar energy.
- Energy conservation and renewable energy systems to reduce fossil fuel energy use.
- Water conservation measures, including low-flow water fixtures, graywater recycling, and ground-coupled cooling systems.
- Changes in building design or building systems to maintain appropriate temperatures and humidity without increasing energy use, which would increase greenhouse gas emissions and exacerbate climate change.
- Changes in building design or post-flooding dehumidification systems, coordinating with the NPS Historic Architecture, Conservation and Engineering Center or Historic Preservation Training Center and avoiding any increase in energy use, which would increase greenhouse gas emissions and exacerbate climate change.
- Relocate any infrastructure from an area where a hazard cannot be avoided.
- Strengthen structures to prevent damage from extreme storms.
- Early detection and removal of termites or other pests or hazards.
- Weed and pest management measures to prevent new introductions from construction equipment and materials.

Step 4: Seek additional assistance if desired

Additional resources for answering question 16 and related questions can be found in:

- Appendix 1 below, which includes a full hazards checklist, providing additional links for supporting information related to each hazard.
- Appendix 2 below, which provides a map to visualize how climate is changing for the park.
- The [GFIP Guidance and Logistics](#) folder under the [Resources to Assess Risks and Hazards tab](#) includes:
 - An Excel workbook labeled [T75 Parks GFIP NRSS Supporting Materials](#) that provides links to information for natural resources to be considered during project design and construction.
 - A [FAQs – Assessing Risks and Hazards](#) document that provides detailed guidance for answering Question 16.
 - A [Natural Hazard Assessment Webinar](#) recording that provides key information, definitions, and guidance for understanding natural hazards and related resources.

The NPS Climate Change Response Program (CCRP) and Sustainable Operations and Maintenance Branch (SOMB) are also available for assistance in evaluation of climate change hazards and resiliency strategies as they relate to specific projects. Questions can be sent to the NPS [GFIP Hazards and Risk Assistance email account](#) and a member of that team will reply with support.

Appendix 1: The Climate-Related Hazard Checklist

This appendix provides an initial evaluation of climate hazards for Joshua Tree National Park according to the hazard ratings identified below. The information used to identify hazards in the checklist is mostly from regional assessments. Park and project specific information was generally not available when assessing these hazards. NPS Climate Change Response Program (CCRP) staff made an initial attempt to identify potential hazards for the park broadly (see ‘Best Professional Judgement’ column); however, park staff and project planners have more information about hazards that are likely to be applicable to a specific project.

Explanation of Hazard Ratings

Known hazard: Conditions that cause the hazard are well documented in the area where the park occurs. If applicable to the project site, these hazards should always be addressed in the project plan.

Potential hazard: Conditions that cause or underlie the hazard are known to occur nearby or are likely to occur based on studies with conditions similar to the park. If applicable to the project site, these hazards should be considered for inclusion in the project plan.

Not applicable: No evidence *was identified* showing this hazard is relevant to the park. Note this is a coarse filter evaluation; local knowledge of a hazard(s) should be used, when available.

Table 1. Climate-related Hazards Checklist

Potential Climate Hazard	Best Professional Judgment	Examples of risk or secondary hazard	Sources of General Non-site specific Data	Sources for Site Specific Data
Hotter average days and more very hot days	Known Hazard <input checked="" type="checkbox"/> Potential Hazard <input type="checkbox"/> Not Applicable <input type="checkbox"/>	<ul style="list-style-type: none"> • Road surface degradation • Lack of water due to increased water for irrigation • Increased humidity • Danger to staff 	<ul style="list-style-type: none"> • National Climate Assessment • State climate summary 	<ul style="list-style-type: none"> • National Climatic Data Center • DAYMet gridded climate data • National park historical and projected climate change
Increased drought frequency, intensity, magnitude, and duration	Known Hazard <input checked="" type="checkbox"/> Potential Hazard <input type="checkbox"/> Not Applicable <input type="checkbox"/>	<ul style="list-style-type: none"> • Limited water supply for cooling, landscaping, structural fire suppression, other equipment • Increased competition for available water and water rights conflicts • Crack/heave damage in drier soils • Increased vulnerability to wildfire (below) 	<ul style="list-style-type: none"> • Drought Monitor • National Integrated Drought Information Center • National Climate Assessment • State climate summary • 	<ul style="list-style-type: none"> • Drought Monitor • National Integrated Drought Information Center
Increased wildfire frequency, intensity, magnitude, and duration	Known Hazard <input checked="" type="checkbox"/> Potential Hazard <input type="checkbox"/> Not Applicable <input type="checkbox"/>	<ul style="list-style-type: none"> • Damage to facilities and contents • Smoke damage • Air quality dangerous to staff and visitors • Increased runoff • Increased erosion • Damage to water treatment plants 	<ul style="list-style-type: none"> • Barbero et al. 2015 International Journal of Wildland Fire 	<ul style="list-style-type: none"> • NIFC • International Wildland-Urban Interface Code

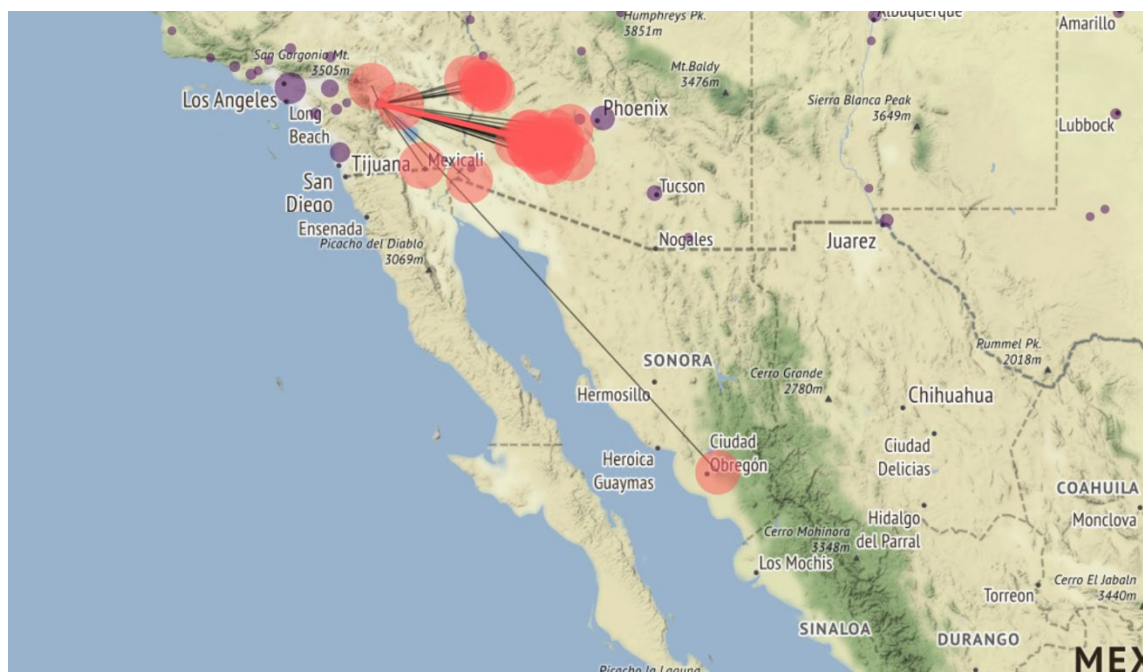
Potential Climate Hazard	Best Professional Judgment	Examples of risk or secondary hazard	Sources of General Non-site specific Data	Sources for Site Specific Data
Altered precipitation patterns, increased extreme precipitation, and changing humidity	<p>Known Hazard <input checked="" type="checkbox"/></p> <p>Potential Hazard <input type="checkbox"/></p> <p>Not Applicable <input type="checkbox"/></p>	<ul style="list-style-type: none"> • Local flooding • Mold growth • Wood decay • Drought • Fire • Groundwater change • Surface erosion • Floods (see below) • Water damage to structures from driven rain • Unstable saturated soils 	<ul style="list-style-type: none"> • National Climate Assessment • State climate summary 	<ul style="list-style-type: none"> • National Climatic Data Center • DAYMet gridded climate data • National Park historical and projected climate change •
Riverine flood/flash flood	<p>Known Hazard <input checked="" type="checkbox"/></p> <p>Potential Hazard <input type="checkbox"/></p> <p>Not Applicable <input type="checkbox"/></p>	<ul style="list-style-type: none"> • Damage or destruction of infrastructure • Stream channel migration • Stream bank erosion/extreme erosion • Safety • Water quality diminished • Damage to water source and delivery infrastructure • Changing requirements for culvert flow capacity 	<ul style="list-style-type: none"> • FEMA Flood map service 	<ul style="list-style-type: none"> • FEMA Map Service Center • Floodplain maps for HUD projects • Runoff projections (for select parks) • May require a special flood study

Potential Climate Hazard	Best Professional Judgment	Examples of risk or secondary hazard	Sources of General Non-site specific Data	Sources for Site Specific Data
Sea level change and coastal storm surge	<p>Known Hazard <input type="checkbox"/></p> <p>Potential Hazard <input type="checkbox"/></p> <p>Not Applicable <input checked="" type="checkbox"/></p>	<ul style="list-style-type: none"> • Rising sea and lake levels • Rising water – wind driven (e.g. hurricane, nor’easter) • Saltwater intrusion • Vegetation damage 	<ul style="list-style-type: none"> • NOAA SLR viewer • NOAA - Great Lakes Environmental Research Laboratory 	<ul style="list-style-type: none"> • IRMA – Coastal reports • NPS SLR viewer • Specific Hazard Assessment: Coastal Storm Surge with Climate Change Effects (requires VPN connection) • SLR reports • Great Lakes Dashboard Project
Tornadoes	<p>Known Hazard <input type="checkbox"/></p> <p>Potential Hazard <input checked="" type="checkbox"/></p> <p>Not Applicable <input type="checkbox"/></p>	<ul style="list-style-type: none"> • Building destruction • Flying debris • Storm surge • Tree fall <p>(see other categories for associated intense rainfall and floods)</p>		<ul style="list-style-type: none"> • Wind speed data – from local codes • International Building Code • FEMA Map Service Center
Pest infestation	<p>Known Hazard <input checked="" type="checkbox"/></p> <p>Potential Hazard <input type="checkbox"/></p> <p>Not Applicable <input type="checkbox"/></p>	<ul style="list-style-type: none"> • Historic/facility fabric loss • Vegetation loss • Disease vectors may increase • Termites and other woodboring pests expanding range with warming and increased humidity 	<ul style="list-style-type: none"> • USFS Forest Health Program 	<ul style="list-style-type: none"> • NPS Pest and Invasive Species Management Contacts • Forest pests in eastern parks • USFS maps

Potential Climate Hazard	Best Professional Judgment	Examples of risk or secondary hazard	Sources of General Non-site specific Data	Sources for Site Specific Data
Invasive species	<p>Known Hazard ☒</p> <p>Potential Hazard ☐</p> <p>Not Applicable ☐</p>	<ul style="list-style-type: none"> • Aquatic mussels – water intakes clogged • Vegetation (kudzu, vines) – damage buildings, kill trees, obstruct waterways 	<ul style="list-style-type: none"> • National Invasive Species Council 	<ul style="list-style-type: none"> • NPS Pest and Invasive Species Management Contacts • Early Detection and Distribution Mapping System (current distribution) • Early Detection and Distribution Mapping System (projected distribution)

Appendix 2. What Could the Park Climate Feel Like in 60 Years?

The map below can help visualize how the climate around Palm Springs could feel with continued climate change under high emissions by 2080, based on an analysis of climate model projections (Fitzpatrick and Dunn 2019). Under a high greenhouse gas emission scenario, Palm Springs then could feel similar to Arizona today. The red line shows the average of the 27 climate models; the black lines show the 27 individual projections. Smaller circles indicating closer matches. All circles (red or purple) denote cities used in the analysis. The analysis is based on twelve climate metrics, including minimum and maximum temperature and precipitation by season (spring, summer, fall, winter). More details are at <https://fitzlab.shinyapps.io/cityapp/>.



References

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National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Appendix C – Best Management Practices (BMPs)

Project: Construct New West Entrance Project

PEPC #: 83105



Appendix C – Best Management Practices

Project: Construct New West Entrance Fee Station

PEPC #: 83105

To prevent and minimize potential adverse impacts associated with the project, best management practices (BMPs) and mitigation measures will be implemented during the construction, and post-construction phases.

Measure	Responsibility
General Measures (GM)	
<p>The project construction footprint needs to remain confined within the parameters established in the compliance documents and that mitigation measures are properly implemented.</p> <p>All protection measures will be clearly stated in the construction specifications. Workers will be instructed to avoid conducting activities beyond the construction zone, as defined by the construction zone fencing. This does not include necessary temporary structures such as erosion control fencing, which may be most effective when installed outside the construction zone.</p> <p>All tools, equipment, barricades, fencing, signs, and surplus materials will be removed from the work area upon completion. Construction debris will be hauled from the park to an appropriate disposal location. Any asphalt surfaces damaged due to work on the project will be repaired to original condition. All demolition debris will be removed from the project site, including all visible concrete and metal pieces.</p> <p>Contractors will be required to properly maintain construction equipment (e.g., mufflers to minimize noise).</p> <p>A hazardous spill plan will be in place, stating what actions will be taken in the event of a spill and describing preventive measures to be implemented, such as placement of refueling facilities, storage, and handling of hazardous materials.</p> <p>All equipment on the project site will be maintained in a clean and well-functioning condition to avoid or minimize contamination from mechanical fluids. All equipment will be checked daily.</p> <p>Material stockpiling, machinery storage, and vehicle parking will be permitted only in designated areas.</p> <p>Traffic delays that result from construction activities will be limited to a 30-minute maximum in one direction through the project area.</p> <p>No lane closures will occur on the weekends from Friday 6:00 p.m. through Monday 6:00 a.m. No work will occur on recognized federal holidays.</p> <p>Work hours will be from 7:00m am to 6:00 pm. Extension of hours during the summer season requires written approval from the NPS.</p>	NPS / Contractor

<p>Week-day lane closures using one-way traffic with pilot cars and/or flaggers and 30-minute maximum delays will allow the work to continue with minimal traffic safety concerns.</p> <p>Any project-related vehicle or equipment operating on unpaved roads will not exceed a speed limit of 25 miles per hour.</p> <p>Cross-country (off-road) travel will not be authorized, except under life threatening or emergency situations.</p>	
<p>Air Quality Measures (AQ)</p>	
<ul style="list-style-type: none"> • Construction activities will be coupled with water sprinkling to reduce fugitive dust emissions. Water sprinkling will be conducted as necessary on active work areas where soil or fine particles are exposed. • Idling of construction vehicles will be limited to reduce construction equipment emissions. Unnecessary idling of all construction vehicles and equipment will be avoided throughout the construction period. • Propane generator will meet CARB standards. • NPS will obtain a permit from MDAQMD for the operation of the propane generator. 	<p>NPS / Contractor</p>
<p>Soil Measures (SM)</p>	
<p>BMPs for drainage and sediment control, as identified and used by NPS, will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. Use of BMPs in the project area for drainage protection will include all or some of the following actions, depending on site-specific requirements.</p> <ul style="list-style-type: none"> • Keep disturbed areas as small as practical to minimize exposed soil and the potential for erosion. • Locate waste and excess excavated materials outside drainages to avoid sedimentation. • Install silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material) prior to construction. • Conduct regular site inspections during the construction period to ensure that erosion control measures were properly installed and are functioning effectively. • Store, use, and dispose of chemicals, fuels, and other toxic materials in an appropriate manner. • In areas of native soil and native vegetation removal (areas without a road shoulder), the top 15 centimeters of soil will be salvaged before trenching, stored separately, and replaced once activities are complete. • Revegetate disturbed areas as soon as possible after construction is completed. • A Stormwater Pollution Prevention Plan (SWPPP) will be prepared to address all construction related activities, equipment, and materials that have the potential to affect water quality during construction. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include BMPs-such as sediment control, erosion control, construction materials, and waste management-to control the pollutants, as well as other non-stormwater BMPs. All construction site BMPs must be designed to control and minimize 	<p>NPS / Contractor</p>

the effects of construction and construction-related activities, material, and pollutants on the watershed.	
Noise Measures – (NOI)	
<p>The following measures will be employed to reduce noise from construction SCE, NPS project activity.</p> <ul style="list-style-type: none"> • Require all motor vehicles and equipment to have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise. • Limit idling of construction vehicle engines to the minimum amount of time necessary to complete the work. • Prohibit the use of unmuffled compression brakes inside park boundaries. • Prohibit the use of air horns inside park boundaries except for safety or emergencies. • Allow work on weekends/holidays only with NPS permission. 	NPS / Contractor
Vegetation Measures – (VM)	
<p>Removal of Joshua trees and other succulents will not be permitted without prior approval. In the event removal will be necessary, Joshua trees and other succulents will be salvaged and replanted within the zone of disturbance.</p> <p>To prevent the introduction of and minimize the spread of nonnative vegetation and noxious weeds, the following measures will be implemented during construction.</p> <ul style="list-style-type: none"> • Soil disturbance will be minimized to the extent possible .. • In areas of native soil and native vegetation removal (areas without a road shoulder), the top 15 centimeters of soil will be salvaged before trenching, stored separately, and replaced once activities are complete. • All construction equipment will be pressure washed or steam cleaned before entering the park to ensure that all equipment, machinery, rocks, gravel, and other materials are clean and weed free. • Fill material from outside the park will not be used without prior approval. Any necessary fill, rock, or additional topsoil will be obtained from stockpiles from previous projects or excess material from this project, if possible; if not possible, then weed-free fill, rock, or additional topsoil will be obtained from sources outside the park. NPS personnel will certify that the source is weed free. • Vehicle and equipment parking will be limited to within construction limits or within the approved staging area. • Monitoring and follow-up treatment of nonnative vegetation will be conducted after project activities are completed. <p>Individual shrubs removed during construction will be planted (i.e., installed in the soil) following construction to serve as <i>vertical mulch</i> (placement of materials upright in the soil as a beneficial erosion control measure and to facilitate the establishment of new vegetation).</p> <p>Plants overhanging into the construction zone will be pruned back rather than fully removed using the park vegetation management pruning guidelines.</p>	NPS / Contractor
Special-Status Species Measures – Desert Tortoise (Threatened)	
<p>On September 9, 2021 the USFWS approved a Biological Opinion (BO) for Activities in Joshua Tree National Park. The BO identified protection measures JTNP will implement to avoid and minimize incidental take of desert tortoises (<i>Gopherus agassizii</i>) in implementing park activities. Protective measures identified in the BO are as follows:</p>	NPS / Contractor

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| <p>1. Depending on the nature and location of the proposed action, the Park Service may conduct pre-project surveys of the action area according to the Service's current protocol or a modified protocol agreed upon by the agencies for the specific action; it may also use the regional density as determined by the Service's range-wide sampling. The Park Service will determine the appropriate course of action through discussions with the Service. The purpose of these surveys is to assess the number of desert tortoises that may be present for environmental analysis and to determine the local distribution of desert tortoises, in case such information would be useful for siting of the project. If the proposed action will occur entirely within areas that do not support the normal components of habitat for the desert tortoise (e.g., highly disturbed areas, etc.), the Park Service does not need to conduct pre-project surveys of the action area.</p> <p>2. In past consultations with the Park Service, the Service has approved authorized biologists to implement protective measures and handle desert tortoises on a project-by-project basis. The Park Service will follow the process to approve authorized biologists described in the Service's Desert Tortoise Field Manual (2009). Upon completion of this consultation, any person approved by the Service to undertake the duties of an authorized biologist for Park Service actions may also perform those duties on future actions within JOTR if those actions are within the scope of this biological opinion. The Park Service may propose an authorized biologist to conduct additional duties beyond those that the Service initially authorized (e.g., conduct full health assessments, attach and remove transmitters, etc.) by contacting the Service for approval. If the Park Service determines that an authorized biologist is not performing his or her duties in a satisfactory manner, it will notify the Service at the earliest possible time it makes this determination. In addition, the Park Service will notify the Service when an authorized biologist is necessary for each project and will maintain a record of all authorized biologists.</p> <p>3. The Park Service will ensure that authorized biologists and monitors implement appropriate measures to protect desert tortoises, including exclusion fencing and monitoring as necessary. Authorized biologists must have sufficient training and experience to resolve any issue that may arise regarding the specific approved activity on which they are working. For example, if the approved activity involves the handling of desert tortoises, at least one authorized biologist must have sufficient training and experience to move a desert tortoise safely according to the Service's guidance provided in the Desert Tortoise Field Manual (Service 2009) or most recent guidance. Monitors may work under the supervision of authorized biologists. Monitors may handle desert tortoises; the authorized biologist will determine the protective measures the monitors may conduct and the level of supervision the monitors need to complete each task. The Park Service will determine the appropriate use of authorized biologists on a given project in coordination with the Service during review of the activity form.</p> <p>4. The Park Service will ensure that authorized biologists and monitors conduct clearance surveys to remove desert tortoises from work areas prior to the onset of ground-disturbing activities. Desert tortoises removed from work areas may be moved from harm's way to the nearest suitable habitat. The Park Service will follow the Service's most current guidance for handling, moving, and translocating desert tortoises.</p> <p>5. The Park Service will implement measures to reduce the attractiveness of work sites to common ravens (<i>Corvus corax</i>) and other desert predators. These measures will include control of attractants (food, water, and shelter) and implementing techniques such as devices to discourage predators from using project-related structures. These efforts will be monitored and reported. The Park Service will work with the Service to adapt techniques to reduce the risk of attracting predators to work sites.</p> <p>6. The Park Service will implement an education program for workers to ensure they are aware of the general behavior and ecology, protective measures, information on the legal protection, and reporting requirements for the desert tortoise.</p> | |
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<p>7. The Park Service will implement best management practices as described in its general management plan (NPS 1995) and resource stewardship strategy (NPS 2021) to reduce the likelihood that its actions will introduce non-native invasive plant species.</p> <p>8. In any situation where a desert tortoise places itself in danger (e.g., it enters a work area), a trained biologist staffed or permitted by the Park Service will ensure that the desert tortoise is safe from harm's way. The biologist will allow the desert tortoise to leave the area on its own accord. If the animal does not leave the area on its own accord within 15 minutes, then the trained biologist may remove and move the animal to a safe location.</p> <p>9. The Park Service will ensure that habitat restoration will occur if activities cause disturbance to desert tortoise habitat. For example, if construction activities for a transmission line causes disturbance to habitat, the Park Service will ensure the development of a habitat restoration plan and determine an appropriate timeframe to complete the habitat restoration. Habitat restoration includes, but is not limited to, alleviating soil compaction, collecting seeds for restoration work, replanting, and adding rocks and woody debris to a disturbed area.</p> <p>10. The Park Service will require all personnel involved in activities to inspect the ground under vehicles any time a vehicle or construction equipment is parked in desert tortoise habitat outside areas with desert tortoise exclusion fencing. If a desert tortoise is present, it may move of its own accord. If it does not move within 15 minutes, an authorized biologist or trained staff may remove and relocate the animal to a safe location. The authorized biologist or staff will be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes, which could be harmful to the animal.</p> <p>11. The Park Service will continue to manage 85 percent of JOTR as federally designated Wilderness areas in accordance with the Wilderness Act of 1964 (Wilderness Act), as amended (16 U.S.C. 1131-1136). The Wilderness Act does not allow motorized or mechanical use; transport is generally limited to foot or horseback travel with occasional helicopter landings associated with search and rescue and wildland fire. Any prohibited uses and other activities proposed in Wilderness areas will be reviewed and analyzed by the JOTR Wilderness Committee for approval.</p> <p>In addition to the protective measures identified in the BO, additional measures to minimize harm include:</p> <ul style="list-style-type: none"> • Vehicle use will adhere to the following. <ul style="list-style-type: none"> ○ Speed Limits. Any project-related vehicle or equipment will not exceed a speed limit of 25 miles per hour. Workers will be made aware of this limit. ○ Off-road travel. Off-road, cross-country travel will not be authorized, except in life-threatening or emergency situations. ○ Tortoises on roads. If a tortoise is observed on or near the road, vehicular traffic will stop and the tortoise will be allowed to move off the road on its own, unless it will be moved regardless of construction activities in accordance with the park's permit for handling in association with research activities under Section 10(a)(a)(A) of the ESA. • A tortoise exclusion fence will be constructed around the construction perimeter to exclude tortoises from entering the site. 	
<p>Wildlife and Nesting Birds (W/NB)</p>	
<ul style="list-style-type: none"> • Preconstruction surveys for nesting birds will be conducted during the nesting season (February 1 to August 31 and as early as January 1 for raptors). Preconstruction nesting bird surveys will be conducted by a qualified avian biologist prior to the initiation of construction. Nesting bird surveys will be conducted within 7 days prior to construction. Appropriate no-activity buffers will be established by a qualified biologist around active nests (generally 250 	<p>NPS / Contractor</p>

<p>feet for passerines and 500 feet for most raptors) until it has been determined by a qualified biologist that the young have fledged or the nest has failed.</p> <ul style="list-style-type: none"> • A wildlife monitor would conduct pre-construction surveys to relocate if possible wildlife species that are in the construction area, and will be present during major ground disturbing activities. 	
Recreation Measures (RM)	
<p>JTNP will monitor headlight beam intensity from queued cars waiting to exit the West Entrance station to determine if there are headlight beam impacts that are new with the project that were not existing under current conditions. If impacts are apparent, JTNP would work with the community to identify potential treatments</p> <p>Visitors and bus drivers will be advised in park announcements, programs, and publications that there will be temporary inconveniences from construction work on the road.</p> <p>In all cases, traffic control and safety will be maintained.</p> <p>The construction contractor will include proposed daytime work protocols in its Safety Plan to show how traffic monitoring and controls will be implemented.</p>	NPS/ Contractor
Night Sky (NS)	
<p>Minimize lighting during construction. If necessary during construction, lighting will be directed downward and be shielded.</p> <p>Outdoor lighting would illuminate only to the minimum necessary for park staff to safely navigate the complex at night.</p> <p>Outdoors, only fully shielded light fixtures would be used.</p> <p>Indoor would follow park lighting protocol with lumens below 400 and color temperature below 2700 kelvin.</p>	NPS / Contractor
Cultural Resource Measures (CR)	
<p>If any buried cultural resources are inadvertently discovered during project related ground disturbance, work will be temporarily halted within 100 feet of the discovery. The site will be secured and park personnel will be consulted according to 36 CFR 800.13 and 43 CFR 10.</p> <p>If human remains are inadvertently discovered during project construction, the employee in charge will immediately notify JTNP cultural resources staff by telephone and provide written confirmation of the discovery to JTNP. Work will cease in the area of the discovery and all reasonable efforts will be made to protect the remains and any other cultural items associated with the human remains. Work will not resume until JTNP provides notification that work may proceed.</p> <p>If an inadvertent discovery of human remains or funerary or sacred objects occurs during construction, work will be halted immediately. In compliance with the Native American Graves Protection and Repatriation Act of 1990, NPS will notify and consult concerned American Indian Tribal representatives for the proper treatment of any remains and potentially associated cultural materials discovered.</p>	NPS / Contractor
Park Management Measures	
<p>The area of disturbance will be minimized to the greatest extent to minimize the likelihood of devegetated road edges becoming de facto parking for park visitors.</p>	NPS / Contractor



National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Attachment D – Memorandum of Agreement

Project: Construct New West Entrance Project

PEPC #: 83105

**Draft - MEMORANDUM OF AGREEMENT
BETWEEN
JOSHUA TREE NATIONAL PARK
AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING
CONSTRUCTION OF A NEW FEE COMPLEX
AND
ASSOCIATED SITE IMPROVEMENTS AT THE WEST ENTRANCE**

WHEREAS, Joshua Tree National Park (the Park) is planning to construct a new fee complex one-half mile inside the park's West Entrance, consisting of an expanded roadway, four fee booths and a staff support building with parking; install fee booth shelters with solar collectors that would provide power to the complex; to remove the existing fee booth; and to complete accessibility improvements throughout the project area, hereafter referred to as the Project, and that such a project meets the definition of an undertaking as defined in 36 CFR 800.16(y), and as such must meet the requirements of Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, the Park has defined the area of potential effect (APE) for the undertaking to be the one-mile of East West Highway between Mile Marker 34 and park's boundary, with a 100-meter buffer; and

WHEREAS, the Park has determined that the undertaking will have an adverse effect on the West Entrance Mission 66 Historic District which is eligible for listing in the National Register of Historic Places (NRHP) under criterion A for its association with the National Park Service's Mission 66 program and under Criterion C for its expression of the Mission 66 principles, with a period of significance of 1964; and

WHEREAS, the park has consulted with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, the Park has consulted with its 15 traditionally associated Native American communities and invited them to participate in this memorandum of agreement (MOA) as concurring parties, and they have declined; and

WHEREAS, the Park sought and considered the views of public on the proposed project during a comment period between August 18, 2021 and September 17, 2021; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), the Park has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, the Park evaluated two (2) other alternatives that either fail to address project objectives and/or result in more pronounced impacts the West Entrance Mission 66 Historic District; and

NOW, THEREFORE, the Park and the SHPO agree that the project shall be implemented in accordance with the following stipulations in order to take into account the effects of the Project on historic properties.

STIPULATIONS

I. STANDARDS AND QUALIFICATIONS

Pursuant to Section 112(a)(1)(A) of the National Historic Preservation Act (54 U.S.C. § 306131(a)(1)(A) and 36 CFR § 800.2(a)(1), the Park will ensure that all work carried out in accordance with this agreement will be done by or under the direct supervision of appropriate historic preservation professionals who meet the *Secretary of the Interior's Professional Qualifications Standards*. The Park will ensure that contractors retained for services also meet these professional qualifications standards.

II. DESIGN REVIEW

The park shall provide the SHPO with 90% Construction Drawings for review and a description of new construction prior to final drawings. The SHPO will review and provide comment within 30 days. The Park will consult further if necessary based on the SHPO's review of the 90% Construction Drawings.

III. MITIGATION MEASURES

A. Preservation and Restoration of Mission 66 Entrance Monuments

The Park shall complete preservation and restoration work on the eligible Mission 66 monuments at the North, South, and West entrances, including repairing mortar failure between the concrete masonry units (CMU) and repairing the deteriorating mortar caps. All three entrances were constructed in the same year and are eligible for the National Register of Historic Places under the same area of significance; preservation work shall promote the longevity of the monuments and restoration work shall improve the integrity of the monuments by improving the integrity of setting and design, lessening the overall adverse to the West Entrance Mission 66 Historic District and improving the overall integrity of the set of historic districts. The Park shall provide scopes of work for each project before work begins and provide a review of work completed annually under the reporting process described in Stipulation IV. All work on the monuments shall be completed in accordance with the Secretary of the Interior's Standards and shall include the following work:

1. The Park shall remove sediment which has accumulated against the monuments since their construction and shall replace sediment where it has eroded.
2. The Park shall remove vegetation which is growing too closely and may be undermining, destabilizing, or uprooting the monuments.
3. The Park shall grow in its plant nursery and plant native vegetation where appropriate to improve views and the natural setting, and to mitigate social trailing adjacent to the monuments.
4. Restoration work shall be completed to address previous repairs which failed to match the historic mortar and to remediate and repair staining and discoloration of the CMU from past maintenance efforts which used improperly pigmented mortar and cleaning techniques. Reuse of original materials shall be prioritized rather than defaulting to replacement in kind whenever feasible.
5. The park will fabricate and install a "Leaving Joshua Tree National Park" sign consistent with the original Mission 66 design to be installed at the South Entrance, where the previous sign was destroyed by a vehicle collision in 2014.

B. Development of Mission 66 Web Materials

The Park shall create a page on its website (<https://www.nps.gov/jotr/>) providing information about Mission 66, describing Mission 66 efforts at Joshua Tree, communicating to visitors where they can see Mission 66 resources in the Park, including the entrance monuments, and directing visitors to resources where they may find additional information.

C. Inclusion of Mission 66 Information on Joshua Tree National Park Mobile App

The Park shall include information about Mission 66 and the West Entrance monument on the "Place Asset" page for the West Entrance in the Joshua Tree National Park smartphone App.

IV. ADMINISTRATIVE STIPULATIONS

A. Inadvertent Discoveries

If during construction previously unknown archeological resources are discovered, all work in the immediate vicinity of the discovery shall be halted and the procedures of 36 CFR Part 800.13 followed. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, the regulations implementing the Native American Graves Protection and Repatriation Act (43 CFR Part 10) shall be followed.

B. Timeline for Completion of Mitigation Measures

The Park will complete all mitigation measures prior to the expiration of the MOA (five (5) years from execution of this agreement).

C. Duration

This MOA will expire five (5) years from execution of this agreement. Prior to such time, the Park may consult with the SHPO to reconsider the terms of the MOA and amend it in accordance with Administrative Stipulation F below.

D. Annual Reporting

The Park shall provide to the SHPO annually a summary report of the work undertaken pursuant to the terms of this Agreement in the preceding calendar year for the duration of the agreement document. This report will be provided via email and in conjunction with the annual report required under the 2008 Programmatic Agreement between the NPS, the ACHP, and the National Council of State Historic Preservation Officers.

E. Dispute Resolution

Should either signatory to this MOA object at any time to any actions proposed or the manner in which the terms of the MOA are implemented, the Park and SHPO will consult to resolve the objection. If the Park determines that such objection cannot be resolved, the Park will:

1. Forward all documentation relevant to the dispute, including the Park's proposed resolution, to the ACHP. The ACHP shall provide the Park with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the Park will prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, and provide the ACHP and SHPO with a copy of this written response. The Park will then proceed according to its final decision.
2. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, the Park may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Park will prepare a written response that takes into account any timely comments regarding the dispute from the SHPO and provide the SHPO and the ACHP with a copy of such written response.
3. The Park's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

F. Amendments

The MOA may be amended when such an amendment is agreed to in writing by the signatories. The amendment shall be effective on the date a copy signed by all of the signatories is filed with the ACHP.

G. Termination

If either signatory to the MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatory to attempt to develop an amendment per Stipulation F, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, either signatory may terminate the MOA upon written notification to the other signatory.

Once the MOA is terminated, and prior to work continuing on the undertaking, the Park must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The Park will notify the SHPO as to the course it will pursue.

H. Anti-Deficiency Act

The Park's obligations under this MOA are subject to the availability of appropriated funds, and the stipulations of this MOA are subject to the provisions of the Anti-Deficiency Act (31 USC Section 1341). The Park will make reasonable and good faith efforts to secure the necessary funds to implement this MOA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs the Park's ability to implement the stipulations of this MOA, the Park will consult in accordance with the amendment and termination procedures found in Stipulations VII and VIII of this agreement.

Execution of this MOA by the Park and SHPO and implementation of its terms evidence that the Park has taken into account the effects of this undertaking on historic properties and has afforded the ACHP an opportunity to comment on the Undertaking and its effect on historic properties.

AUTHORIZING SIGNATURES

Joshua Tree National Park

By: _____
David Smith
Superintendent, Joshua Tree National Park

Date: _____

California State Historic Preservation Office

By: _____
Julianne Polanco
California State Historic Preservation Officer

Date: _____