



Congestion Assessment

**Joshua Tree
National Park**

FINAL

September 2017

WASO Congestion Management
Program

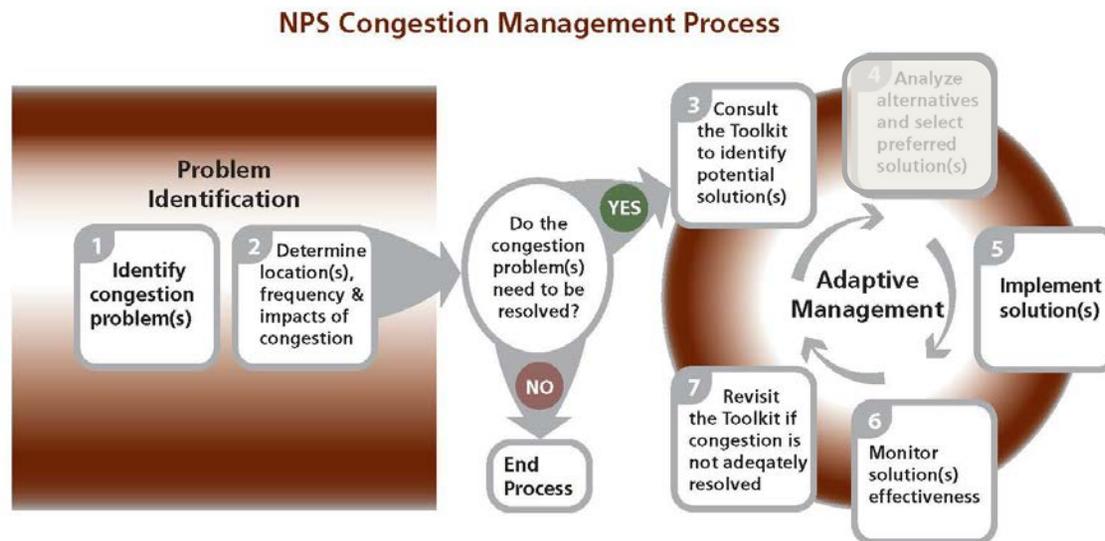
National Park Service



Congestion Assessments Description

Congestion Assessments provide short-term technical transportation support to national parks, in cooperation with regional transportation coordinators. Parks with congestion face difficult challenges that affect visitor experience, resources, safety, asset management and park operations.

These assessments use the first three (3) steps in the 7-step Congestion Management Toolkit process. Assessments use a structured approach to exploring high-level park congestion issues and information, then matches those issues with a wide range of potential congestion mitigation tools at the end of the report. Assessments are not decision-making documents or transportation plans. Post-assessment technical support is available from regional transportation coordinators, the Denver Service Center, Federal Lands Highway (FHWA) and the Volpe National Transportation Systems Center.



For more information about the Congestion Management Program and related technical support, please contact Linda MacIntyre, Program Manager at 303 969-2483. The Congestion Management Toolkit is at www.nps.gov/transportation/pdfs/NPS-CMS_Toolkit.pdf.

Figure 1. Overview of NPS Congestion Management Process

Background

Brief Description of the Park

Joshua Tree National Park lies along the east-west transverse ranges of the Little San Bernardino Mountains in southern California. The southern boundary of the park follows the base of these mountains along the northern edge of the Coachella Valley. The northern boundary is defined by the Morongo Basin. Ecologically, Joshua Tree National Park lies at the convergence of two deserts—two large ecosystems whose characteristics are determined primarily by elevation. Below 3,000 feet, the Colorado Desert encompasses the eastern part of the park and features natural gardens of creosote bush, ocotillo, and cholla cactus. In the higher elevations, where more moisture and cooler temperatures are more prevalent, the special habitat of the Joshua tree is found.

The park is home to a fascinating diversity of desert plants and animals. More than 900 species of flowering plants have been identified, with the most distinctive being the ocotillo, the cholla, and the Joshua tree. The park also preserves more native palm oases than any other unit in the national park system. These oases support vegetation and wildlife distinct from other species found in the park. The park also contains highly diverse fauna. More than 250 species of birds have been recorded at Joshua Tree National Park, as have many unique species of reptiles, amphibians, mammals, and invertebrates.

The park lands include a rich and diverse cultural history. Human occupation dates to the early Holocene period, with what is known as Pinto culture; human occupation continues throughout the historical era with tribes known today as Cahuilla, Chemehuevi, Mojave, and Serrano. In the last quarter of the 19th century, European American surveyors, cattlemen, miners, and homesteaders began to arrive and, alongside native peoples, created a set of enduring social and cultural legacies for these lands. Joshua Tree National Park protects numerous archeological sites and materials associated with at least four overlapping ethnographic native cultures—the Cahuilla, Serrano, Chemehuevi, and Mojave Indians. Other historic sites preserve information on the history of the processing of gold ore, cattle ranching, rustling, and homesteading of the southwestern deserts.

On August 10, 1936, President Franklin D. Roosevelt established Joshua Tree National Monument as a unit of the national park system through a Presidential Proclamation. In 1984, the monument was designated as part of a biosphere reserve system that included Joshua Tree and Death Valley National Monuments, Anza Borrego Desert State Park, Santa Rosa Mountains Wildlife Management Area, and Deep Canyon Research Center. In 1994, the California Desert Protection Act added 234,000 acres (including 163,000 acres of new wilderness) to the park, and re-designated the area as Joshua Tree National Park.

The park boundary currently contains 772,676 acres in federal ownership and 19,834 acres of nonfederal lands. Of these lands, 595,370 acres are designated as wilderness and 70,557 acres of potential wilderness. The park lies within both San Bernardino and Riverside

counties approximately 100 miles from the Los Angeles metropolitan area—more than 18 million people live within a three-hour drive of the park. The natural desert expanse of the park provides ideal conditions for campers, photographers, star gazers, naturalists, as well as anyone seeking space for quiet introspection, exploration, or outdoor learning. In addition, the extensive granite rock outcrops, boulder piles, desert mountain ranges, and canyons create a world-class destination for rock climbers, as well as hundreds of miles of scenic trails for hikers and equestrians.

Gateway Communities and Tourism: Trends and Planning Efforts¹

The park is located within both San Bernardino and Riverside counties approximately 100 miles from the Los Angeles metropolitan area—more than 23 million people live within a three-hour drive of the park. San Bernardino County is expected to reach 2.66 million residents by 2035, growing by approximately 27% between now and then. Riverside County is expected to reach 3.3 million residents by 2035, growing 33%.

In Riverside County, where most of Joshua Tree is located, 23% of the land is dedicated to recreation and open space. The county's diverse geography and extensive natural resources, as well as its proximity to major economic and population centers, provide unique opportunities for tourism and recreation for residents and visitors alike. While Joshua Tree is not the only public land in the county, all are under increased visitation pressure due to population growth. The surrounding communities hope to expand access to public lands and public lands tourism in the area. The recently designated Sand to Snow and Mojave Trails National Monuments, both of which border the park to the west and north-east, are two examples of new public lands opportunities for residents and visitors.

Demand for public lands that can be used for camping, hiking, climbing, and other outdoor pursuits is strong and continues to increase. Several groups in the community are looking at options to expand these opportunities for visitors and residents. The Tortoise Rock Casino is considering creating a campground/RV camping in 29 Palms, and another private group is looking to open a campground near Utah Trail just outside the park's north entrance. Air BnB and similar online businesses have created private camping opportunities in the town of Joshua Tree, offering tent camping and RV parking on open lots within community neighborhoods. These new camping opportunities could reduce some demand for camping inside the park.

Transportation-Related Infrastructure

Major automobile transportation routes in the Park include the east-west Park Boulevard (25.5 miles) and north-south Pinto Basin road (35.5 miles). A variety of campground access roads, spur roads leading to trailheads, access roads, and administrative roads bring the total number of paved road miles to 80.3 miles. From the time of the last Roadway Inventory Program (RIP) at Joshua Tree in December

¹ http://cms.sbcounty.gov/Portals/21/Resources%20Documents/CIR_2015_Report.pdf;
https://www.thecommunityfoundation.net/images/pdfs/RS_CIR_2014.pdf

2015, 80.7% of the paved roads in the park were described in good to excellent condition. In contrast, 68.6% of paved parking areas in the park were described as being in good to excellent condition in the RIP report. Road widths range from 20-25 feet with narrow shoulders. There are no bicycle lanes within the park.

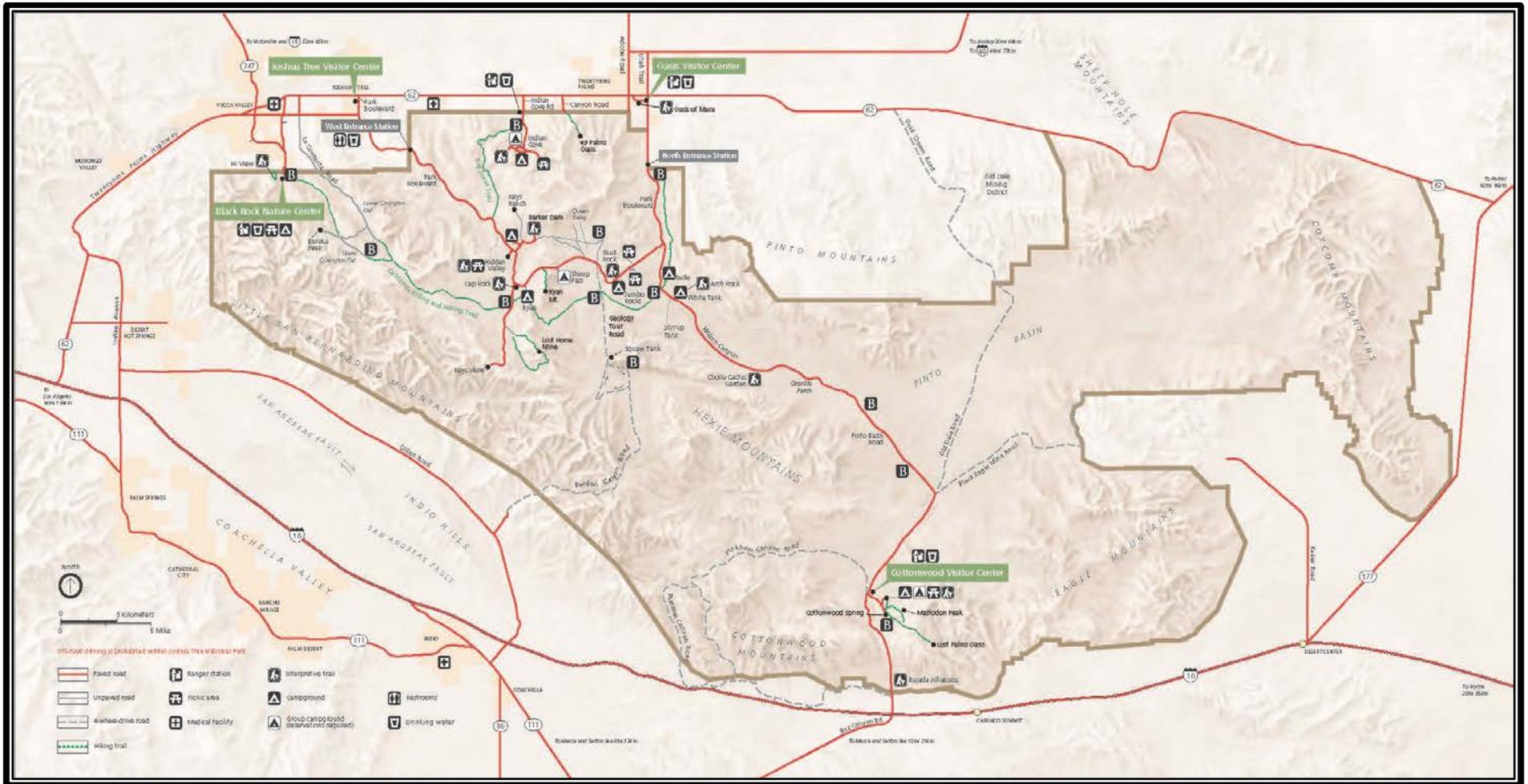
The park also has 111 miles of unpaved road. While an 18-mile geology motor tour is passable for most passenger vehicles, a majority of these 111 miles of unpaved road can only be accessed by high clearance vehicles and/or mountain bicycles. The park currently has 2,158 total parking spaces within the park. 577 of these are used for camping facilities and 73 are considered RV spaces.² Some of the parking facilities in the list of 2,158 parking spaces are administrative and/or do not account for parallel RV spaces that could accommodate multiple cars.

Three main entrances access the park; the west entrance closest to the community of Joshua Tree, the north entrance outside of the City of Twentynine Palms, and the south entrance near Interstate 10 and the Cottonwood area of the park. Each of these three entrance stations have one fee collection booth. The vast majority of visitors to Joshua Tree come via private passenger vehicles, and visitation is concentrated in about 10% of the park along Park Boulevard adjacent to Joshua tree forests and boulder fields.

Joshua Tree will pilot a shuttle system beginning in the fall of 2017. The pilot proposes to utilize 22 passenger vehicles with 30-minute headways within the park and 2-hour headways for trips accessing Twentynine Palms and Joshua Tree. The 30-minute shuttle will access Barker Dam, Intersection Rock, Hidden Valley, Ryan Mountain, and Jumbo Rocks. The system will operate daily starting in the spring of 2018 between 8:00AM and 8:00PM. Service beyond May 2018 will be determined based on the evaluation of the pilot season.

² JOTR Parking Spaces Summary last updated 2-23-2017 (Lutz)

Figure 2. Joshua Tree Park Map Overview



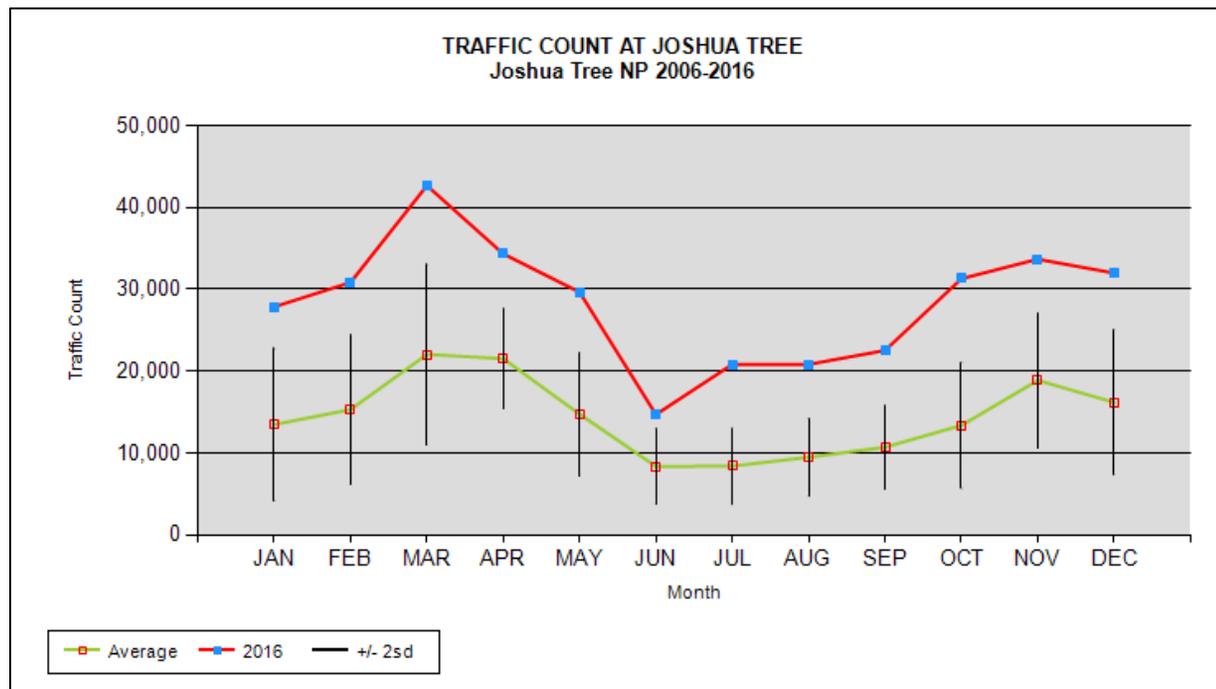
Visitation Trends

NPS Public Use Statistics

NPS Public Use Statistics Office (PUSO) data on overall recreation visitation was reviewed in preparing this report. Recreation visitation is derived from a formula that uses vehicle counts, reduces those counts slightly to account for non-recreational vehicles, and then multiplies the remaining vehicles by a people-per-vehicle multiplier to get a recreation visitation number.

Visitation at JOTR ranged from 1,434,976 in 2010 to 1,383,340 in 2013 showing a minor decline per year. But in 2014, visitation spiked to 1,589,904 and has spiked even higher the succeeding years. The Average Annual Growth Rate (AAGR) of recreation visitation at JOTR was 12.43% between 2010 and 2016. The AAGR for all NPS units in California and the Pacific West Region for the same period was about 2%. This means JOTR visitation has risen at a significantly higher rate than most NPS units in the same state and those in the same region (See Figure 3). In the last two years JOTR has seen about a 25% growth in visitation each year.

Figure 3. Visitation Increase Over Ten Years at Joshua Tree Entrance (West Entrance)



2010 Visitor Survey

According to the park's 2010 Visitor Study, United States visitors comprised 81% of total visitation during the survey period, with 62% from California. International visitors were from 19 countries and comprised 19% of total visitation. Frequency of visits fifty-six percent of visitors were visiting the park for the first time in their lifetime. Twenty-two percent had visited five or more times in their lifetime. Age Twenty-eight percent of visitors were 56 to 70 years of age, 25% were 26 to 40 years old, 11% were 15 years or younger, and 6% were 71 years or older. Thirty-eight percent of visitor groups were aware of the Congressionally designated wilderness in Joshua Tree NP. Eighteen percent of visitor groups visited the Congressionally designated wilderness areas during this visit to the park. Most visitor groups (87%) obtained information about the park prior to their visit from the park website (55%), and most (93%) received the information they needed. Seventy-two percent of visitor groups would use the park website to obtain information for a future visit. For 49% of visitor groups, the park was one of several destinations, and for 43%, the park was the primary destination. Six percent of visitor groups were residents of the area (Yucca Valley, Joshua Tree, and Twentynine Palms). The most common primary reason for visiting the park area among non-resident visitor groups was to visit the park (75%). Fifty-seven percent of visitor groups stayed overnight in Joshua Tree NP or in the surrounding area (Yucca Valley, Joshua Tree, and Twentynine Palms), of which 35% stayed two nights inside the park and 33% spent one night in the surrounding area. Seventy-two percent of visitor groups tent camped in a developed campground in the park, while 36% of visitor groups were RV/trailer camping outside the park in the surrounding area.

Information from Previous Planning Efforts

The following completed plans and documents served to inform development of the recommendations in this report. Further, they will need to be considered if the park chooses to pursue any of the recommendations, and in their continued long-term visitor use management planning efforts.

2015 Foundation Document

The Foundation Document identifies the park's resources and values that are important enough for the park to be included as a unit of the national park system. The value of providing accessible and diverse opportunities in a remote desert to a large and burgeoning urban population is applicable to the congestion assessment process. High-priority planning needs identified in the document include, but are not limited to, a Cottonwood Comprehensive Site Plan, a Strategic Plan, a Visitor Use Study, and a Long-Range Interpretive Plan. A greater understanding of park visitation patterns and visitor use needs of surrounding communities is also called for in the Foundation Document.

Other Relevant Plans

1998 General Management Plan Supplemental EIS
 2001 Business Plan
 2003 Visitation Counting Instructions
 2010 Visitor Study
 2011 Pinto Basin EA
 2012 Black Rock EA
 2014 Resource Stewardship Strategy
 2014 Transit Feasibility Study
 2014 Transit Service Business Plan
 2015 Roads Inventory and Condition Assessment of Paved Routes
 2015 Joshua Tree Administrative History
 2017 Economic Benefits (JOTR News Release)
 2017 Visitation Increase (JOTR Briefing Statement)
 2017 Cottonwood Visitor Center Scoping
 2017 Visitation Record Number (JOTR News Release)

Unfunded Transportation PMIS			
PMIS	Status	Title	Comments
233636A	Planned 2019	Create and Identify Bus Stops for Pilot Transportation Service	<i>Not formulated. Not submitted for review</i>
237972B	Planned 2017	Complete Final Wayside Exhibit Plan for Enhanced Visitor Enjoyment	<i>Not formulated. Region-reviewed</i>

PMIS Projects Formulated for Funding			
PMIS	Status	Title	Comments
242905	Formulated for FY19	Repair, Rehabilitate and Delineate 4 miles of the Geology Tour Road for Visitor Enjoyment	<i>Region reviewed on 05/30/2017</i>

242925	Formulated for FY20	Rehabilitate, Revegetate, Restore & Delineate Roads & Parking at Split Rock & Live Oak Picnic Areas	<p><i>Region-reviewed on 5/31/2017.</i></p> <p><i>Rehabilitate, Re vegetate, restore and delineate 35 informal pullouts on 0.54 miles of Split Rock day use route #200 FMSS # 19814 and 0.38 miles of Live Oak day use route # 201 FMSS # 19816. Approximately 2000 boulders will be needed for delineation of the road and parking areas to reduce the impact from illegal parking and continued resource damage. Re-vegetate impacted areas with native plants to reduce the visual impact and restore the area back to its native condition. This component represents work covered by child work orders of FMSS Parent WO 19241614 with target start dates in FY 2017."</i></p>
242930	Formulated for FY20	Replace Deteriorated or Non-Conforming Signs Along Park Routes 11, 12, 13, 212 A, 101, 213, & 917	<p><i>Region reviewed on 05/30/2017</i></p>

In addition these planning efforts are also underway or anticipated:

- Operate and Evaluate 2-Year Pilot Visitor Shuttle Service from Local Communities to Park Locations (Implement Sept. 2017)
- Development Concept Plan to Relocate West Visitor Entrance Station
- WASO-NRSS Visitor Use Research Study (summer 2017-fall 2018) including seven roadside counters, 6 trail counters and onsite evaluations of parking lot use and general visitor use.
- A Pilot Incident Command deployed the “2017 Spring Operations” requiring a minimum of one shift per pay period for all personnel to assist with traffic control at fee booths and main parking lots and trails heads. This effort will likely be modified and continues in 2018.
- Visitor centers have started to deploy folding tables and chairs outside to relieve crowding inside and expand the ability to assist basic park orientation; the park is looking at setting up “pop-up” information booths within the park as well.
- Resource and facilities staff are collaborating to better demarcate parking areas and use signage to mitigate out of bounds parking.

- A pilot shuttle system will launch February 2018 to determine if this can help relieve long entrance station lines and parking congestion, improve visitor experience, and protect resources.
- Workloads have been re-prioritized to address capacity issues; this is impacting all other operations and project commitments.
- Plans are underway to place select campgrounds under a reservation system.
- The park is considering identifying select backcountry campsites and placing those on a reservation system.
- Cottonwood Visitor Center replacement and likely expansion is scheduled for FY20-22.
- Hiring/recruiting efforts to decrease workload on regular full-time staff. (Hiring GS-3 staff to staff buses/assist with increased workload, increase outreach to volunteer staff to fill critical roles, etc.)

The outcomes of these efforts will influence the long-term congestion management strategies the park chooses to pursue.

Congestion Problems: Locations, Frequency and Impacts

Visitation at Joshua Tree National Park has increased by 80% from 2013 (1,383,340) to 2016 (2,505,286). January 2017 numbers show a 20% increase from January 2016 visitation numbers; based on recent precipitation resulting in a “super bloom.” This increase in visitation is also likely correlated with increasing popularization of desert destinations and growth in nearby population centers. Median home prices near the park are easily 60% less than all surrounding urban areas, enticing more people to move to the area.

Total visitor parking park-wide is 1,851 spaces; 1,274 in parking lots and pull outs, and 577 within campgrounds. Only 722 parking spots are at attraction sites (trailheads, picnic areas, climbing areas). Further, today the formal parking spots, which were developed in the 1990s, are inadequate. Busy days within the park can play host to over 4,000 vehicles all vying for the same parking spaces.³ When designated parking lots and campgrounds in the park fill to capacity, these activities spill over into illegal use of backcountry roads for car-camping, increased off-road parking, and off-road vehicle incidents.

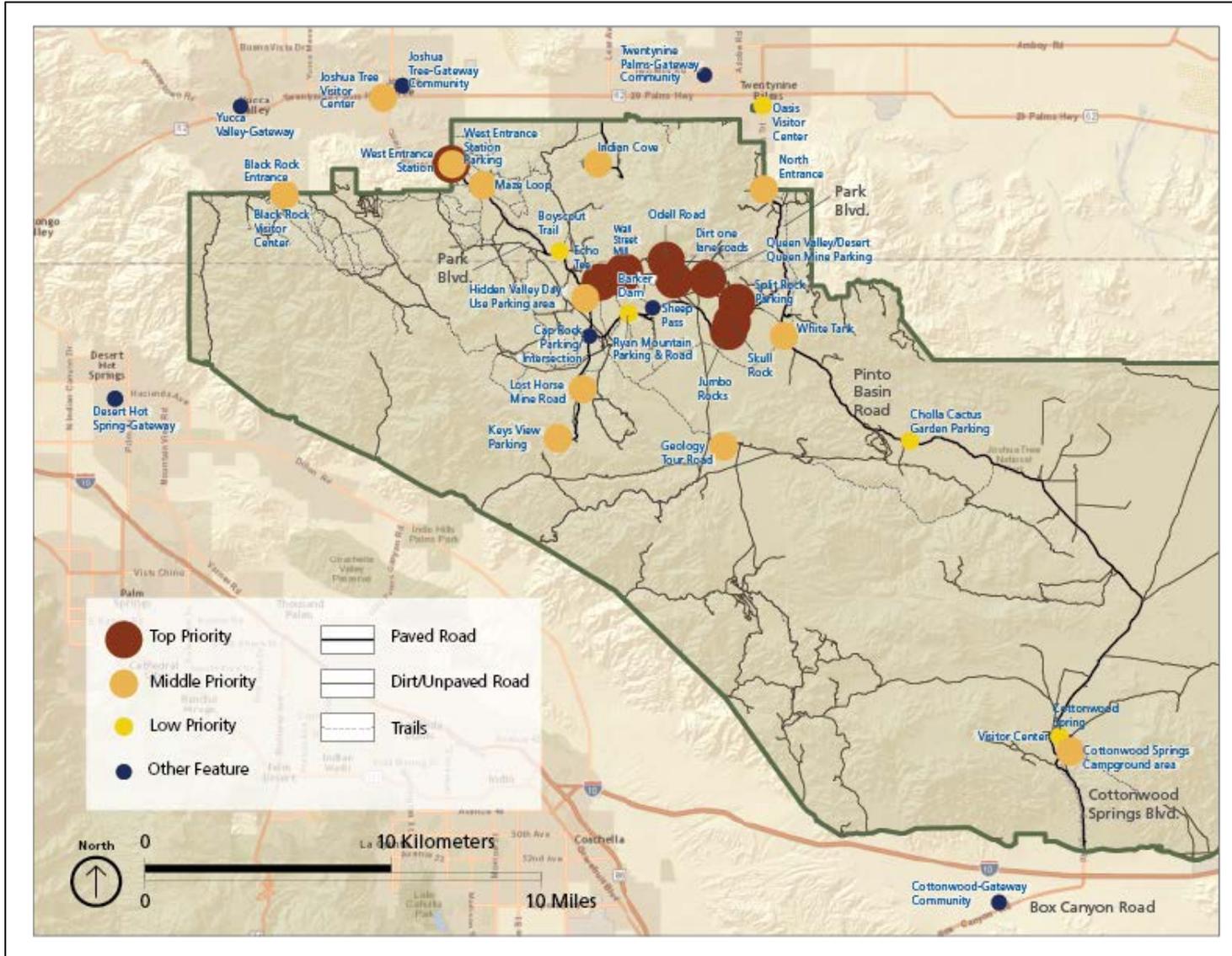
This congestion-related spill-over activity causing lasting damage vegetation and soils, which is expensive to rehabilitate in a desert environment. Additionally, the park is experiencing record levels of other illegal activities that are also damaging resources. These include graffiti on park facilities and on rock formations, rock piling, artifact looting, out-of-bounds camping, illegal campfires, drone-flying, dogs off leash, and off-roading in wilderness areas.

Increasing visitor use affects management of park infrastructure and staffing and results in a diminished visitor experience. Impacts include severely-diminished visitor services, increased conflicts between visitors associated with limited parking and camping spots,

³ Based on NPS staff observations

over-worked septic systems, and the need to empty pit toilets and dumpsters at near twice the frequency as in previous years. Weekend and holiday visitors struggle to find a parking spot, and park attractions are exceeding parking lot capacity by mid-morning.

Figure 4. Joshua Tree Park Map of Prioritized Congestion Hotspots



Local communities have voiced concerns over traffic congestion and blocked driveways in neighborhoods leading up to the park's West Entrance. The park is taking immediate actions to manage congestion, but requires mid-term and long-term solutions to better manage visitation in both the front and backcountry.

While Joshua Tree is experiencing congestion park wide, several studies and efforts are underway to assist the Park in identifying long-term management strategies for visitor access. The outcomes of these studies will help determine what tools and strategies will be most effective to use in support of those management policies. **As such, for the purpose of this congestion assessment, the park was asked to identify five priority areas where they could use help identifying tools to manage congestion in the short-term (next five years).**

The areas identified are as follows (and mapped in Figure 4):

Skull Rock: Demand for parking at the site exceeds capacity. Cars attempting to park routinely overflow into parts of roadway travel lanes and onto surrounding resources, creating a safety hazard for visitors milling around and crossing the road to access trails and vehicles.

Split Rock: Demand for parking at this site exceeds capacity. The lot is dirt with no stalls delineated. Parking overflows onto narrow roadway leading to the parking area, leaving only one lane for traffic entering and exiting the area.

Indian Cove: The Indian Cove area serves as a day-use parking lot along with parking for campground and amphitheater users. Regulations limit to 2 cars per campsite, but day-users and additional persons parking for camp sites leave no parking for other campers. There is not enough parking to serve the demand and the variety of users at the site.

Jumbo Rocks: Jumbo Rocks Campground is the biggest campground in the park and a constant flow of cars circulates through this site consisting of a mix of campers and day users in search of the "Jumbo Rocks". There is not enough parking to serve the demand and variety of users at this site. Park staff is routinely dispatched there to manage the gridlock and maintain safe access through the area. They get stuck there for hours a day, taking away from their ability to perform other job functions.

Barker Dam / Wall Street Mill

Barker Dam and Wall Street Mill provide access to both day hiking, climbing and bouldering. There is no formalized parking for Wall Street Mill. Visitors park along the road and often use the Barker Dam Lot to access Wall Street Mill. These parking areas are routinely at capacity by 10AM.

It would be difficult to expand parking in this area. Nearby Echo Tee offers parking that can be used by visitors wanting to access Barker Dam when its lot is full. The park would need to formalize a connector trail; current access is via a multitude of confusing social trails with no signage.

While some tools presented in the *Recommendations for Congestion Management* section do go beyond the short-term and beyond the priority areas identified above, the recommendations focus first on tools that might help these areas in the short-term. All other recommendations are things the Park can consider as it evaluates its long-term visitor use management strategies.

The park was also asked to provide answers to the questions presented in Table 1. These questions are derived from the original NPS Congestion Survey conducted NPS-wide in 2010. They are meant to baseline current conditions, and, in post-assessment follow-ups, track if and how congestion in the park has changed.

Table 1. Joshua Tree Park Overview of Congestion Impacts (Based on the NPS 2010 Congestion Survey)

Question	(Select One or More Standard Answers)	Park answers here
<i>What are the impacts of congestion on visitor experience and resources?</i>	<i>(select one or more: visitor experience, safety, park operations, park facilities, natural resources, cultural/historic resources, other)</i>	Natural resources, park operations, safety. Visitor experience impacts not quantified.
<i>How is safety affected by congestion?</i>	<i>(select one or more: ped/bike conflicts with vehicles, delayed emergency response, clustering of vehicle crashes, ped/bike conflicts, other, or not an issue)</i>	Delayed emergency response. Pedestrian conflicts with vehicles.
<i>Where is congestion present in the park?</i>	<i>(select one or more: parking areas, roadways providing access to the park, visitor center, park entrance station, primary park vehicle tour route, pedestrian loading areas, pedestrian paths/trails, trailheads, scenic overlooks, transit stops, other park attractions)</i>	Parking areas, park entrance stations, roadways providing access to the park, primary park vehicle tour route.
<i>What are the specific locations (hotspots) most affected by congestion</i>	<i>(identify unique locations on the assessment map. For each location, identify high, medium or low intensity problems and the type of problem at each</i>	See map Figure 3

	<i>location)</i>	
<i>During which of the following timeframes is congestion present?</i>	<i>(select one or more: special event only, 3-day weekends, commuter peak periods, mid-day tourist, transit schedule, both commuters/midday tourist, both mid-day and transit schedule, both commuter and transit schedule, all of the above)</i>	Special events, long weekends, free entry days, mid-day tourist, weekly (Thursdays and Fridays in campgrounds).
<i>Is the park actively managing congestion? If yes currently, what strategies does the park use?</i>	<i>(select: yes currently or yes in the past, or no) (if yes, select: transit, traffic information, park ranger traffic management, reservation system, fast pass, VMS, HAR, remote parking with shuttles, expanded parking, worked with local communities, provided more visitor information on website, actively promoted bike/ped access?)</i>	Yes: <u>traffic information, park ranger traffic management remote parking with shuttles, expanded parking, worked with local communities, provided more visitor information on website.</u>
<i>Has your current congestion mitigation strategy been successful? Why or why not?</i>	<i>(select yes/no) (if yes, describe why) (if no, describe why not)</i>	Yes: Resource impacts have been reduced, but reduction in congestion is difficult to measure with increase in visitation.
<i>Has the park been partnering with other groups or agencies to manage congestion? If yes, what groups or agencies?</i>	<i>(select yes/no) (if yes identify names of groups/agencies...)</i>	Yes: Local transit provider, Chambers of Commerce and hotels in local towns, tribal partners at 29 Palms. There is also an Off Highway Vehicle (OHV) partner at south end of park.

Recommendations for Congestion Management

NPS' Congestion Management Toolkit (www.nps.gov/transportation/pdfs/NPS-CMS_Toolkit.pdf) offers over 50 congestion mitigation tools specifically selected for NPS congestion conditions and concerns. Some tools, such as building parking or adding transit are often proposed; whereas other less capital-intensive tools, such as managing circulation, posting traffic information on social media, and special events management, can be as effective as or more easily implemented than high-cost solutions.

The table beginning on page 18 is a list of suggested congestion mitigation tools Joshua Tree should consider exploring. This table should be viewed as a menu, where park staff will have to decide which tool(s) they want to pursue and what further actions to take. The table presents a cost range and timeframe for each tool. This diagram explains those definitions:

Reference: Cost/Timeframes for Implementing Congestion Tools			
<u>COST RANGE</u>		<u>TIMEFRAME</u>	
<u>Low:</u>	\$0-\$50,000	<u>Immediate:</u>	Less than 1 year
<u>Medium:</u>	\$50,000-\$100,000	<u>Near-Term:</u>	1-3 years
<u>High:</u>	\$100,000-\$500,000	<u>Long-Term:</u>	4 years or longer
<u>Highest:</u>	Over \$500,000		

Tools with an asterisks (*) next to their name mean that elements of the tool are already being employed by the park. Tools at the top of the table shaded in brown denote steps the park will pursue in the next year.

This table designed to assist the park to understand what tools would be effective based on the problems identified during the congestion assessment process. It also includes information important to help the park understand key issues related to implementation of each tool. **Long-term management of congestion and vehicle access to the park will largely be dependent on the outcomes of the Visitor Use Management Study.** The Park needs to determine the number of visitors it wants to allow at Park destinations and what types of use it will allow at these places as well. Understanding that will help determine which tools in the table could be most effective to achieve those management objectives. **Further if the Park chooses to pursue implementation of any of these tools, development and execution should be closely coordinated with the Regional Federal Lands Transportation and Alternative Transportation Coordinators. Implementation contacts are:**

*Regional Federal Lands Transportation Program Coordinator(s): Justin DeSantis and Dianne Croal
Park Point of Contact for Implementation: Jane Rodgers*

CONGESTION MANAGEMENT TOOL (from NPS Congestion Management Toolkit)	WHAT SPECIFIC PARK PROBLEMS WOULD THIS TOOL ADDRESS?	COST AND TIMEFRAME	CONSIDERATIONS	IMPLEMENTATION
<p><u>INCIDENT MANAGEMENT / SPECIAL EVENT MANAGEMENT *</u></p> <p>Traffic incident management is about developing and implementing an incident management plan (this can also be used for special event management). This solution does not directly involve tangible hardware or infrastructure improvements, but is highly regarded method to integrate multiple operational tools that may involve Law Enforcement responsibilities.</p>	<p>Developing an ICP may be an effective way to manage congestion during peak season and special events. Would also help with determining boots on the ground staffing needs and potentially scoping for third-party traffic management. Park is paying staff overtime to manage traffic so at some point this may be cost effective.</p>	<p>Cost: Medium to High</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>The park annually reviews its approach to managing peak use and special events within the park. Park staff will continue to modify and expand the ICP for peak season based on 'Action Review' outcomes from the spring 2017 review and they could look to PWR for funding for a pilot project.</p> <p>In addition to operations developed in spring 2017, the park will apply Strategic Recruiting of VIPs and/or new hires for parking lot, trailhead, and entrance station traffic control. Hiring ideas include using Military Spousal Hiring Authority, adding funding on to existing Shuttlebus Ambassador project staffing, converting seasonal hires to intermittent, creating "bench strength" with flexible staffing to meet sporadic needs. A new Military VIP/staffing coordinator position could be created to focus on recruiting staffing to support peak traffic management needs. Also outreaching to area high schools and community colleges that have service hour requirements to graduate may help the park find volunteers who are interested in helping out and learning more about the park.</p>
<p><u>MEDIA/SOCIAL MEDIA/MOBILE DEVICE APPS *</u></p> <p>With smart phones rising in popularity, the use of social media (e.g., Facebook, YouTube, Twitter, Flickr, Tumblr, Instagram, blogs, and other programs) and mobile device apps have also become acceptable low cost ways to provide information.</p>	<p>The use of common social media applications or already existing visitor applications about touring Joshua Tree (from outside providers) to disseminate information about park conditions, when to come, where to go, etc. is an easy and affordable way to provide visitors timely information on park conditions.</p> <p>Webcams can also be considered at multiple locations to give staff and visitors a method to check current conditions. A link can be added to the NPS website.</p>	<p>Cost: Low to Medium</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>Work with common app providers to coordinate information provided to the public, particularly regarding park rules and regulations, and to conduct social outreach.</p> <p>Improve upon existing social media program by a) developing a social media strategy specific to traffic management, b) develop tools to inform visitors "real time" what lots are full, and c) provide alternative attraction sites/parking lots (in conjunction with adding signage and wayfinding).</p> <p>In the long term, as capability improves, review where and how other parks or agencies are using cameras (for example Mt. Rainier: https://www.nps.gov/mora/learn/photosmultimedia/webcams.htm). Identify locations in the Park this could help and establish pilot to test.</p>
<p><u>DYNAMIC/VARIABLE MESSAGE SIGN *</u></p> <p>Dynamic/Variable message signs (both portable and permanent) are used to provide en-route information and alerts to visitors.</p>	<p>Sign placed in advance of congestion locations could inform visitors when parking is full and what action the park wants them to take (e.g. 'Proceed to Overflow Lot', 'Proceed to Another Location', etc.). The intersection prior to the road to Split Rock would be an ideal location for DMS/VMS, so visitors would not proceed all the way down the road only to find full parking.</p>	<p>Cost: Low to Medium to High</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? Yes if signs will be purchased (no if they will be rented)</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>Identify/refine locations to test out DMS/VMS. Develop a Concept of Operations, including messaging for testing out the effectiveness of the signs. The park has a PMIS to purchase more DMS/VMS signage.</p> <p>Coordinate with Caltrans to complete agreements for using DMS/VMS in Caltrans ROW.</p>
<p><u>SIGNAGE AND WAYFINDING *</u></p> <p>Signage and wayfinding techniques guide visitors to their destinations and are particularly helpful in an unfamiliar environment.</p>	<p>Park is currently providing signage on highways leading up to the park. Eastbound 62 & westbound 62 coming into the town of Joshua Tree, and at the intersection of Hwy 62 and Park Drive, there is signage to the effect of "Reduced congestion at 29 Palms Entrance"/Alternate entrance.</p>	<p>Cost: Medium to High</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? Maybe</p> <p>EA/EIS needed? Maybe</p> <p>Suitable for a pilot project? Yes</p>	<p>There is a funded FLREA project to update wayside exhibits. This is a great opportunity to include wayfinding in the congestion assessment toolkit. Guided circulation is a great tool to move people around and improve experience and resource protection.</p>
<p><u>INTERSECTION IMPROVEMENTS (GEOMETRIC/ TRAFFIC CONTROL DEVICES)</u></p> <p>Intersection improvements include two-way or yield control, multi-way stop control, roundabout, and signalization.</p>	<p>Campground intersections such as at Black Rock and Jumbo Rocks CG as well as Intersection Rock should be reviewed for function and traffic flow improvements.</p>	<p>Cost: varies, Low to Medium to High to Higher</p> <p>Timeframe: Near Term to Longer Term</p>	<p>PMIS needed? Maybe</p> <p>EA/EIS needed? Maybe</p> <p>Suitable for a pilot project? Yes</p>	<p>Plans are underway for park entrance improvements at Joshua Tree Entrance. The Park may want to look into converting pull-in angle parking at West Entrance to parallel parking to improve safety in short term. Could be piloted using traffic cones and paint.</p> <p>Year one focus on Jumbo Rocks Campground intersection. Replace current directional signage to emphasize "Campground" to discourage day-users/visitors mistaking the campground for an attraction site.</p>

CONGESTION MANAGEMENT TOOL (from NPS Congestion Management Toolkit)	WHAT SPECIFIC PARK PROBLEMS WOULD THIS TOOL ADDRESS?	COST AND TIMEFRAME	CONSIDERATIONS	IMPLEMENTATION
<p><u>PARTNERSHIPS, COLLABORATION, PUBLIC INVOLVEMENT, AND OUTREACH *</u></p> <p>There are many potential partners that parks/units can engage/outreach to in helping to solve transportation congestion problems.</p>	<p>Ongoing collaboration and engagement with park partners can help resolve common access issues, and improve the visitor experience.</p>	<p>Cost: Low to Medium to High to Higher</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>In conjunction with the ICP, continue to engage and inform partners quarterly about visitor access to the park. Include preferred messaging that the park wants partners to share with visitors about when to access, what to expect, new rules or regulations, etc.</p>
<p><u>AVOID PEAK TRAVEL TIMES /ENCOURAGE VISITATION TO LESS CONGESTED AREAS / USE SUGGESTED ITINERARIES TO SUGGEST WHERE TO GO*</u></p> <p>Electronic systems can be used to warn visitors of busy times and potential delays and to encourage them to travel to the park during non-peak seasons, such as shoulder seasons or non-peak travel times.</p> <p>Encouraging visitors to go to attractions in less congested areas can decrease congestion and increase visitor experiences.</p>	<p>Take advantage of opportunities to inform visitors while they are traveling to the park. Many visitors may not be aware of other venues / attractions within the region or park vicinity.</p>	<p>Cost: Low to Medium to High</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>Park provides messaging through local media outlets and via signage along CA Hwy 62.</p> <p>In the short term consider giving visitors suggested itineraries when they enter during congested times. Also have the messaging set expectations about what to expect regarding congestions and camping availability. Continue to work with Caltrans to expand messaging possibilities.</p> <p>In the long-term evaluate the feasibility of opening up more day use areas in the north and south ends of the park. Also work in collaboration with surrounding FLMAs to determine if there are other places outside the park visitors can be encouraged to check out too. Can visitors get a quality experience in these areas? What are the resource impacts?</p>
<p><u>PARKING MANAGEMENT</u></p> <p>Parking management includes a variety of strategies to actively manage congested parking. One strategy is to inform visitors by sign or in person that certain parking areas are full. Another strategy could be regulating parking for a specific use where congestion frequently occurs. Another strategy could be to set parking time limits at congested parking locations to increase turnover (ex: 20 minute parking, 2 hour parking max, etc.).</p>	<p>Jumbo Rocks – Having campground hosts and/or gating at the campground will only allow a specific type of user (campers) to access certain areas which would reduce conflicts between campground and other types of visitors.</p> <p>Parking time limits can be used effectively where a destination is extremely popular for short-duration trips and has a number of users that utilize the parking for hours or days (long duration). By encouraging the longer duration users to park elsewhere, parking is made more readily available.</p>	<p>Cost: Medium to High</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? Yes if capital improvements included</p> <p>EA/EIS needed? Yes if capital improvements included</p> <p>Suitable for a pilot project? Yes</p>	<p>Park will consider piloting parking time limits at congested locations, and/or testing parking pass/access options to congested locations (a certain amount of cars are issued a permit to park at a popular destination).</p> <p>In the long term they need to pilot and then develop a plan to flesh out a permanent parking permit concept, in conjunction with increased signage and wayfinding.</p> <p>Park will continue deploying vast quantities of "no parking" sandwich boards along road edges to protect resources until a longer term plan is formulated.</p>
<p><u>TRAFFIC CIRCULATION IMPROVEMENTS</u></p> <p>This tool involves management techniques such as one-way or reversible lanes for changing traffic flow patterns and circulation to reduce congestion.</p>	<p>Converting Queen Valley to a one-way westbound could alleviate outbound congestion to Pine City, and mitigate off road travel and proliferation of visitor created pull outs damaging soils and vegetation on this road.</p>	<p>Cost: Medium</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>The park is going to pilot test making Queen Valley one-way westbound.</p>
<p><u>SPEED MANAGEMENT</u></p> <p>Speed management has three variations (1) increase compliance of existing posted speed limits, (2) reduce the maximum posted speed limit, and (3) implement a variable speed limit.</p>	<p>Speeding is a problem on Park Blvd. and down by Cottonwood. Road design is such that geometry supports speeds.</p>	<p>Cost: varies, Medium to High to Higher</p> <p>Timeframe: Continuous</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>The park will continue to constantly evaluate speed issues and solutions. FHWA has a couple websites to help explore and evaluate solutions: https://safety.fhwa.dot.gov/speedmgt/ https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm</p> <p>The park can also reach out to the Safety Engineer at Central Federal Lands to further evaluate speed issues and solutions.</p>

CONGESTION MANAGEMENT TOOL (from NPS Congestion Management Toolkit)	WHAT SPECIFIC PARK PROBLEMS WOULD THIS TOOL ADDRESS?	COST AND TIMEFRAME	CONSIDERATIONS	IMPLEMENTATION
<p><u>IMPLEMENT TRANSIT/SHUTTLE SERVICES/OPERATIONS/ADD CAPACITY *</u></p> <p>Transit/shuttle services is a method to transport visitors to and around the park/unit without the use of a private automobile. Adding capacity to the transit system can be completed by adding more shuttles, by decreasing headway between shuttles, or by adding additional routes.</p>	<p>Transit service, especially to popular park destinations, could reduce the need for additional parking or parking management at congested destinations.</p> <p>In the long run, expanded, permanent service to destinations such as Skull Rock or Jumbo Rocks could reduce vehicle parking needs, but may increase visitation and subsequent resource damage at these sites.</p>	<p>Cost: High to Higher</p> <p>Timeframe: Near-Long Term</p>	<p>PMIS needed? Yes</p> <p>EA/EIS needed? Yes (if pursuing permanent)</p> <p>Suitable for a pilot project? Yes</p> <p>Alert: NPS has a moratorium on new transit systems, contact Regional Transportation Coordinator for more information. Requirements include: transit pro forma, approval by: Regional Transportation Coordinator, Regional Director, WASO Transportation Program Manager, PFMD Director, and NPS Director</p>	<p>Park is proceeding with shuttle bus implementation once the cooperative agreements are approved. Consider leveraging PMIS project to increase number of NPS bus guides/staff to assist with traffic control at parking lots, fee stations, and trailheads.</p> <p>Evaluate effectiveness of initial pilot, including where expansion (by reducing headways to pilot route, or adding destinations could be useful). If pilot is effective, and park wants to pursue a permanent system, work with Regional Transportation Coordinator staff to identify steps to take.</p> <p>Consideration of a permanent shuttle system should also evaluate locations for support infrastructure such as bus shelters, park and ride facilities, and bicycle racks (to promote combining bicycle and transit trips). Additionally, carrying capacity of park destinations should be carefully considered and examined by the park in conjunction with making any transit service permanent.</p>
<p><u>NEW OR EXPANDED PARK-AND-RIDE FACILITIES (INCLUDING PROMOTION)</u></p> <p>Park-and-ride facilities allow visitors to leave their car and travel through the national park via transit.</p>	<p>This could be especially useful in campground areas that are also popular with day users.</p> <p>The park can also support the development of a park-and-ride facility in nearby communities as well. One such means for support could be to utilize FLREA money as Federal Lands Access Program (FLAP) match for an offsite park-and-ride facility that would benefit both the park and local businesses.</p>	<p>Cost: Higher</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? Yes</p> <p>Suitable for a pilot project? no</p> <p>EA/EIS needed? Yes</p> <p>Alert: NPS has issued a moratorium on new transit systems, contact Regional Transportation Coordinator for requirements which include: transit pro forma, approval by: Regional Transportation Coordinator, Regional Director, WASO Transportation Program Manager, PFMD Director, and NPS Director</p>	<p>Evaluate as well as using in conjunction with the pilot shuttle service. It can take years to gather support and build coordination for these types of projects.</p> <p>Expand park/ride options, look at Yucca Valley Welcome Center as potential location. Consider "Slug Line" concepts. Use this tool in conjunction with promotion of 'no car' options</p>
<p><u>PROMOTE NO-CAR PARK ACCESS OPTIONS</u></p> <p>Implementing transit or ridesharing for access to/from and within a park or unit will help improve congestion issues only if visitors know about these systems and utilize them. A marketing campaign can help with getting the word out to visitors and incentives can help to encourage transit use.</p>	<p>Shuttle business plan addresses this Mobility Partners 2016 business plan.</p>	<p>Cost: Low</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? No</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? Yes</p>	<p>Shuttle pilot already contains actions/ideas for promoting use of transit. Evaluate effectiveness and modify to support expansion in transit service, rideshare opportunities, or opening of new bicycle and pedestrian facilities.</p> <p>Park can also work with park partners and local hotels to promote ride-sharing activities such as "Meet Up" groups and/or "Slug Lines", where people assemble then travel into the park, and also provide incentives for carpooling (park at nearby hotels, etc.).</p>

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<p><u>EXPAND OR IMPROVE BICYCLE/ PEDESTRIAN FACILITIES</u> Pedestrian and bicycle facilities allow visitors to travel to destinations by an alternate mode. Facilities could include widened road shoulders, a separated multi-use/non-motorized paved pathway, and unpaved trails and bike racks</p>	<p>While it is unlikely that bicycle paths would be developed inside the park, active transportation development in gateway communities can still reduce vehicle traffic coming into the park.</p> <p>The park could provide parking and shaded areas at visitor centers outside of park that tie into the community development plans. Additional bicycle racks and benches at shuttle stops will make the transit pilot more desirable.</p> <p>Look at connecting biking with transit use to alleviate parking in town. This would include any shuttle stops in transit network. Having bicycle parking at Visitor Centers will free up valuable spaces for visitors who stay a shorter length.</p>	<p>Cost: High-Higher</p> <p>Timeframe: Longer Term(6+ Years)</p>	<p>PMIS needed? Yes</p> <p>EA/EIS needed? Yes</p> <p>Suitable for a pilot project? No</p>	<p>Seek out opportunities to collaborate with active transportation development in the community such as the ongoing Morongo Basin Active Transportation Plan. Dedicate park staff time to attend meetings. In the long term the park would like to see bike lanes on major park routes.</p>
<p><u>ROADWAY PULL-OUTS</u> Roadway pull-outs can be used as space for passing traffic, as additional parking for visitor attractions, as shuttle stops, as locations to repair breakdowns, and as wayside areas that may provide visitors with limited bathroom facilities (if provided) and information. Shoulders can also be specified as ‘no parking’ areas to promote better circulation through a congested area.</p>	<p>Disturbed roadside areas can either be formalized for visitor use or rehabilitated and evaluated for the safety and purpose of each disturbed area. Formalizing areas can provide additional parking capacity while minimizing further resource impacts.</p>	<p>Cost: Medium to High</p> <p>Timeframe: Near Term</p>	<p>PMIS needed? Yes</p> <p>EA/EIS needed? Yes</p> <p>Suitable for a pilot project? Confirm with PWR ATP Program Manager</p>	<p>A roadway pullout study could be developed by the park to determine where roadside parking could be added or removed to improve safety, access, and to better manage use. These studies are typically developed for the entire park. However, since Pinto Basin Road is newer, there may be a desire to only perform this study in the northern sections of the park.</p> <p>Park would need to prepare a pilot study proposal or a proposal for a Roadway Pullout Study for both paved and unpaved roads. Lost Horse Road trailhead would be ideal for this type of study. There is a 6 mile loop trail that provides a primitive experience, even with a lot of people parking, but parking on Lost Horse Road is limited. It is a 2-way road that is 1.5 cars in width plus people are parking on the road shoulders. Increasing capacity here would not have as much negative resource impacts as other places like Hidden Valley.</p> <p>Similar to #7 and #17; need to scope out and develop a pull out/parking plan. PMIS 242905 in RFCP to delineate a 4-mile section of Geology Tour Road. 242925 to rehabilitate and delineate Split Rock and Live Oak Day Use parking lots, and 242926 delineate and rehab Queen Valley Road network.</p>
<p><u>VISITOR USE MANAGEMENT *</u> Managing visitor access and use for congested parks is complex. A solid understanding of the number of visitors and where they go, what they do, related impacts, and potential tools (such as indicators, thresholds and monitoring) /strategies for managing those impacts may be beneficial for park management and partners.</p>	<p>The park currently welcomes all visitors to the park. Without managing that visitation park resources and visitor experience will continue to be degraded.</p>	<p>Cost: high-highest</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? Yes</p> <p>Suitable for a pilot project? Maybe</p> <p>EA/EIS needed? Yes</p>	<p>Conduct NPS 2016 Visitor Use Management Framework visitorusemanagement.nps.gov and evaluate forthcoming recommendations presented with in the study.</p>

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<p><u>TRAFFIC MONITORING/DATA COLLECTION AND ANALYSIS *</u> Data can be used to help a park/unit better understand their existing conditions and issues, and more precisely determine when, where and why congestion occurs.</p>	<p>There is a potential need for data collection at top priority locations to determine parking duration / turnover rates and entrance station patterns and queue lengths.</p> <p>These data will inform on current conditions and establish a baseline to monitor future changes from. If the park decides to consider implementing a parking reservation system, these data will help structure that system.</p>	<p>Cost: Higher</p> <p>Timeframe: Immediate</p>	<p>PMIS needed? Maybe</p> <p>EA/EIS needed? No</p> <p>Suitable for a pilot project? No</p>	<p>Partner with VUM study efforts to collect data on duration/turnover rates, and entrance station queues. This will assist in determine where the Park want to manage use and how in the future.</p>
<p><u>EXPAND PARKING SUPPLY</u> Overflow parking on roadway shoulders and in “no parking” areas can be a source of congestion. In some cases, demand management and/or promoting the use of park and ride facilities can lessen this impact, but in others, the best option may be to increase parking supply. To lessen the insatiable demand for parking, increases in parking supply can often be coupled with other visitor management techniques (e.g. increased enforcement, reservation systems, etc.).</p> <p>Expanding the parking supply can be considered in the short-term by creating temporary overflow lots for peak times or events. In the long-term expanding the parking supply would consider locations where permanent parking supply can be added.</p>	<p>Barker Dam/Wall Street Mill/Echo Tee - Temporary: encourage overflow parking and starting hike at Echo Tee in conjunction with formalizing shorter path to Barker Dam from Echo Tee. Consider temporary stalls delineation to best utilize Wall Street Mill parking. Improve signage to improve visitor wayfinding for parking options at all three lots.</p> <p>Permanent: Consider expanding Barker Dam lot by removing center island for lower impact.</p> <p>Skull Rock – Potential to expand east on road in disturbed area</p> <p>Permanent: In conjunction with formalized pullout study, evaluate disturbed areas northeast and southwest of Skull Rock. Improve pedestrian facilities to prevent walking on the roadway.</p> <p>Split Rock – Temporary – Existing road width by turnaround can be utilized for parking and a short one-way loop for vehicles could be developed exiting at toilet facility. Temporary parking stall delineation will improve usage of space.</p>	<p>Cost: Higher</p> <p>Timeframe: Longer Term</p>	<p>PMIS needed? Yes if paved parking is proposed</p> <p>EA/EIS needed? Yes if paved parking is proposed</p> <p>Suitable for a pilot project? Temporary overflow lots initially used for events could be evaluated for feasibility to convert to/build permanent parking lots.</p>	<p>Identify areas to expand parking through a Parking/Pullout study and complete compliance for areas that the Park would consider suitable for temporary overflow and/or permanent expansion.</p>
<p><u>RESERVATION SYSTEMS</u> Reservations systems strongly manage the demand placed on a destination within a unit that has limited capacity by allowing the number of visitors entering a location to be capped/limited to a maximum number. Can also be used to address carrying capacity issues.</p>	<p>Reservation systems are being used in many public lands to control the number of visitors that can be at a site at any given time. They can reduce negative resource impacts, improve the visitor experience, and often reduce the amount of staff resources necessary to manage a congested area.</p> <p>Most systems are site-specific (versus park-wide). Timed entry components can also be added to the reservation to let people know exactly when to enter or exit by, and allow for more visitors getting the opportunity to visit a popular site.</p>	<p>Cost: Medium to High to Higher</p> <p>Timeframe: Long term</p>	<p>PMIS needed? Yes</p> <p>EA/EIS needed? Yes</p> <p>Suitable for a pilot project? Yes</p> <p>Other: contact Regional Transportation Coordinator for more information</p>	<p>A reservations system should be evaluated following or in conjunction with a broad park-wide Visitor Use Management Study (VUM study). Capacities would need to be set through the VUM planning process. Additional research on how the reservation system could be designed would be necessary.</p> <p>Similar effort underway at Yosemite, which is completing a pilot reservation study. Cost is \$1.50 and reserved seat if arrival occurs before 11:00 am. This fee just covers cost of system.</p> <p>Mt. Rainier is using a color card system correlating to lots for Mt. Rainier. Cards are passed out at the park entrance points and drivers are directed to specific lots to park.</p> <p>See the TRAFFIC MONITORING/DATA COLLECTION AND ANALYSIS tool as well.</p>

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<p>PREPAYMENT OF ENTRANCE FEES AND TRANSIT FEES Prepayment of entrance fees and transit fees allows visitors to pay for entrance or transit fees prior to entering the park. Usually Prepayment is done online, at an automated fee machine (kiosk for self-paying fees) in the gateway community, via third party sales vendors in the community, or via a smartphone application.</p>	<p>Promoting to visitors to prepay before they reach typically congested entrances should allow park staff to move cars through the entrance stations more quickly and reduce congestion there.</p>	<p>Cost: varies, Low-High Timeframe: Near Term</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes Other: coordinate with Regional Transportation Coordinator and Regional Fee Manager</p>	<p>Park will continue to explore/expand prepayment options, including payment kiosks at offsite locations. The park will also explore third party sale options.</p>
<p>ADD ENTRANCE LANES STATIONS/BOOTHS * Adding entrance lanes/stations /booths can increase visitor throughput and decrease congestion and delay time.</p>	<p>Additional entrance lanes, stations, or booths would alleviate queueing delays at the West Entrance Station (and at Cottonwood and Twentynine Palms when necessary).</p>	<p>Cost: Medium to High Timeframe: Near Term</p>	<p>PMIS needed? Yes EA/EIS needed? Yes Suitable for a pilot project? Maybe</p>	<p>The park is in the process of redesigning the West Entrance Station. The fee booth will move 1 mile further into the park and add a second lane. Construction should begin in 2020. Also consider moving the Entrance sign to the existing restroom parking with the relocation of the entrance booth.</p>
<p>LANE SEPARATION/ DELINEATION Lane separation and delineation techniques focus on clearly defining travel lanes (through striping or other methods), so that visitors/motorists know where to travel.</p>	<p>At the West entrance there is no fog line or striping to inform visitors where or how to park, specifically at the restroom Making certain segments of road in campgrounds 1-way only will free up space and striping will allow for additional day-use parking.</p>	<p>Cost: Medium to High Timeframe: longer Term</p>	<p>PMIS needed? No EA/EIS needed? No Suitable for a pilot project? Yes</p>	<p>Delineation of parking along roadsides using some type of curbing enables enforcement of roadside parking.</p>

Congestion Management Tools Dismissed at This Time

The following tools were discussed but dismissed at this time, for the reason noted below. It is possible these tools may be considered at a future date if conditions in the park change.

PROMOTE TOUR BUS USE

Visitation via tour buses rather than private automobiles can assist the unit in decreasing congestion related to automobiles and can also provide an opportunity to enhance the visitor experience.

PEAK HOUR LANE REVERSAL AT ENTRANCE STATIONS

Short term use of the exit (or entrance) lane to bring vehicles into (or out of the park). Enforcement is typically a necessary component of this tool.

Next Steps

Within 60 days of the final report, the Congestion Assessment team will contact meet with the park point of contact and region to which recommendations are the park's high and medium priority congestion mitigation recommendations. The WASO CMS team requires parks to implement 1-3 of the recommendations from the CMS. Follow up to the 3rd conference call will confirm the top recommendations to be implemented during the year following completion of the CMS.

Park support for development of PMIS statements, field support and testing, potential funding resources, data collection/analysis and other implementation activities is available from the Pacific West regional transportation program coordinator. Technical assistance is available from NPS' Denver Service Center Transportation, FHWA's Federal Lands Highway Division, the Volpe National Transportation Systems Center, and/or private sector consultants.

Congestion Management Assessment Contributors:

Congestion Assessment Team

Patricia Sacks, Project Manager / Landscape Architect, DSC Transportation Division

Guy Headland Project Specialist / Landscape Architect

Todd Johnson, Project Engineer, FHWA – CFLHD

Laurie Miskimins, Transportation Planner, FHWA – CFLHD

Dianne Croal, ATP Program Manager, NPS- PWR

Sky Skach

Rafael Wood

Joshua Tree National Park

Anna Tegarden Carroll, GIS Specialist

Chuck Heard, Safety Officer

David Smith, Superintendent

Jane Rodgers, Chief Science & Resource Stewardship

Jay Theuer, Branch Chief Cultural Resources

Jennifer Albrinck, Chief Interpretation

Jimmy Pritchett, Interpretive Ranger

Karin Messaros, Management Assistant

Karyl Yeston, Chief Ranger

Kirk Diamond, Chief Facilities

Liz Roberts, Former Chief Administration

Luke Sabala, Branch Chief Physical Sciences

Michael Vamstad, Branch Chief Wildlife

Neil Frakes, Branch Chief Vegetation

Patty Gerhardt, Executive Assistant