

National Park Service  
U.S. Department of the Interior

Arches National Park  
Utah



# Traffic Congestion Management Plan

*ENVIRONMENTAL ASSESSMENT*



October 2017

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## SUMMARY

The National Park Service (NPS) is proposing to implement a reservation system for Arches National Park (the park) to address pressing vehicle traffic and parking congestion that affect visitor enjoyment, visitor access, and resource protection.

This Environmental Assessment (EA) evaluates two alternatives. One alternative (No Action) describes expected conditions if no changes are made from current park management practices. The second alternative, the proposed action, provides management solutions for vehicle congestion, associated crowding, and related issues within the roads, parking lots, and entrance area through a reservation system for entry, enhanced communications and outreach, and enhanced partnership and collaboration.

This environmental assessment has been prepared in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations (40 CFR 1500–1508) and Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making (NPS, 2011) and its accompanying handbook (NPS, 2015) to assess the alternatives and their impacts on the environment. In addition, the National Park Service is integrating the NEPA compliance process through coordination with that of Section 106 of the National Historic Preservation Act of 1966 (54 United States Code 306108) to evaluate and describe effects on historic properties.

This EA analyzes the following resource topics in detail: Visitor Use and Experience and Local Economy. The proposed action would have both negative and positive impacts to the local economy and visitor experience. All other resource topics were dismissed because the project would result in little to no effect to those resources.

While this EA focuses on Arches National Park, it is understood that management actions taken at Arches National Park will inevitably have impacts at Canyonlands National Park due to their close proximity and similar visitor groups. The National Park Service identified that more information is needed in order to adequately address traffic and congestion at Canyonlands National Park. The focus on Arches National Park in this document will help inform future management and planning efforts at Canyonlands National Park.

## PUBLIC COMMENT

If you wish to comment on the EA, you may post comments online at <http://parkplanning.nps.gov/arch> or mail comments to:

Planning and Compliance  
Southeast Utah Group, National Park Service  
2282 S. West Resource Blvd.  
Moab, Utah 84532

This EA will be on public review for 30 days. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be

able to do so. Comments will not be accepted by fax, email, or in any other way than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted.



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# **PART 1: PURPOSE AND NEED**

## **PURPOSE AND NEED FOR ACTION**

The National Park Service (NPS) is proposing to reduce vehicle congestion in Arches National Park (the park) through a reservation system for entry. This action is needed because it is currently difficult to accommodate vehicle traffic levels during peak times and peak seasons at the park entrance and at popular parking areas while at the same time providing quality visitor experiences and protecting the natural and cultural resources of the park. Implementation of the plan should improve visitor experience and visitor safety, as well as preserve and protect natural and cultural resources. The purpose of the plan is to provide certainty to visitors in terms of ability and timing of park entry, while also meeting the following objectives:

- reducing wait times for visitors entering the park and searching for parking spots, by spreading vehicle entries out over more hours of the day and over more months of the year,
- reducing overflow parking and social pull-offs on road shoulders near popular parking areas and associated roadside walking or social trailing to trailheads,
- reducing vehicle congestion at the intersection of the entrance road and the highway, and
- reducing staff time devoted to traffic management.

Visitation to the park has increased by 90 percent in the last 10 years, leading to crowding and resulting in a series of issues such as long wait times through the entrance station, lack of parking spaces in designated lots, the creation of more than 200 social pull-offs, and obstructed access for emergency response vehicles. Current and recent park activities such as parking expansion, targeted communication, and hiring of parking lot attendants have not sufficiently alleviated the problems. Continued growth in visitation warrants a plan with innovative and interdisciplinary actions in order to alleviate vehicle congestion while also accommodating visitors.

## **BACKGROUND**

In the last 10 years, visitation to Arches National Park has increased by 90 percent, from 833,000 people in 2006 to 1,586,000 people in 2016 (Figure 1; NPS, 2016a). Over half of this growth has come in the last 3 years, with visitation up 46 percent since 2013. Previous transportation planning efforts forecasted this level of visitation would not be reached until 2020. Ninety percent of visitors enter the park in their personal vehicles (NPS, 2016), and the average vehicle occupancy is estimated to be 2.6 persons per car (NPS, 2016a).

The park is located within the “Grand Circle”—a broad recreational region in the southwestern United States that encompasses more than 60 recreation sites in five states. The Grand Circle brings attention to some of the Southwest’s most unique landscapes, attractions, scenic byways, and national park lands. Arches National Park is highlighted in the State of Utah’s “The Mighty 5” marketing campaign which was launched in March 2013, and which promotes visitation to the state’s five national parks. This campaign targets people traveling via personal vehicle or RV, and has likely contributed to increased traffic congestion at the park.

The increase also corresponds with nationwide increases in outdoor recreation and national park tourism. As reflected in Figure 1, visitation has increased at national park units throughout Utah and the NPS Intermountain Region (which includes Montana, Wyoming, Utah, Colorado, Arizona, New Mexico, Texas, and Oklahoma) in recent years, but considerably more growth has occurred at Arches National Park (NPS, 2016a).

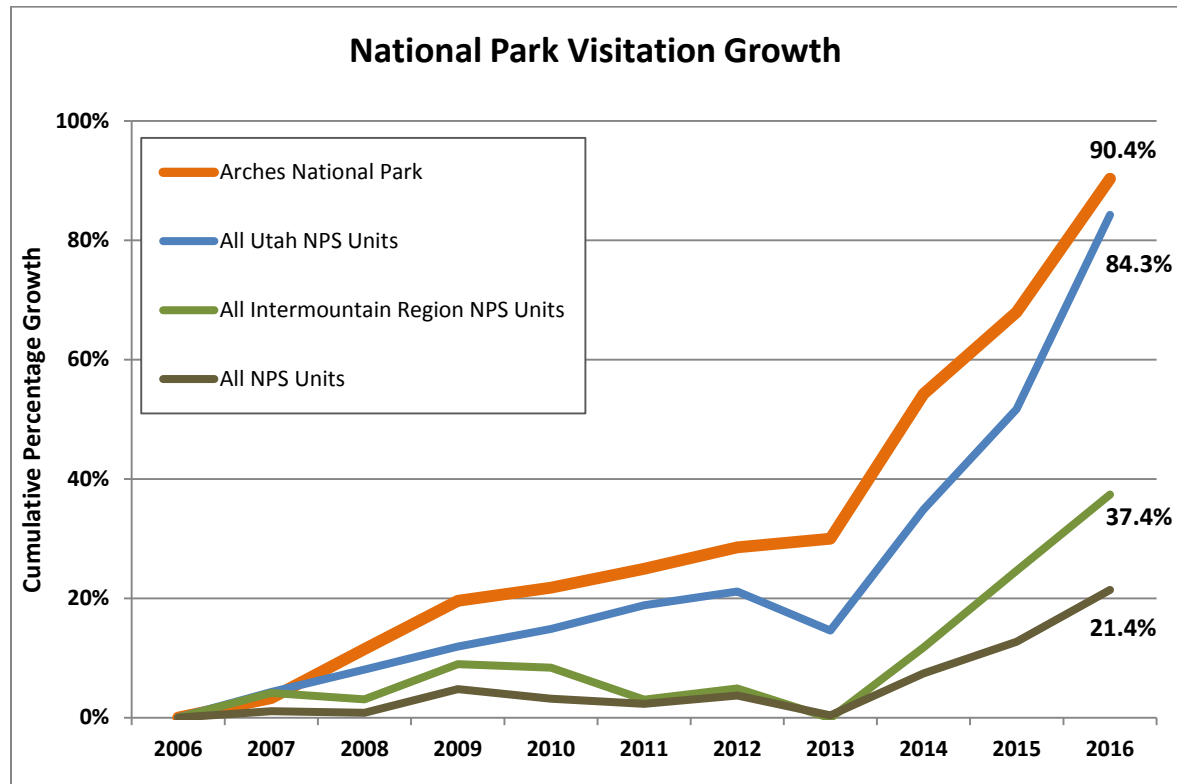


FIGURE 1. COMPARATIVE GROWTH RATE OF VISITORS TO ARCHES NATIONAL PARK AND SURROUNDING AREAS SINCE 2006 (NPS2016A)

Figure 2 shows annual visitation trends through daily vehicle entrances at Arches National Park for 2013 through 2016. Vehicle counts are obtained through traffic counter devices near the entrance of the park. Figure 2 clearly demonstrates the increase in daily vehicle entrances every year since 2013, and shows consistent seasonal visitation patterns with holiday peaks.



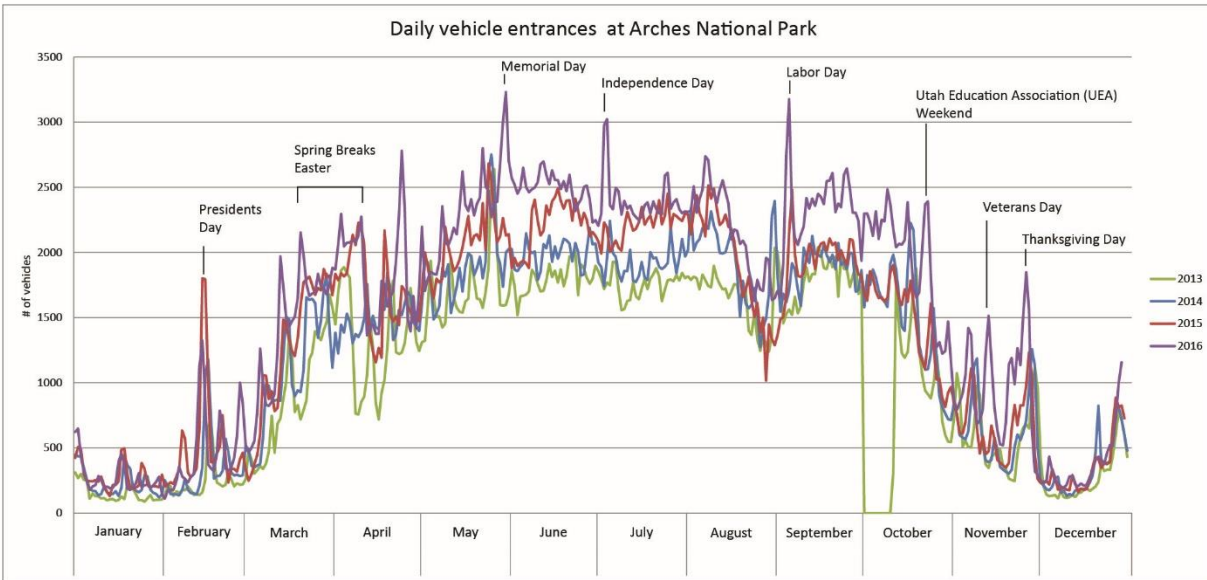


FIGURE 2. DAILY VEHICLE ENTRANCES AT ARCHES NATIONAL PARK, 2013–2016, AS RECORDED BY TRAFFIC COUNTER DEVICES  
NOTE: PERIOD OF NO ENTRIES IN EARLY OCTOBER 2013 ASSOCIATED WITH FEDERAL GOVERNMENT SHUTDOWN.

Figure 3 shows the daily number of vehicles entering Arches National Park in 2016. On average, 1,600 vehicles enter the park daily, which equates to approximately 4,300 daily visitors. On record-breaking holiday weekends when 3,000 vehicles entered, the park hosted over 8,000 people per day. Based on current patterns of daily visitation (see figure 4 for more detail), the primary parking facilities become constrained on days when more than 1,700 vehicles enter the park, as shown by the red line in figure 3 (LPES Inc., 2015).

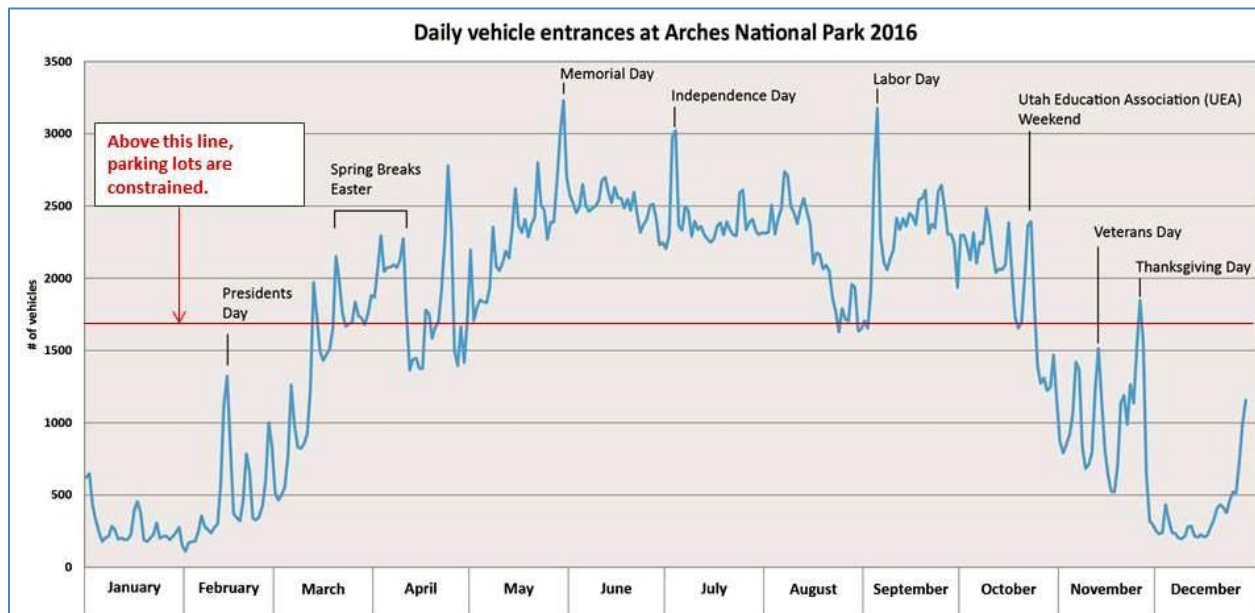


FIGURE 3. DAILY VEHICLE ENTRANCES AT ARCHES NATIONAL PARK, 2016, AS RECORDED BY TRAFFIC COUNTER DEVICES.

Figure 4 demonstrates a typical daily visitation pattern with a surge of vehicles entering between 8:00 am and 11:00 am but not leaving until the afternoon. In 2016, 83 percent of vehicles entered between 7:00 am and 6:00 pm, 33 percent between 10:00 am and 1:00 pm. This

uneven distribution of visitor entries throughout the day contributes greatly to congestion. For example, over Memorial Day weekend in 2015, so many visitors tried to enter Arches National Park at the same time that traffic backed up for several miles on US 191, which created hazardous conditions; Utah Highway Patrol closed access to Arches for approximately two hours until measures were in place to manage the intersection.

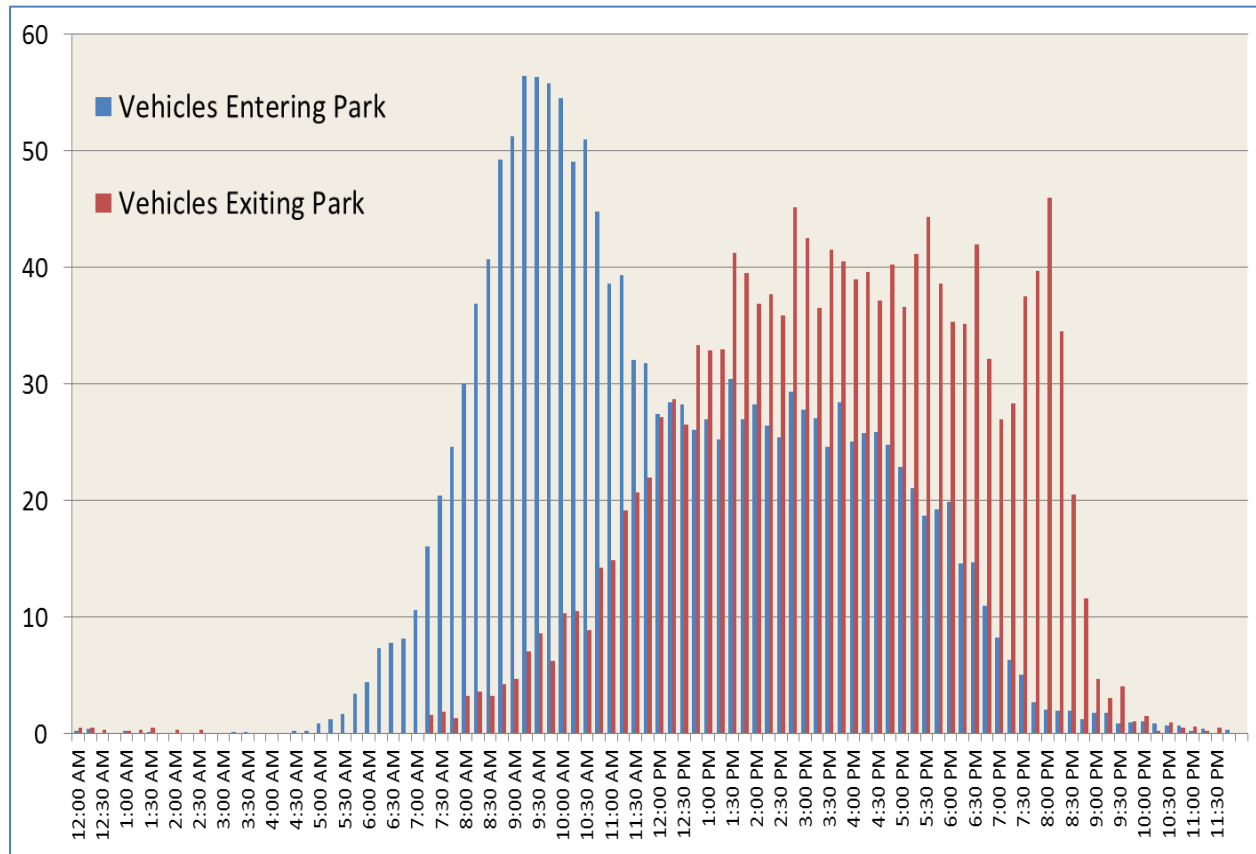


FIGURE 4. TYPICAL DAILY VISITATION PATTERN AT ARCHES NATIONAL PARK. THE Y-AXIS SHOWS THE NUMBER OF VEHICLES, THE X-AXIS SHOWS THE TIME OF DAY OR NIGHT (JOHNSON, 2013).

Parking areas commonly fill to capacity by 9:00 am during the peak season (March through October). When a parking lot is at or over capacity, some of the effects include:

- visitors who have parked in “no parking” areas and along roadsides walk in traffic lanes to reach destinations, posing safety hazards;
- roadside parking obstructs emergency vehicles and park operations vehicles;
- roadside parking of wide vehicles like RVs and trucks obstructs access for other visitors’ vehicles;
- drivers idle as they wait for parking spots, contributing to noise and pollution;
- drivers park along roadsides damaging soils and vegetation;
- park rangers are pulled from other duties in order to direct and manage traffic; and
- overall visitor experience is degraded.

During peak season, congestion occurs at the six areas identified in figure 5 and described below. This plan hopes to address congestion issues throughout the park but especially at all six of these areas.

### Entrance Road

Arches National Park has one paved entrance road with two staffed entrance booths, where staff members greet visitors and collect fees. From March through October, queuing at the entrance stations can extend back to US 191. Lines can persist for several hours with wait times of up to one hour for visitors entering the park. On most busy weekends, vehicle traffic backs up onto US 191, extending traffic congestion outside the park. When the entrance road nears full capacity, a modified bypass system has been used to help reduce wait times and prevent vehicles from backing up onto the highway. A webcam was installed at the entrance station in 2016 to provide visitors with current entrance road traffic conditions so they could be better informed when planning their visit. As part of the major road reconstruction project at Arches (Parkwide Road Maintenance and Modification (3R) - see *Part 3, Analyzing Cumulative Impacts*), one full entrance lane was added, doubling the previous vehicle capacity of the entrance road, in order to alleviate some of the congestion that occurs at the entrance station. However, the traffic congestion issues associated with the entrance road will not be fully addressed with the 3R Project, and the park will continue to monitor and take steps to mitigate congestion in this area.



FIGURE 5. DURING MEMORIAL DAY WEEKEND, 2016, TRAFFIC ON THE ENTRANCE ROAD FREQUENTLY BACKED UP ONTO US 191 (NPS PHOTO).

### Balanced Rock

Seventy-two percent of visitors visit this feature (RSG, 2017), although existing parking only accommodates 18 vehicles at one time. Observations at Balanced Rock suggest that this parking area is at capacity for much of the day; however visits are generally of short duration (about seven minutes) (Johnson, 2012). Large RVs, vehicles with trailers, and commercial buses



exacerbate the congestion within this area because of its relatively small size. As part of the major road reconstruction project at Arches (Parkwide Road Maintenance and Modification (3R) - see *Part 3, Analyzing Cumulative Impacts*), some improvements will be made to this parking area, including adding one commercial tour bus parking spot.

One of three picnic areas in the park is located off an unpaved road near Balanced Rock. When the Balanced Rock parking lot is full, visitors tend to park at the picnic area and then must cross the busy park road to access the site from there. Overflow parking also occurs along the main park road, in areas not designated for parking.

### The Windows

Sixty-six percent of park visitors travel to The Windows (RSG, 2017). The Windows parking area typically is at or over capacity from 10:00 am to 4:00 pm. Large RVs, vehicles with trailers, and commercial bus traffic exacerbate the congestion within the area. Even though this parking area has been expanded in the past, it still lacks adequate parking for the level of use it receives, and additional spaces are needed.

A parking expansion project at The Windows was submitted for funding through the National Park Service, and preliminary designs have been prepared (see *Part 3, Analyzing Cumulative Impacts*). Project funding has been requested for fiscal years 2019 and 2020.



FIGURE 6. LARGE VEHICLES LIKE COMMERCIAL BUSES AND RVs CAN WORSEN CONGESTION IN AREAS SUCH AS THE WINDOWS (NPS PHOTO).

### Wolfe Ranch/Delicate Arch

Fifty-three percent of park visitors travel to the Wolfe Ranch/Delicate Arch parking area (RSG, 2017). Crowding on the trail occurs frequently but has been deemed an acceptable component of allowing access to the park's most iconic feature, Delicate Arch (NPS, 2014). The parking area was reconfigured and doubled in size in 2015 to match park-wide occupancy patterns, but still fills to capacity (or overflows) on busy days.



## Sand Dune Arch

Thirty-seven percent of park visitors travel to the Sand Dune Arch parking area (RSG, 2017). This parking area was upgraded in 2011; however, continued increases in park visitation could affect this popular family-friendly area. It typically is within capacity for much of the day. Currently, there is a need to update or install additional visitor amenities. The park installed a new vault toilet in September, 2017 at the Sand Dune Arch parking area.

## Devils Garden

Thirty-seven percent of park visitors visit Landscape Arch from the Devils Garden parking area (RSG, 2017). Even though this parking area was expanded by approximately 35 percent in 2013, it currently is at capacity for much of the day during the busy season. On weekends, many visitors still park along road shoulders when the parking lot is full.

Exacerbating problems with parking area congestion are the growing numbers of commercial tour buses. The park issued Commercial Use Authorizations (CUAs) to 159 Motor Tour and Transportation companies and received a total of 1,457 commercial motor coach tours in 2016. During busy summer months, an average of 7-10 motor coach bus tours enters the park each day (NPS, 2016a). Four or five bus tours may visit popular areas at the same time during the peak season, and often load/off-load passengers within the roadway—effectively stopping the flow of traffic. Since parking spaces for large buses are limited, buses commonly take up multiple parallel spaces that are intended for passenger vehicles.

Time spent managing traffic congestion at the entrance station, along the roads, and at parking areas requires coordination of law enforcement, facility management, and visitor services staff, as well as the Utah Highway Patrol, Grand County Sheriff's office, and Utah Department of Transportation. Staff time and park resources required for traffic management have increased as visitation has increased, leaving the park struggling to maintain routine visitor services such as formal interpretive programs, visitor center staffing, and front-country and back-country patrols. In recent years, parking lot attendants have been hired to help ease the workload on park staff, and have helped direct traffic, offer information about parking availability, and direct drivers to areas with available parking spaces.

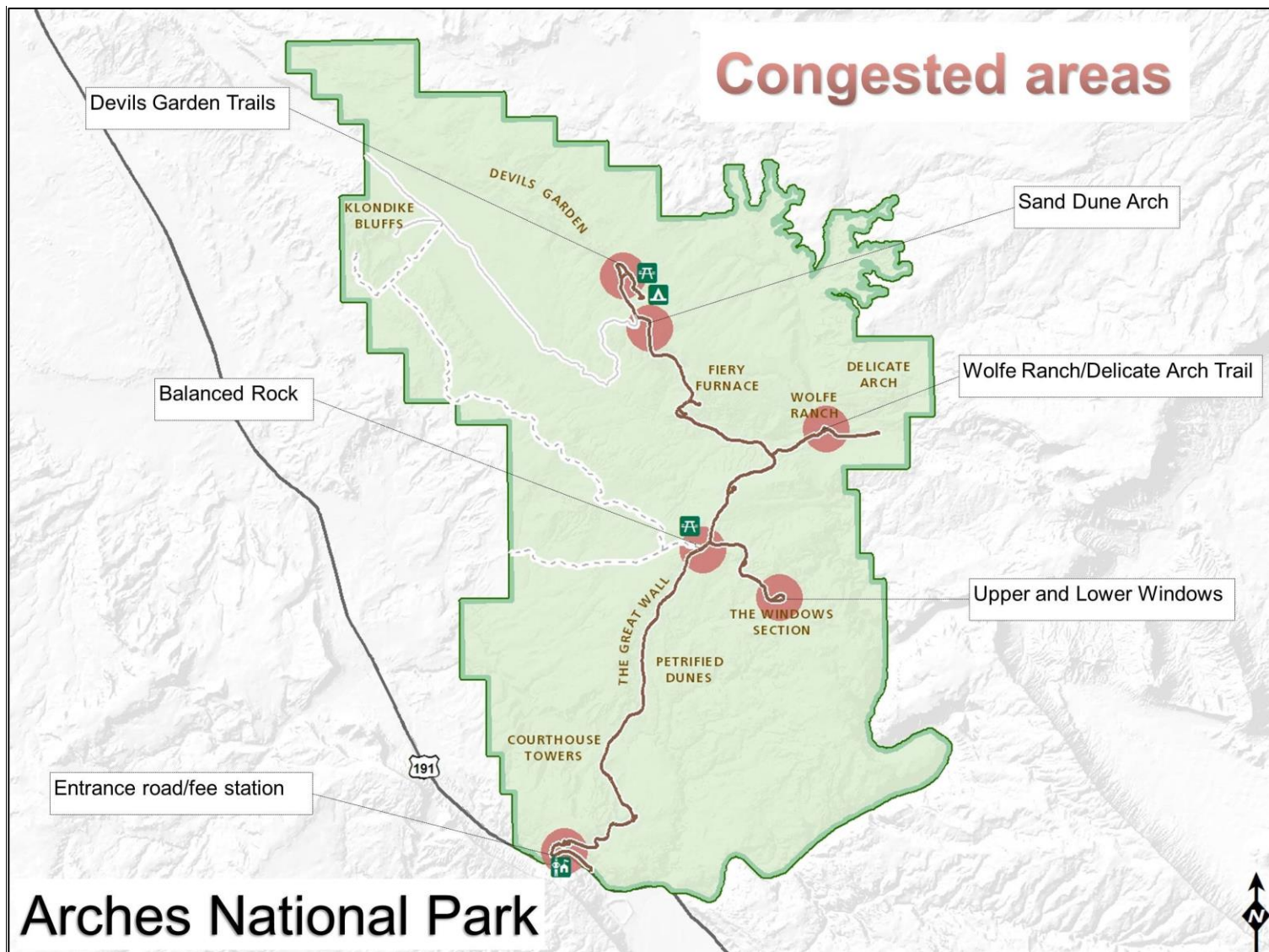


FIGURE 7. LOCATIONS OF CONGESTED AREAS IN ARCHES NATIONAL PARK

In recent years, Arches National Park has implemented several actions identified in the park's 2006 Transportation Implementation Plan (NPS 2006b). The park has improved vehicle pullouts and expanded many parking areas, including the visitor center (57 percent larger), Balanced Rock (20 percent larger), Sand Dune Arch (110 percent larger), Devils Garden (35 percent larger), and Wolfe Ranch/Delicate Arch (110 percent larger). From a total of 448 parking spaces in 1989, the park now has 857 parking spaces—a 91 percent expansion of parking capacity (Table 1). The park can now generally accommodate approximately 1,700 vehicles during the course of a day (LPES, Inc. 2015) without overcrowding parking areas (Figure 3).

TABLE 1. ARCHES NATIONAL PARK PARKING INVENTORY

Parking Area Name	Standard	Bus/RV	Disabled Accessible	Total Spaces
Visitor Center	134	10	6	150
Park Avenue	16	4	2	22
La Sal Mountains Viewpoint	20	0	1	21
Courthouse Towers	20	0	1	21
Courthouse Wash Bridge	8	0	0	8
Balanced Rock	13	4	1	18
Balanced Rock Picnic Area	5	0	1	6
Garden of Eden	17	0	1	18
Windows Upper	37	3	2	42
Windows Lower (Double Arch)	43	0	2	45
Panorama Point	20	0	2	22
Wolfe Ranch/Delicate Arch Trailhead	120	19	5	144
Wolfe Ranch/Delicate Arch Overflow	11	2	0	13
Delicate Arch Viewpoint	56	18	3	77
Salt Valley Overlook	8	0	0	8
Fiery Furnace	21	0	1	22
Sand Dune Arch	19	3	2	24
Sand Dune Arch – West Side	0	9	0	9
Skyline Arch	8	0	0	8
Devils Garden Picnic Area	14	1	2	17
Devils Garden Trailhead	78	84	0	162
<b>Grand Total</b>	<b>668</b>	<b>157</b>	<b>32</b>	<b>857</b>

NOTE: PARKING SPACES AT ROADSIDE PULL-OFFS (BOTH FORMAL AND INFORMAL) HAVE NOT BEEN INCLUDED SINCE THESE TYPICALLY ARE NOT TRUE DESTINATIONS, BUT MERELY “PHOTO MOMENTS” FOR VISITORS. PARKING SPACES IN THE CAMPGROUND AREA ARE NOT INCLUDED.

Even with these parking area expansions and roadway improvements, vehicle congestion issues remain. Park managers recognize a need for additional visitor amenities and infrastructure improvements at targeted locations (such as shaded picnic areas, minor parking expansions, interpretive displays, toilets, etc.), which may help encourage a more even distribution of visitors and vehicles. However, perpetual expansion of parking areas and amenities to meet ever-increasing demand is not a long-term solution due to obvious environmental impacts and fiscal limitations. Future development of visitor amenities and other infrastructure would include finalized project designs and completed archeological and vegetation surveys, and would be subject to further compliance before construction could occur.

## Relationship to Other Plans and Policies

This plan has been developed in a manner consistent with NPS legal mandates and management policies. Following is more information on how this plan meets the goals and objectives of prior plans and studies:

### *1989 Arches National Park General Management Plan*

The General Management Plan (GMP) established an overall direction for management and use of the park and identified actions for improvement and expansion of some visitor and administrative facilities. The GMP highlighted the vital need for managing increasing visitor and vehicle traffic and congestion in the park. It called for the development of a visitor impact management program to address impacts on natural and cultural resources and visitor experience. Without making specific decisions on carrying capacity or alternative transportation systems, the GMP anticipated that the visitor impact management program would make recommendations for changes in the way park visitors and their vehicles are managed. The GMP identified in “Options Considered but Rejected” an option to introduce a public transportation system. The study concluded that public transportation would be quite costly and might not be economically feasible given the projected level of visitation and transportation system ridership in the foreseeable future.

The GMP also outlined a theoretical daily capacity by multiplying the maximum number of persons at one time (PAOT) by the turnover rate, assuming an average visitor length of stay of 3 hours. The maximum PAOT was calculated by multiplying the estimate for average number of persons per car (3.4) by the number of parking spaces (469 at the time of the GMP). This estimate for the average number of persons per car has since been revised downward to 2.6 based on more current visitor information. While the reservation system proposed in this EA was not designed to establish a daily visitor capacity or a maximum PAOT, it did use available parking capacity to calculate a “practical” or “functional” vehicle capacity for the park.

### *1995 Arches Visitor Experience and Resource Protection Implementation Plan*

This plan incorporates the concepts of a visitor impact management program, as highlighted in the Arches GMP. Crowding and congestion were recognized both for their impacts on the resources and also for their effects on visitors’ experiences. As part of the plan, designs for parking lots and limits on parking capacity were established for the park to protect resources and experiences at main destinations. It anticipated that with increasing visitor use levels, “eventually some people will not be able to find places to park at any of Arches’ primary attractions....[at that point], the park would then have to look at taking further actions to manage use, such as limiting numbers of parties entering the park.”

### *2006 Arches National Park Transportation Implementation Plan*

This plan identified several traffic management strategies for dealing with increased visitation and easing congestion such as expanding parking areas and implementing motorized interpretive tours. This plan addressed using a daily limit permit system for popular park sites, similar to that used for the Fiery Furnace, during peak visitation periods. Mandatory reservations and ticketing options for site-specific permits were considered but dismissed in this plan due to concerns that such systems would be technically infeasible to implement and could not be implemented within the next six years.



### *2012 Arches Alternative Transportation System and Congestion Management Study*

This study evaluated the feasibility of a shuttle system along with two non-shuttle options. The shuttle system was a free non-mandatory park-wide system with two shuttle routes which would theoretically remove 23-28 percent of cars off the road. It was estimated to cost \$1.7 million annually to operate, with an up-front cost of over \$10 million. Two alternatives to a shuttle system were also evaluated. One non-shuttle option was a reservation system capable of achieving the park's targeted vehicle use. The second was a non-shuttle, non-reservation system designed to spread demand in time and space through increased, dedicated staffing, improved communications with park visitors, and enhanced coordination with local partners. Park management implemented elements of this second alternative strategy with some success; however, it was not adequate in addressing the full scope of traffic congestion management needs.

### *2014 Delicate Arch/Wolfe Ranch Site Plan Environmental Assessment*

This plan increased the Delicate Arch / Wolfe Ranch parking area by 110 percent and developed indicators and standards for adaptive management of the site. The action of using a reservation system specific to the Delicate Arch/Wolfe Ranch parking area or to the park overall was approved as a management strategy when the parking lot again exceeds capacity.

The proposed plan analyzed in this Traffic Congestion Management Plan (TCMP) EA is consistent with the goals and objectives of the 2006 NPS Management Policies, which emphasize the need for park units to manage visitor use with resource conservation. In addition, the proposed plan has been reviewed for conformance with the NPS Organic Act, Arches National Park Enabling Legislation, Arches National Park Foundation Statement, Arches National Park General Management Plan, and other park management plans. These management plans are no longer adequate to address the full range of transportation issues now facing park management.

## **ISSUES AND RESOURCE TOPICS RETAINED FOR ANALYSIS**

The following issues and resource topics associated with the proposed plan were identified during internal park scoping and external stakeholder scoping. Resource topics identified below are discussed and analyzed in *Part 3: Affected Environment and Environmental Consequences*.

### **Local Economy**

Gateway communities have strong economic ties to national park visitation because of job creation, value added, and overall economic output (Thomas and Koontz, 2015).

Implementation of the proposed action and the associated reservation system may have impacts to the local economy of Moab, Utah and surrounding areas. Many local businesses serve visitors to Arches National Park. Introducing a reservation system under the proposed action may have positive and negative effects on the operations of those businesses, particularly those that conduct business within the park.

### **Visitor Use and Experience**

Visitor use and experience will continue to be affected by increasing numbers of visitors and traffic congestion within the park under the No Action alternative. Parking will continue to be

an issue, as will long waiting lines at the entrance station. The proposed action would alleviate crowding but would also affect how visitors access the park through implementation of a reservation system.

## **ISSUES AND RESOURCE TOPICS DISMISSED FROM FURTHER ANALYSIS**

The following issues and resource topics have been considered but dismissed from detailed analysis. A brief rationale for dismissing specific topics from further consideration is provided for each below.

### **Air Quality**

Arches National Park is designated as a Class I air quality area under the Clean Air Act. The law requires for Class I areas that ambient air quality (including visibility) must not be caused to deteriorate significantly below baseline levels of clean air. Since the proposed action would alleviate long lines of idling vehicles, there could be a reduction in overall exhaust which would improve ambient air quality. Because impacts would be reduced under the proposed action, air quality has been dismissed from further analysis.

### **Cultural Resources**

Arches National Park protects a notable array of cultural resources that reflect the many different ways people have occupied and used landscapes of the Colorado Plateau over the last 12,000 years (NPS 2013). The National Park Service (NPS 1998) categorizes cultural resources as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources in order to focus attention on the management requirements of historic property types under Section 106 the National Historic Preservation Act of 1966 (NHPA) (54 United States Code 306108).

The range of alternatives considered in this environmental assessment includes the option to implement a reservation system for entry into the park to alleviate traffic congestion. The proposed action would not change or alter the setting of the park's road network or involve any ground disturbing activities having the potential to directly affect cultural resources in the study area. Under the No Action alternative, the impacts from unauthorized overflow parking on road shoulders and associated social trailing may continue to pose a threat to nearby cultural resources where present adjacent to the roadway prism. These impacts may include damage or displacement from driving over or walking through sensitive resources, as well as altering soil characteristics leading to the increased potential for erosion. Implementation of the proposed action is expected to minimize the occurrence of unauthorized use and reduce the potential for such impacts.

The proposed action is therefore expected to result in long-term beneficial effects on cultural resources by controlling vehicle traffic and congestion in order to minimize the potential effects resulting from unauthorized uses. For these reasons, cultural resources have been dismissed from detailed analysis. If new information about ethnographic resources, Tribal concerns, or other subsequent issues is identified as a result of this consultation, the NPS may reconsider this determination.

## **Environmental Justice**

The project area is located within Grand County, Utah. According to the U.S. Census Bureau, Grand County has a minority population of 10 percent Hispanic or Latino, 4.4 percent Native American, and 3.9 percent other minority races, with a poverty rate of 15 percent (Census, 2016).

This project would not alter the physical and social structure of nearby communities. The main park roads are available for use by all populations without any regard to race or income. A proposed system for reservation entry times would be available through online and mobile platforms. No-cost internet is available at community facilities such as schools, the public library, and the Moab Information Center (MIC), where assistance in the use of the internet-based system would be available. The implementation of the proposed action, as indicated in this EA, would not result in any identifiable health or environmental effects to, or disproportionately affect, any minority or low-income population or community.

## **Indian Trust Resources and Indian Sacred Sites**

ECM 97-2 requires the Department of the Interior and its bureaus to explicitly consider the effects of its actions on Indian trust resources in environmental documents (NPS, 2015). The federal Indian trust responsibility is a legally enforceable obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal laws with respect to Native American tribes. Departmental planning also requires that any anticipated effects on Indian sacred sites are explicitly addressed in environmental documents (NPS, 2015). Indian sacred sites include any delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriate authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, any Indian religion. Executive Order 13007 directs federal land managing agencies to (1) accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites.

The proposed action is expected to have no impact on Indian trust resources and Indian sacred sites. There are no Indian trust resources located in the park, and the lands comprising the national park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. The agency has not been informed of the existence of any Indian sacred sites in the park. Consultation with traditionally associated tribes to determine the presence of such sites is ongoing. If new information about Indian sacred sites, tribal concerns, or other subsequent issues is identified as a result of this consultation, the NPS may reconsider this determination.

## **Soils and Geologic Resources**

The No Action alternative would lead to continued parking in undesignated parking areas on road shoulders with the resulting consequence of visitors walking on social trails adjacent to road shoulders to reach popular destinations. Parking on road shoulders (and sometimes on native soils outside the prism of the road and shoulder) followed by walking to the destination would impact soils and geologic resources immediately adjacent to roads and around parking areas. These activities could cause locally adverse effects to soils including soil compaction, soil structure alteration, loss of biological soil crust, and increased potential for erosion along

the roads. Impacts to soils and geologic resources could increase as visitation increases and parking on road shoulders becomes more common.

Arches evaluated the potential significance of roadside parking and walking along social trails by calculating the area that would likely be impacted. There are five highly congested parking areas: Balanced Rock, The Windows, Devils Garden trailhead, Delicate Arch/Wolfe Ranch trailhead, and Sand Dune Arch. For each of these locations, it was assumed that visitors would park up to 0.75 miles from the parking lot on each side of the road. This is equivalent to 1.5 miles of shoulder parking for each location and a total of 7.5 miles of shoulder parking. It was also assumed that disturbances to soils occurred along a five-foot-wide corridor adjacent to the road shoulder. Therefore, the total area impacted is approximately 4.5 acres. Furthermore, it was assumed that impacts were not complete and continuous along the five-foot-wide corridor. Some impacts would be to fill material on and immediately adjacent to road shoulders, and social trails would not occupy the entire affected area. Therefore, 3 acres (0.67 of 4.5 acres) was assumed to be the area adversely affected. For the 11 less congested parking areas (e.g. Park Avenue, Delicate Arch viewpoint, Salt Valley overlook), it was assumed visitors would park 0.25 miles from each location on each side of the road. Using the same assumptions as described above, the area assumed to be adversely affected at less congested locations is 2.2 acres. The total adversely affected area is approximately 5.2 acres, equivalent to approximately 0.006 percent (six one-thousandths) of the total unpaved area of Arches.

Implementation of the proposed action and associated reservation system would be expected to reduce adverse impacts on soils and geologic resources by reducing or eliminating roadside parking and the associated occurrence of walking on or creating new social trails. However, because a negligible percent of native soils is currently affected by roadside parking and social trailing, beneficial impacts to soils would be negligible with the implementation of the proposed action. Therefore, this topic has been dismissed from further analysis.

## **Special Status Species**

Special status species are those that are listed or are candidates for listing, and other species that are of special management concern in the park due to uniqueness, rarity, declining population trends, and/or particular sensitivity to human impacts. The Endangered Species Act of 1973 requires examination of impacts on all federally listed threatened, endangered, and candidate species. NPS policy is to protect and strive to recover all federally listed species that are native to the park, to manage state-listed species similarly to federally listed species to the extent possible, and to manage other species of management concern to maintain their natural distribution and abundance (NPS 2006a). Park subject matter experts determined that there are no threatened or endangered species or critical habitat along or directly adjacent to the road corridor. Because the proposed action involves no new construction or disturbances to wildlife habitat, it poses no issues of concern to the US Fish and Wildlife Service (USFWS) and no consultation under §7 of the Endangered Species Act is necessary. There are no anticipated impacts to special status species from the proposed action; therefore, this topic has been dismissed from further analysis.

## **Vegetation**

Similar to soils and geologic resources, vegetation adjacent to road shoulders and around parking areas would be adversely affected under the No Action alternative. Parking on road shoulders followed by roadside walking to the destination would impact vegetation



immediately adjacent to road shoulders and around parking lots. These activities could cause locally adverse effects to vegetation including direct damage to vegetation, potentially spreading invasive plant propagules, and degrading soils making them more susceptible to invasion by non-native species. As with soil and geologic resources, impacts to vegetation could increase as visitation increases and parking on road shoulders becomes more common. The analysis developed to evaluate impacts to soils and geologic resources is also valid for evaluation of impacts to vegetation.

Implementation of the proposed action and associated reservation system would be expected to reduce adverse impacts on vegetation by reducing or eliminating roadside parking and the associated occurrence of walking on or creating new social trails. Based on the previous analysis developed for soils, direct impacts to vegetation from roadside parking and associated social trailing would be minor because the percent of park vegetation resources adversely affected is negligible. Beneficial impacts to vegetation would be negligible with the implementation of the proposed action; therefore, this topic has been dismissed from further analysis.



FIGURE 8. ROADSIDE PARKING COULD CAUSE DIRECT DAMAGE TO SOILS AND VEGETATION, AS WELL AS POSING HAZARDS TO VISITOR SAFETY DUE TO PEDESTRIANS IN THE ROADWAY (NPS PHOTO).

## **PART 2: ALTERNATIVES**

This chapter describes alternatives for alleviating traffic congestion in Arches National Park. The alternatives presented in this chapter were developed through the scoping process to meet the purpose and need for action. This chapter also addresses alternatives that were initially considered but dismissed from detailed analysis. Finally, this chapter identifies the National Park Service preferred alternative.

### **ALTERNATIVE 1: NO ACTION – CONTINUE CURRENT MANAGEMENT**

Under Alternative 1 [No Action], congestion management strategies would be more reactive than proactive. Park staff would continue to:

- hire seasonal parking lot attendants, as feasible, to help manage traffic congestion within busy parking lots;
- disseminate visitor information and traffic messages through the park newspaper, park radio station, website, park webcams, social media, and news releases;
- recommend that visitors enter the park prior to 8:00 am or after 3:00 pm to avoid traffic congestion;
- suggest that visitors park longer vehicles or trailers at the visitor center before proceeding into other areas of the park;
- provide local businesses with updated traffic and travel information to communicate to area visitors;
- work with the Moab Area Travel Council, Moab Information Center (MIC), Moab Chamber of Commerce, Utah Office of Tourism, City of Moab, Utah Department of Transportation, Grand County, and other local businesses on issues and messaging related to traffic congestion management;
- coordinate with Utah Highway Patrol, Grand County Sheriff's office, and Utah Department of Transportation on the busiest weekends to handle traffic congestion at the junction of the park entrance road with US 191;
- make improvements to signage as needed and in reaction to acute visitor congestion issues; and
- issue Commercial Use Authorizations as currently practiced; there would be no limitations on the number of CUA holder entries into the park.

### **ALTERNATIVE 2: PROPOSED ACTION – IMPLEMENT A RESERVATION SYSTEM**

Under Alternative 2, Arches National Park would implement a reservation system for entry focused on alleviating traffic congestion and improving visitor experience by addressing vehicle flow, parking, messaging, and daily visitation/vehicle patterns. This alternative would allow flexibility to respond to changing conditions and changes in visitation growth and visitor behavior.

#### **Reservation System**

One way to alleviate congestion caused by many vehicles entering the park at the same time would be to spread vehicle entries out over more hours of the day and over more months of the

year. In Alternative 2, a reservation system would be adopted to achieve that outcome. The reservation system would help reduce long traffic queues on the entrance road and long wait times to enter the park by limiting the number of vehicles that could enter during the busiest times of day. By spreading out vehicle entries, other traffic congestion issues at parking areas and visitor amenities are expected to diminish. In this alternative, visitors could enter the park without a reserved entry time before 7:00 am and after 6:00 pm. The reservation time slots for private vehicles, required seven days a week, would be:

Table 2. Proposed Entrance Time Slots

Time of day	Time slot
Early morning	7:00 am to 9:00 am
Late morning	9:00 am to 12:00 pm
Early afternoon	12:00 pm to 3:00 pm
Late afternoon	3:00 pm to 6:00 pm

This reservation system would be internet-based and would likely be hosted by the Recreation.gov website ([www.recreation.gov](http://www.recreation.gov)). This website is currently used for reservations to the Devils Garden Campground and Fiery Furnace Tours at Arches National Park. While the park would not charge for this service, a nominal nonrefundable administrative fee may be charged by the online host. The entrance fee to the park is distinct from this reservation administrative fee and would be purchased separately. Reservations could be made online from personal computers, phones, and similar devices. A computer kiosk may be available at the Moab Information Center (MIC), and the park would work with the community to make the reservation system available at other locations where internet access is provided.

The reservation system would be used during the peak visitation season (currently March through October). During the off-peak season (November through February), the reservation system would not be used and visitors would be able to enter and exit the park without a reservation. If visitation increases during the off-peak season such that congestion issues begin to occur, the park may implement the reservation system during part or all of the winter months.

**Private Users.** The reservation system would be required for private non-commercial vehicles, including motorcycles and all pass holders. This requirement would not apply to:

- visitors entering on foot or bicycle,
- vehicles associated with campground reservations,
- vehicles associated with Fiery Furnace reservations,
- vehicles associated with Special Use Permits,
- vehicles entering the park outside of the 7:00 am to 6:00 pm reservation windows, or
- vehicles entering the park during the off-peak season (currently defined as November through February).

Private users would be able to reserve entry times in two ways:

- 1) In Advance: reservations made more than one day and up to six months before arrival

2) On the Day-Before/Day-Of their visit: reservations made the day before or the day of arrival.

Unreserved advance reservation slots would be converted to day-before/day-of reservation slots, in order to maximize visitor access. Each vehicle entry reservation would be validated at the entrance booth.

**Number of Reservations.** The number of reservations available would be set to achieve 85 percent parking occupancy. The 85 percent occupancy is an industry standard used to identify the “practical capacity” at which there are sufficient empty spaces to assure parking availability (Edwards, 1999). As Table 3 shows, 729 parking spots are 85 percent of the current 857 total parking spots available at Arches National Park. By maintaining 85 percent parking occupancy in each of the entry time slots, 2,006 vehicles can be accommodated within the park throughout the day. This is higher than the 1,700 vehicles shown in figure 3 as the current level of constrained parking. This is because a more even flow of traffic throughout the day, facilitated by the four entrance time slots, would allow for a greater number of daily vehicles to be accommodated without parking lots becoming constrained.

TABLE 3. PARKING OCCUPANCY DURING PROPOSED TIME SLOTS (LPES INC., 2015)

Parking Conditions	Occupancy	Vehicles In Park at Any Given Time	Daily Vehicles Accommodated	Number of Vehicle Entrances			
				7:00 am to 9:00 am	9:00 am to Noon	Noon to 3:00 pm	3:00 pm to 6:00 pm
Free Flowing	80%	686	1,889	344	515	515	515
Functional (proposed)	85%	729	2,006	365	547	547	547
Constrained	90%	771	2,126	386	580	580	580
Severely Constrained	100%	857	2,362	430	644	644	644

Calculations for park-wide vehicle capacity assumed an average visitor length of stay of 4 hours, which was based on previous visitor use studies (NPS, 2003). The Reservation System Design and Implementation study (LPES, Inc. 2015) analyzed four types of reservation systems: daily, semi- (or half)daily, hourly, and a hybrid system utilizing two- to three-hour entrance windows. The hybrid system was selected by the park because it accommodated the most vehicles, while providing balance between flexibility for visitors in arrival times and ease of implementation or incorporation into park operations. 2,006 daily vehicles was chosen as a starting point based on the best information available, and would be adjusted based on monitoring of parking lots and entrance line wait times and as conditions change (for example, the completion of small, targeted parking expansions).

**Commercial Users.** Commercial users are currently managed under Commercial Use Authorizations (CUAs) and are further described below. Under Alternative 2, Commercial vehicles would not be required to obtain reservations through the public online reservation system. Instead, commercial vehicle entrances would be managed through conditions of the CUA agreement. Limits would be placed on the number of daily entrances based on the allocations laid out in Table 4 below. Future planning efforts may occur to address unique needs associated with managing CUA activities.

*Tour buses* — Tour buses are managed in the park under Commercial Tour CUAs, which are issued to commercial groups consisting of one or more persons traveling on an itinerary that has been packaged, priced, or sold for leisure/recreation purposes. No other services (except for incidental services such as on-board commentary and box lunches) are provided. Activities within the park permitted through a Commercial Tour CUA include stopping at the visitor center, at viewpoints, pull-offs, and designated areas outlined in the CUA. Commercial Tour CUA holders pay a CUA permit fee as well as a park entrance fee. Commercial park entrance fees are standard nationwide and are based on vehicle capacity.

Under alternative 2, Commercial Tour vehicles (tour buses and similar vehicles) would not be required to make reservations through Recreation.gov, but instead would be managed via their CUAs. The park would set limits on the number of commercial tour vehicle entrances between 7:00am and 6:00pm in March-October (see Table 4). If demand for commercial tour entrances exceeds these limits, allocations among operators would be made via lottery or a similar system prior to the beginning of the busy season each year.

*Shuttle services* — Shuttle services, including taxis, are managed in the park under Transportation CUAs. Transportation CUAs are issued to companies that provide transportation services from one location to another, such as from Moab to a location in the park. Guided tours, hiking, or other commercial activities and/or services are not provided by these companies—their authorization only allows transportation services. Transportation CUA holders pay the CUA permit fee. In addition, their clients are charged \$10.00 per person aged 16 years and older. Seven-day, annual, and lifetime passes may be used by the clients in lieu of the per-person fee.

Under alternative 2, Shuttle Services would not be required to make reservations through Recreation.gov, but instead would be managed via their CUAs. For instance, a shuttle service may be assigned a specific number of entries per time slot, which would be outlined in the CUA. The number of entries per time slot may be influenced by the total number of Transportation CUAs given for that year.

*Guided activity services* — Guided activity services are managed in the park under Guided Activity CUAs, which are issued to companies bringing visitors into the park for the purposes of guided day hiking, photo workshops, or other guided activities. Guided Activity CUA holders pay the CUA permit fee. In addition, their clients are charged \$10.00 per person aged 16 years and older. Seven-day, annual, and lifetime passes may be used by clients. Commercial drivers are not permitted to use their own personal passes on behalf of clients.

Under alternative 2, Guided Activity Services would not be required to make reservations through Recreation.gov but instead would be managed via their CUAs. For instance, guided activity services would be restricted to a specified number of park entries per time slot. This would be determined and outlined in their CUAs. The number of entries per time slot would be based on the total number of Guided Activity Services CUAs given for that year. Clients would

not be required to make a reservation through Recreation.gov if they arrive at the park entrance in the CUA holder's vehicle. Clients who arrive at the park in their own private vehicle, however, would be required to make a reservation through Recreation.gov.

Table 4 provides a breakdown of the proposed available advance and day-before/day-of reservations for private vehicles, and the number of daily entrances set aside for commercial vehicles. There would be 1,445 advance reservations each day for private vehicles, along with 502 day-before/day-of reservations. A total of 59 daily entrances would be allocated to Commercial vehicles. Commercial vehicle entrance limits would be based on vehicle size. A total of 12 Commercial Tour CUA vehicles with a passenger capacity of 26+ persons (typically motor coach tour buses) would be allowed to enter the park each day, and smaller commercial vehicles with a passenger capacity less than 26 persons (typically shuttles and guided services) would be allowed 47 daily entrances.

Allocations for commercial vehicles were based on historical commercial use (as a percentage of total park entries) and growth trajectories. Allocations for advanced vs. day-before/day-of reservations were determined by considering a reasonable split to allow for advanced planning but still accommodate spontaneous visits. According to recent visitor use studies, 80 percent of park visitors planned their trip a month or more in advance (RSG, 2017).

TABLE 4. ALLOCATION OF ADVANCE AND DAY-BEFORE/DAY-OF RESERVATIONS

Reservation Type	% of Total	Number of Vehicle Entrances	Number Available Per Time Slot			
			7:00 am to 9:00 am	9:00 am to Noon	Noon to 3:00 pm	3:00 pm to 6:00 pm
Private Vehicles, Advance Reservation	72	1,445	263	394	394	394
Private Vehicles, Day-Before/Day-Of Reservation	25	502	91	137	137	137
Set aside for Commercial Vehicles (1–25 pers. capacity, shuttles and guided services)	2	47	8	13	13	13
Set aside for Commercial Vehicles (26+ pers. capacity, tour buses)	1	12	3	3	3	3
Total entrances per day	100	2,006	365	547	547	547

This approach would require ongoing monitoring to acquire the information needed to improve future management. As information about how the system functions becomes clearer over time and reservation trends emerge, the system may be modified and time slots adjusted. A benefit of a computerized system is that it would automatically collect much of the necessary data to make informed adjustments.



The park would build on existing monitoring efforts to track conditions in the park, such as parking availability, visitation patterns, occurrences of roadside or overflow parking, entrance line wait times, and specific resource conditions as they relate to traffic congestion and visitor experience. Crowding and congestion conditions would be monitored through traffic counting devices that would be added to individual parking lots as necessary, and through park staff observations. This data would be compared to the system's 85 percent parking lot capacity target. Entrance station operations would be closely monitored and traffic flow would continue to be optimized to prevent vehicles from backing up onto US 191.

If the reservation system or unexpected changes associated with it substantially increase the burden on park staff or fail to meet the objectives outlined in the purpose and need, other shifts in management such as adjustments to the computer system or time slots or reservation seasons may be needed. Any future changes would be subject to the proper compliance. Basing this approach on continued evaluation over time improves long-term management outcomes, and allows the National Park Service to provide the best and broadest access to the park, while protecting the visitor experience and the resources within the park.

### **Communication and Collaboration**

Communication and outreach activities would be improved under Alternative 2, with staff increasing communication efforts related to the proposed reservation system. The reservation system would be online several months before reservations would be required in an effort to provide ample lead time for visitors to plan. Communication and outreach would be flexible with the ability to evolve to meet the needs of visitors and the park. A long-term communication strategy would be developed to properly convey the purpose of plan implementation and upcoming changes to park operations in order to provide visitors with the information they need to plan their visit to the park.

Park management would solicit feedback from partners and stakeholders. Under Alternative 2, the park would make a concerted effort to expand partnerships beyond those described in the No Action alternative, in order to maximize public awareness of the reservation system and to enable visitors to learn about and take advantage of the full range of activities available to them in the greater Moab area.

### **ALTERNATIVES AND ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED**

During internal scoping, the following alternatives were considered but dismissed from further analysis in this environmental assessment. An alternative may be dismissed from further analysis if it is deemed to result in too great an environmental impact, is technically or economically infeasible, does not resolve the purpose and need for the plan, duplicates another alternative that would likely have less impact or is less expensive, would require a major change to a law, regulation, or policy, addresses issues beyond the scope of the NEPA review, would not be allowed by another agency from which a permit is required, or conflicts with another valid park plan or policy.

## **Shuttle System Alternative**

A shuttle system for Arches National Park has been considered previously. As part of its long-term transportation planning efforts, Arches National Park initiated an *Alternative Transportation System and Congestion Management Study* in 2011 to find a means to reduce traffic congestion, air and noise pollution, greenhouse gas emissions, and the impacts of transportation on the park's valuable resources (NPS, 2012). The study aimed to achieve this reduction by decreasing the number of automobiles within the park, while maintaining and improving public access and visitor experience. The study included both a shuttle alternative and non-shuttle alternatives to meet these goals.

Based on the results of the study, the shuttle system was found to be technically and financially infeasible. The length of the park's road system (a total of 26 miles of paved roads) and the distance between several key areas in the park require one-way shuttle travel times up to one hour and 20 minutes. Annual recurring costs for operation and maintenance of a shuttle system were estimated to be \$1.7 million. An additional \$10.2 million was estimated for up front capital investment costs, including purchasing the buses. Implementation of a shuttle system would require new facilities such as a large parking area near the entrance station and other transit stations, which would likely have substantial environmental impacts on the park (NPS, 2012).

The study found that the best-case scenario for a non-compulsory shuttle system would only result in a reduction of 23–28 percent of cars on park roads. By 2016, annual park visitation had already increased 52 percent over 2011 levels, meaning that traffic congestion would still have worsened even with a shuttle during those years.

Arches National Park staff reviewed shuttle operations at Zion, Bryce Canyon, and Rocky Mountain national parks and noted that although many visitors enjoyed this option, the large pulses of 40–100 visitors dropped off on a trail at one time were causing resource damage and more crowding on the trails.

This alternative was dismissed from consideration because it has been determined to be economically infeasible. Further, it would not meet the purpose and need of this plan because it would not adequately solve the problem of vehicle congestion in the park.

## **Build-for-Demand Alternative**

This alternative proposes to continuously build more parking and infrastructure to accommodate increased vehicle traffic as park visitation grows. Parking lots would be expanded and new trails and parking lots would be built. Undeveloped areas within the park would be marketed and developed. Trails at popular sites would be widened, hardened, and fenced to limit natural resource damage.

This alternative is unsustainable in preserving park resources for the long-term management of the park. It does not recognize the fundamental resources and values documented in the 2013 Arches National Park Foundation Document, which describes healthy vegetation, intact geology and soils, functioning ecosystems, unique cultural features, wilderness character, good air quality, superlative scenery, solitude, and natural soundscapes as fundamental resources and values to be protected in the park. Currently, the park manages backcountry areas as primitive and remote with minimal development in order to ensure park visitors seeking that

type of experience can still experience it, even as popular areas become more crowded. As more and more areas are developed to accommodate visitation, the ability to experience natural sounds and solitude are diminished. The National Park Service mission to “preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations” requires us to balance the protection of resources with the ability for visitors to enjoy our Parks.

The National Park Service is directed to take the financial effects of new facilities into consideration when planning for facility improvements and new development (NPS, 2016b), and to take into consideration not only costs of construction, but also the long-term costs of maintaining the facilities. A “Build-for-Demand” alternative includes substantial and continuous development costs and added maintenance costs such that it would not be financially sustainable in the long-term. This alternative was dismissed from consideration because it would have too great an environmental impact to park resources and would be economically infeasible to implement.

### **Secondary Entrance Road and Fee Booth Alternative**

This alternative proposes to create a formal entrance into Arches National Park either on Willow Springs Road or Salt Valley Road. Each of these unpaved roads connects the paved Arches National Park road to US 191. Salt Valley Road covers a distance of 19.5 miles, 10 of which are in the park and the rest are on lands managed by the Bureau of Land Management (BLM) or other entities. Willow Springs Road covers a distance of 7.7 miles, four of which are in the park and the rest are on lands managed by the BLM and other entities. Each of these rugged, unpaved roads often becomes impassable when wet.

Within the park, the Salt Valley Road is maintained at a level where two-wheel drive vehicles can safely travel the road under favorable weather conditions. Within the park, the Willow Springs Road is maintained at a four-wheel drive level so visitors seeking that type of road experience have that opportunity as specified in the park’s Backcountry Management Plan (NPS, 1988).

If paved, currently quiet backcountry areas like Klondike Bluffs, Herdina Park, and Eagle Park would become crowded with more visitors without significantly reducing congestion in the popular front-country areas of the main park road. Paving these roads would not reduce significantly the number of visitors coming into the park from the main park entrance because this entrance is the most convenient from the city of Moab. Improvement to either road would require very significant and costly upgrades and maintenance programs to ensure they provide dependable access to and from Arches National Park.

This alternative was dismissed from consideration because it would have too great an environmental impact, and fails to meet the purpose and need of this plan. It fails to address vehicle congestion and crowding in popular visitor use sites throughout Arches National Park.

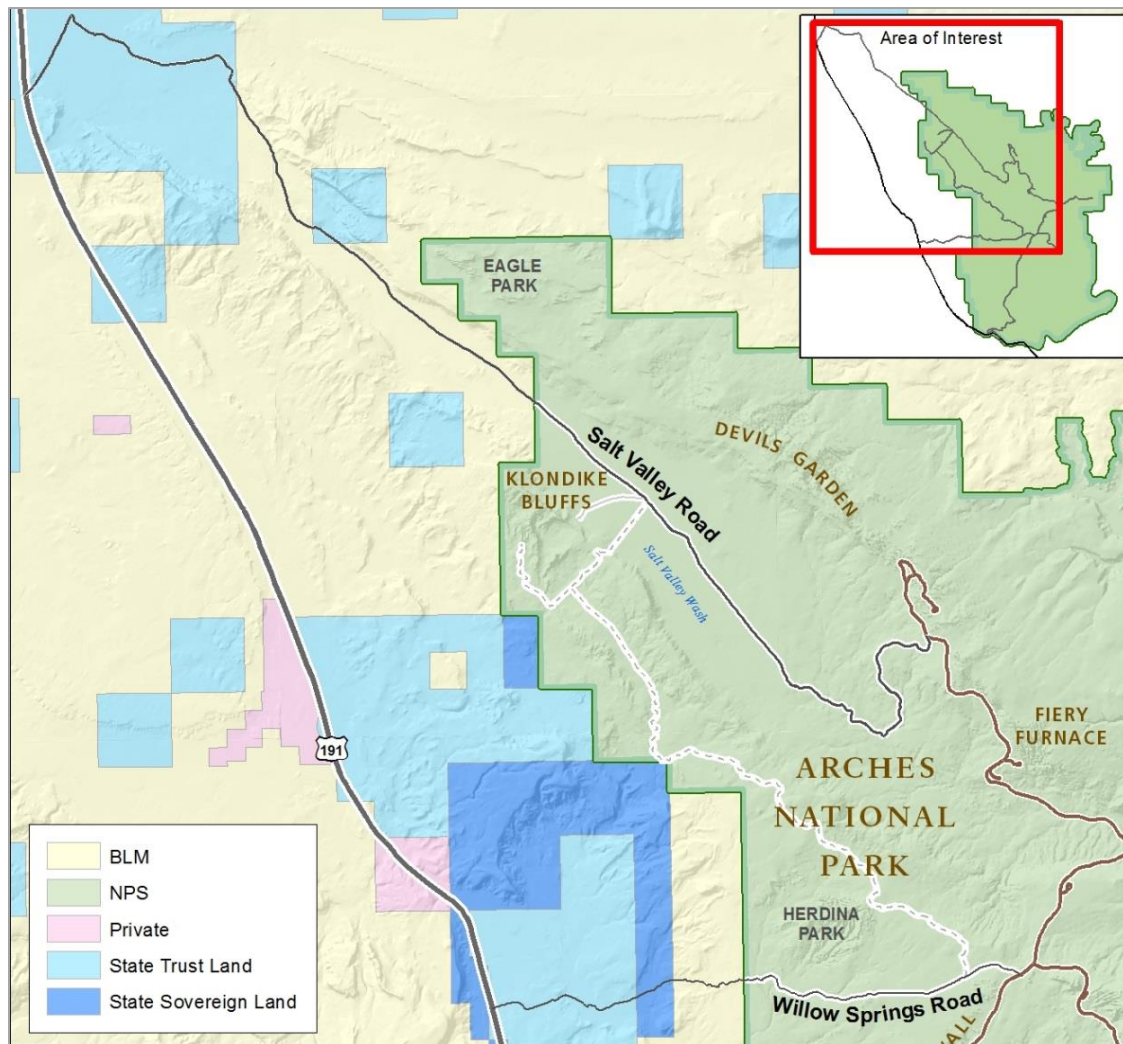


FIGURE 9. PROPOSED LOCATIONS OF SECONDARY ENTRANCES INTO ARCHES NATIONAL PARK

## Daily Vehicle Cap Alternative

A daily vehicle cap would entail closing the park to new vehicle entries once a certain limit is reached. New entries would be allowed only as others leave. The daily limit would be set based on parking lot capacity, factoring in assumptions about the number of cars in circulation at any given time.

This approach does not adequately consider the timing and seasonality of vehicle entries. It puts a hard limit on vehicle numbers without utilizing other strategies such as encouraging visitation at other times of day or in other months or seasons. This alternative would make the ability to enter the park at any given time unpredictable – making it difficult for visitors to plan their visits. It would be based on tracking entrances and exits throughout the day and adjusting entries at the entrance station as needed, which poses a host of operational challenges. This would likely lead to very long queues at the entrance road, the inability of many cars to enter the park some days, and limitations in overall visitation to the park.

This alternative was dismissed from consideration because it would not meet the purpose and need of this plan. It fails to address and would likely worsen the queueing issues at the entrance station.

### **Time-limited Parking Alternative**

Parking at popular parking areas could be time-limited. Time-limited parking could result in higher turnover in parking spaces and a reduction in “tailgating” where visitors stay and occupy a parking space to eat.

This approach would require additional costs associated with hiring staff, including law enforcement staff, to manage parking lots and ensure vehicles leave within the time-limit specified. It would also involve installing additional infrastructure (meters, keys, gated booths, etc.). Additionally, this action could lead to increased demand and increased impacts in areas that have no limits on parking, which don’t have the capacity or infrastructure to adequately handle more visitors.

This alternative was dismissed from consideration because it would not meet the purpose and need of this plan. It fails to address the queueing issues at the entrance station, would not alleviate traffic congestion at busy trailheads as visitors would likely continue to circle looking for an open spot, and would lead to more staff time devoted to traffic management, not less.

### **Site-specific Permits Alternative**

Parking at popular parking areas could be limited or controlled through site-specific permits. Site-specific permits could manage the number of vehicles allowed at a site at any given time, which could reduce vehicle congestion and provide visitors with the certainty of visiting a site and the opportunity to experience the site with less crowding.

This approach would require substantial and costly support infrastructure (control gates, passing lanes, and roundabouts) and the additional costs associated with staffing gates at permitted parking areas. It would be complicated to manage, as it would radically change visitor handling procedures. Visitors could find it frustrating to have to get a site-specific permit to visit popular areas of the park, and would lose the freedom and flexibility to visit the entire park in the manner in which they choose. In some instances, visitors may be unable to obtain their desired site-specific permit and would have to forego visiting those sites. Additionally, site-specific permits could lead to increased demand and increased impacts in areas that do not require a permit for parking, which don’t have the capacity or infrastructure to adequately handle more visitors.

This alternative was dismissed from consideration because it would not meet the purpose and need of this plan. It fails to address the queueing issues at the entrance station and would lead to more staff time devoted to traffic management, not less.

## **NATIONAL PARK SERVICE PREFERRED ALTERNATIVE**

The National Park Service has identified Alternative 2, the proposed action alternative, as the preferred alternative.

## **PART 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This chapter describes the affected environment and analyzes the resource topics identified in Part 1 and potential environmental consequences that may occur as a result of implementing any of the alternatives.

In accordance with the Council on Environmental Quality (CEQ) regulations, direct, indirect, and cumulative impacts are described (40 CFR 1502.16) and the impacts are assessed in terms of context and intensity (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts are also described and incorporated into the evaluation of impacts.

### **ANALYZING CUMULATIVE IMPACTS**

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts are determined for each resource topic by combining the impacts of the alternative being analyzed and other past, present, and reasonably foreseeable future actions that also would result in beneficial or adverse impacts. Cumulative impacts are considered for both the no action and the preferred alternative. The geographic scope for the cumulative impacts is all areas within the Arches National Park boundary. The temporal scope is 5-10 years, but also includes earlier projects. Projects considered in the cumulative impact analysis and the potentially affected resource are described and identified below.

#### **Past**

- Parking lot expansions since 1989 have increased parking capacity by 91 percent (448 parking spaces in 1989 to 857 parking spaces in 2016).
- A new park entrance road was constructed in 2002 and lengthened the existing entrance road by 0.6 miles (approximately a tripling of capacity).
- A new park visitor center and parking lot were constructed in 2002; visitor center square footage increased by 420 percent and parking lot expanded by 57 percent.
- Entrance fees increased by 250 percent (from \$10 to \$25) in October 2015 for private vehicles. All other users saw entrance fee increases of 200-300 percent, and fees for camping and Fiery Furnace permits also increased.

#### **Current**

##### **Parkwide Road Maintenance and Modification (Rehabilitating, Restoring, and Resurfacing = 3R) Project**

The 3R project includes resurfacing, restoring, and rehabilitating approximately 23 miles of the main road and pullouts in Arches National Park. In addition, the project includes slight widening (up to 6 feet total) of the road and shoulders, construction of



turnarounds at The Windows Section and the entrance station, removal and replacement of railings at Courthouse Wash Bridge, drainage work near the entrance station, and construction of a second entrance lane on the main park entrance road. This work started in March 2017 and is expected to be completed in November 2017.

## **Reasonably Foreseeable**

### **Multi-Use Connection to Moab Canyon Pathway (Multi-Use Pathway)**

Moab Canyon Pathway is a paved multi-use path that extends about 10 miles from the pedestrian/bike bridge across the Colorado River north of Moab to the intersection of US 191 and UT 313. The Moab Canyon Pathway does not currently extend into the park. In order to access the park now, pedestrians and cyclists using the Pathway to access the park have to use the park entrance road amidst motor vehicles. This project would construct a dedicated path for cyclists and pedestrians from the existing pathway to the Arches Visitor Center.

### **The Windows Parking Lot Expansion**

Previous to this planning process, a parking expansion project at The Windows Section was submitted for funding through the National Park Service, and preliminary designs have been prepared (Appendix A). This project aims to expand parking capacity at The Windows Section by 10-30 percent. Project funding has been requested for fiscal years 2019 and 2020. Final project designs will be submitted, archaeological and vegetation surveys will be performed to inform decision-making and the proper NEPA and Section 106 compliance will be completed, prior to construction.

## **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

Resource topics are described in their current conditions and then analyzed for impacts in the context of each alternative.

### **Local Economy**

Arches National Park is located in Grand County, Utah, and the largest gateway community is Moab, Utah, located five miles from the park entrance. Moab is the largest community in a two-county region and is the county seat of Grand County. Table 5 shows population trends since 1980 for Grand County and Moab.

TABLE 5. POPULATION IN REGION, 1980–2015 (CENSUS 2016)

Year	Grand County	City of Moab
1980	8,250	5,333
1990	6,591	3,971
2000	8,485	4,779
2010	9,225	5,046
2015	9,516	5,235

In Grand County, population growth is attributed to net immigration of new people rather than to natural increases (birth/death rate ratios). The incomers are mostly people under 30 and over 55 attracted to outdoor recreation and/or second home opportunities (BLM, 2012).

In 2016, unemployment was 5.8 percent in Grand County in comparison to 4.9 percent in the US as a whole (BLS, 2017). The Moab area has a large seasonal workforce, and unemployment rates fluctuate from less than 4 percent in summer months to approximately 10 percent in winter months (Moab Chamber of Commerce, 2017).

The Moab area has a history of resource extraction (potash, uranium, and oil/gas) and agricultural use (small farms, orchards, and livestock). Other prominent industries are government, retail trade, accommodation, and food services. In recent years, employment in coal mining, construction, and power generation industries has been on the decline (Hatt, 2015). At the same time, recreation and tourism has grown to be the largest economic contributor in the region. Tourism-related jobs account for 56 percent of the local workforce and contribute 83 percent to the local economy (Moab Chamber of Commerce, 2017).

Approximately 2.5 million people visit the Moab area each year to participate in a multitude of recreational opportunities on public lands, including national parks, Utah state parks, Bureau of Land Management lands and US Forest Service lands. Activities include but are not limited to river running, mountain biking, off-road driving, photography, scenic driving, sightseeing, hiking, and hunting (BLM, 2012). Most visitors stay overnight in or around Moab while visiting the park.

Gateway communities have strong economic ties to national park visitation because of job creation, value added, and overall economic output (Thomas and Koontz, 2015). The nationwide trend that national parks play a prominent role in small gateway community economies holds true for Arches and the greater Moab area. For example, in 2016, Arches National Park visitors spent an estimated \$188.8 million in the local gateway region during visits. These expenditures supported a total of 3,100 jobs, \$78.7 million in labor income, \$142.1 million in value added, and \$251.6 million in economic output in the local gateway economy (NPS, 2016c).

**Impacts of Alternative 1 – No Action Alternative.** Under Alternative 1, current management practices and traffic congestion issues within Arches National Park would continue. It is anticipated that visitation would continue to increase, with visitors spending time within the park and surrounding areas. This visitation growth would contribute to the primary industry of tourism and recreation in the greater Moab area, and contribute to overall economic growth of the local economy.

Although recent experience offers no indication that crowded conditions in the park or long wait times at the entrance stations have curbed interest in, or visitation to, the park, previous visitor use studies have shown that some small percentage of visitors would be dissuaded from visiting an area due to overcrowded conditions, a phenomenon referred to as “recreation displacement” (Anderson and Brown, 1984; Lawson and Manning, 2001; Manning and Valliere, 2001). It is unknown and difficult to quantify how many potential visitors have been dissuaded from visiting Arches National Park due to traffic congestion and crowding. With projected increases in visitation, the percent of visitors who are “recreationally displaced” would likely increase. When (or if) the number of “recreationally displaced” visitors would potentially curb visitation growth rates to the point where there is a material impact on the growth of the local economy is unknown.

While some private users may be dissuaded from visiting the park due to traffic congestion and crowding, commercial users are less likely to be affected or may see only beneficial effects from increased visitation. Commercial Use Authorizations would continue to be issued to companies as currently practiced (see Table 6). There would be no limitations to the number of CUA holder entries into the park under Alternative 1.

In 2016, there were 267 CUA holders operating in the park, which was a 434 percent increase from 2010. Most of that increase can be attributed to growth in Commercial Tour bus CUAs. Service-wide and local trends suggest this number would likely continue to increase.

TABLE 6. COMMERCIAL USE AUTHORIZATIONS ISSUED IN 2016

CUA type	Number issued (2016)
Commercial Vehicle Tours (Buses) and Transportation (Shuttles)	159
Guided Interpretive Day Hiking	56
Still Photography Instruction	39
Guided Interpretive Backpacking (no longer issued)	7
Guided Road Bike Tours (no longer issued)	6
TOTAL	267

The park does not have detailed daily data on shuttle and guided services vehicle entries, but rough estimates based on reported 2016 CUA visitation data indicate that on average, each CUA holder made 20 trips into the park during the course of the year.

Commercial Tour bus CUA entrance data is collected at the fee booth. In 2016:

- 1,457 buses entered the park,
- 97 percent of them came between March and October,
- an average of 4 buses entered the park each day during the course of the full year,
- an average of 6 buses entered the park each day from March-October, and
- on the busiest day for bus tours in 2016, 22 buses entered.

With no limits on commercial use in place and considering current CUA growth rates, businesses would likely continue to see growth opportunities as visitation and demand for tours and guided services continues to grow.

### **Cumulative Impacts**

There are no cumulative effects to the local economy anticipated with the No Action alternative in conjunction with past parking expansions, 3R project, Moab Canyon Pathway, or The Windows parking expansion.

### **Conclusion**

Overall, it is anticipated that Alternative 1 would have little effect on the local economy and would not change the current way businesses operate in the region. There could be minor beneficial impacts to the local economy associated with the projected growth in visitation to the park and associated opportunities for commercial services; however, the effects of

“recreation displacement” due to traffic congestion and crowding are unknown and may eventually have adverse impacts on future visitation growth to the park.

**Impacts of Alternative 2 – Implement a Reservation System.** Under this alternative, the reservation system would be implemented. Other actions such as outreach, education, and collaboration with partners would be expanded. It is expected that the park would continue to attract visitors and contribute to the primary industries of tourism and recreation, and to overall economic growth of the region. Nevertheless, the rate at which park visitation continues to increase in the long term would likely be lessened relative to the no-action alternative.

However, because of the diversity of recreational activities and alternative tourist attractions in the region, there is no indication that the reservation system would deter people from visiting the Moab region or using the commercial services in the area in large enough numbers to have a substantial negative impact on economic growth.

In 2016, there were 99 days when vehicle entrances during the reservation season exceeded 2,006, equal to 44 percent of the days in the reservation season. 18,538 vehicles (3.2 percent of total vehicle entrances), or approximately 48,000 visitors, would have been displaced under the proposed reservation system. These visitors would have to shift their entrance earlier or later in the day or to another day with excess capacity. Ample excess capacity exists to accommodate these displaced visitors throughout the year, particularly in November through March. In fact, up to 40 percent more vehicles than 2016 levels could be accommodated by current transportation and parking infrastructure, if entrances were spread evenly across the year.

If the implementation of the reservation system achieves this anticipated effect of shifting some of Arches visitation from the peak months during which reservations would be required (March – October) to the non-peak months during which reservations would not be required (November – February), this could have beneficial effects on the local economy. This shift in visitation patterns would effectively spread visitation to the off seasons, thereby lengthening the tourist season and providing local businesses with more reliable, year-round economic opportunities and providing the labor force with more reliable, year-round employment opportunities.

Alternative 2 may change the way businesses that have CUAs operate. While CUA holders would not have to obtain reservations through the online Recreation.gov system, CUA conditions would impose certain limits on the number of commercial vehicle entrances during peak seasons. The limit of 12 daily commercial tour bus entries (see Table 4) is twice the average number of buses currently entering the park during peak season. There were only 25 days in 2016 when more than 12 tour buses entered the park. The limit of 47 daily smaller commercial vehicle entries (shuttles and guided services) would accommodate half of our current CUA holders in these categories each day. Based on the frequency with which these CUA holders have historically entered the park, this allocation is not anticipated to adversely impact their business. The new CUA conditions could have the effect of limiting growth opportunities. At the same time though, the reservation requirements for private visitors could create increased demand for commercial tours, commercial transportation, and commercial guiding – as these businesses could provide an alternative means of entry to the park for visitors who were unable to secure a reservation.

### **Cumulative Impacts**

There are no cumulative effects to the local economy anticipated with the proposed action alternative in conjunction with past parking expansions, 3R project, Moab Canyon Pathway, or The Windows parking expansion.

### **Conclusion**

Overall, Alternative 2 is not anticipated to have major impacts on the local economy. It is expected that tourists and visitors will continue to come to the region and support the businesses that currently exist. To the extent that a reservation system limits the long-term growth trajectory of visitation to Arches, some adverse impacts on the local economy could be felt. These are anticipated to be minor, given the region's other public lands and recreational draws. Moreover, it is expected that the reservation system may spread visitation more evenly throughout the year, lengthening the tourist season in the Moab area, and having beneficial effects on the local economy. Imposing certain limits on daily vehicle entrances in CUA conditions may alter business operations and restrain growth opportunities for some CUA holders. But limiting private entries into the park is also anticipated to create an increase in demand for some commercial services.

### **Visitor Use and Experience**

Arches National Park is a popular year-round destination for people visiting from around the world. The park offers a variety of recreational experiences including sightseeing, hiking, ranger-led programs, picnicking, special tours (i.e. Fiery Furnace), camping, rock climbing, canyoneering, bicycling, and mountain biking. The park has magnificent viewpoints and photo stops, as well as access to backcountry wilderness recreation. Visitors are able to enjoy many of the park's arches and landscape features while driving along park roadways. Many visitors to Arches National Park also recreate on nearby public lands or rivers during their stay in the Moab area. Over 2.5 million people are estimated to visit the Moab area each year. In the past three years, Arches National Park has hosted well over one million visitors annually and in 2016, park visitation was roughly 1.6 million. Visitation between 2006 and 2016 has grown at an annual rate of 6.6 percent

While the park is visited year-round, there is a distinct peak season that currently occurs between March and October, when 91 percent of park visitors visit. 40 percent of visitors come just during the summer months of June through August. From March through October 2016, an average of 2,117 vehicles entered the park daily. Weekends during this period averaged 2,300 vehicles daily. These numbers are increasing each year (please refer to pages 1 through 4 for more information on visitor use trends). The most vehicles recorded entering Arches National Park in one day occurred on the Sunday of Memorial Day weekend in 2016, with 3,230 vehicles entering the park.

Arches National Park is typically considered a drive-through park where most visitors stay less than half a day, although some stay longer for extended hiking or camping. The park estimates the average visitor stay at 4-5 hours (NPS, 2003 and RSG, 2017).

Associated with the increases in visitors and their vehicles in the park, visitors now experience overcrowding at popular attractions, congestion on park roads and in parking areas, and unsafe walking routes along a busy roadway to reach destinations. Visitors often wait in long lines to get into the park. Park staff report many problems and challenges associated with managing parking, traffic congestion, and the associated effects on visitor experience.

**Impacts of Alternative 1 – No Action Alternative.** Under Alternative 1, current management practices within Arches National Park would continue, and traffic congestion would likely continue to worsen. Other actions such as outreach, communication and collaboration with partners would also continue. Even with frequently updated traffic information provided to all media outlets, the majority of visitors still enters the park during the peak season of March through October and between 9:00 am and 3:00 pm daily, and would likely continue to do so. In 2016, 640,000 visitors (42 percent of total visitation) entered on the 99 days when the park exceeded its 85 percent parking occupancy target (NPS, 2016a). Those visitors experienced the impacts of heavy congestion. Since visitation is anticipated to continue to grow over time, the current issues with wait times and crowding are expected to intensify.

Under Alternative 1, visitor amenities already planned would be built but these amenities would not address vehicle congestion park-wide. With increases in visitation, it is anticipated that some people would have inadequate access to bathroom, picnic, and parking areas. Parking would remain limited and visitors would continue to experience difficulty in finding parking spaces during peak times and seasons. With no limits on commercial use in place and considering current CUA growth rates, parking lot capacities to handle large tour buses and other commercial vehicle use would be regularly exceeded, exacerbating parking difficulties for visitors. Some visitors would continue to park in undesignated areas along roadsides. Roadside parking can lead to unsafe conditions for visitors, such as walking along or in the roadway or on uneven terrain adjacent to the road edge, and potential damage to park natural and cultural resources from the creation of social trails and trampling impacts on native vegetation and soils.

Visitors would continue to experience long traffic lines during peak times and seasons at the entrance station. As visitation increases, the likelihood of the traffic queue reaching US 191 increases as well. When this occurs, unless the park can move cars rapidly through the entrance area, the intersection may have to be closed for safety purposes, restricting access to the park. Visitors' knowledge of closures and ability to plan for entry time and anticipated wait times would remain unpredictable under this alternative. Staff time would be overwhelmed by managing vehicle congestion and crowding, diverting staff from their normal duties and limiting the availability of other visitor services.

Previous visitor use studies have shown that some small percentage of visitors would be dissuaded from visiting an area due to overcrowding, referred to as "recreation displacement" (Anderson and Brown, 1984; Lawson and Manning, 2001; Manning and Valliere, 2001). It is unknown and difficult to quantify how many potential visitors have been dissuaded from visiting Arches National Park due to traffic congestion and crowding; however, with projected increases in visitation, the percent of visitors "recreationally displaced" would likely increase. Adverse effects to visitor experience as a result of worsening traffic congestion and crowding in the park are also likely to increase with increased visitation.

### **Cumulative Impacts**

Past actions including increasing parking capacity, increasing the length of the entrance road, increasing the size of the visitor center and parking lot, and increasing entrance fees have contributed to accommodating increases in visitation and improvements to overall visitor experience. However, with substantial increases in visitation over the past 10 years, these improvements have been insufficient to accommodate traffic volumes and congestion during peak visitation periods. This has adversely affected visitor experience by increasing wait times and unpredictability.



The current 3R Project added a second inbound entrance lane, which should reduce the incidence of traffic queues at the entrance stations reaching US 191. The 3R Project will alleviate some of the difficulties in parking for visitors by providing newly paved pull-offs and clearly designated areas where parking is allowed. However, these pull-offs will not address the heavy vehicle pressure that comes with high visitation, and visitor experience would continue to be adversely impacted by congested parking areas during peak times and peak seasons.

The Multi-Use Pathway would make it safer for those visitors entering the park by bike or on foot. The Windows parking expansion would address some of the difficulties in parking for visitors by providing additional parking spots; however, it would only alleviate vehicle congestion at The Windows section of the park and may not adequately handle long-term vehicle congestion associated with continued increases in visitation. Therefore, considering the impacts to visitor use and experience from Alternative 1 [No Action] in the context of other past, present, and reasonably foreseeable future actions, the overall cumulative effect is adverse and long-term.

### **Conclusion**

While Alternative 1 would allow visitors the freedom to visit the park without a reservation, it would result in long-term, adverse impacts to visitor experience, including long wait times, crowded parking areas, inadequate visitor amenities, unsafe conditions with visitors walking in the roads, and unpredictability. These adverse impacts are expected to intensify over time as visitation increases.

**Impacts of Alternative 2 – Implement a Reservation System.** Under Alternative 2, the reservation system would be implemented. Other actions such as outreach, communication, and collaboration with partnerships would be expanded. Visitor amenities already planned would be built. With a more even flow of visitor and vehicle traffic achieved through the reservation system, these amenities should be sufficient long-term to accommodate visitor use.

The reservation system would allow for 2,006 vehicles to enter the park between 7:00 am and 6:00 pm each day, March through October. Additional vehicles could enter before or after these times. This limit is slightly above average visitation levels at Arches from this time period in 2016 – the park experienced approximately 1,900 vehicle entrances per day between 7:00 am and 6:00 pm from March through October. However, this limit would restrict the number of vehicles entering the park on busier days. There were 99 days in 2016 where daily vehicle entrances between 7:00 am and 6:00 pm exceeded 2,006, equal to 44 percent of the days in the reservation season (NPS, 2016a). 18,538 vehicles (3.2 percent of total vehicle entrances), or approximately 48,000 visitors, would have been displaced under the proposed reservation system. However, the system has ample excess capacity, particularly during offseason months, to accommodate these potentially displaced visitors. Up to 40 percent more vehicles than 2016 levels could be accommodated by current transportation and parking infrastructure, if entrances were spread evenly across the year.

The reservation system would have an adverse effect on displaced visitors by either forcing them to change their entry time or day, or foregoing their visit altogether. In addition, some sense of spontaneity may be lost for visitors who do not want to or are unable to plan ahead for a reservation. Alternatively, the reservation system would have beneficial effects on park visitors, by offering the certainty of park entrance on the selected time and day. It also offers the advantage of less crowded conditions, including ease of finding parking places at key

attractions. Fewer visitors would park in undesignated roadside areas or walk unsafely along roadsides.

If visitors cannot gain access into Arches National Park on a certain day, there are many other recreational opportunities available close by, including but not limited to: visiting Canyonlands National Park, state parks, US Forest Service, or BLM lands; taking a scenic drive; hiring a recreational tour; or recreating in the town of Moab. While Arches National Park is a draw to visitors, there are many other draws to the area.

Increased communication with visitors and the public, along with collaborative partnerships, would help redistribute visitation in the area and in the park across seasons and times of day and could help mitigate potential impacts.

### **Cumulative Impacts**

Past actions as described in the No Action Alternative have contributed to accommodating increases in visitation and improvements to overall visitor experience. However, as visitation has substantially increased over the past 10 years, these improvements have been insufficient to accommodate traffic volumes and congestion during peak visitation periods, which has adversely affected visitor experience.

The 3R Project will alleviate some of the difficulties in parking for visitors by providing newly paved pull-offs and clearly designated areas where parking is allowed. The Multi-Use Pathway would make it safer for those visitors entering the park by bike or by foot. The Windows parking expansion would improve visitor experience there and alleviate some of the difficulties in parking for visitors by providing additional parking spots. The Windows parking expansion, past parking expansions, 3R roadway and pull-off improvements, and entrance road improvements should be adequate to handle the more manageable levels of vehicle traffic anticipated with the implementation of a reservation system. These actions should improve visitor experience by decreasing wait times and unpredictability. Therefore, considering the impacts to visitor use and experience from the preferred alternative [Alternative 2] in the context of other past, present, and reasonably foreseeable future actions, the overall cumulative effect is beneficial and long-term.

### **Conclusion**

Alternative 2 would result in both adverse and beneficial effects to visitor experience. Adverse effects include dissatisfaction with having to book an entrance time prior to arrival and the potential for some visitors to be turned away. This impact could be lessened over time through continued outreach and communication, but some visitors may still experience difficulties with the reservation system or be unaware of its requirement. The implementation of the proposed alternative would make advanced planning more necessary for visitors. Beneficial effects would include shorter wait times, less crowded parking areas, more accessible visitor amenities, safer wayfinding and pedestrian areas, and more predictability in access and wait times.

## **PART 4: CONSULTATION AND COORDINATION**

The National Park Service conducted scoping to develop and refine the purpose of and need for the project, identify potential management alternatives, and identify the issues relevant to analysis of those alternatives. Scoping was conducted with park staff, the general public, stakeholder groups, associated Native American tribes, and federal, state, and local agencies.

### **INTERNAL SCOPING**

Internal scoping was conducted by an interdisciplinary team of professionals from the National Park Service. Team members met to discuss the purpose and need for the project, various alternatives, potential environmental impacts, and cumulative impacts. The team also gathered background information and discussed public outreach for the project.

### **EXTERNAL SCOPING**

External scoping was initiated with the distribution of a public scoping newsletter to inform the public of the proposal to develop a traffic congestion management plan for Arches National Park and Canyonlands National Park. The newsletter was mailed to approximately 200 contacts including local government offices, chambers of commerce, local newspapers, and other stakeholders. Letters were mailed to representatives of 29 park-affiliated tribes. The letter was also available on the park website and on the National Park Service website for Planning, Environment and Public Comment ([parkplanning.nps.gov](http://parkplanning.nps.gov)). In addition, a public meeting was held in Moab regarding congestion topics as well as a proposed entrance fee increase. The National Park Service received public input during the 30-day public scoping period between July 20 and August 19, 2015. During the external scoping period, approximately 121 pieces of correspondence were received from the public through the PEPC website and letters.

On October 12, 2015, a newsletter with project updates and preliminary alternatives was distributed to the public for another 30-day review from October 14 to November 12, 2015.

During much of the scoping, management actions were considered for both Arches and Canyonlands national parks. Canyonlands National Park and Arches National Park are in close proximity to one another (26 miles) and are both recreational draws to the greater Moab, Utah area. In addition, sometimes a management action at one park may affect use or operations at the other so it was thought that they should be considered simultaneously. During the planning process, unique management alternatives emerged for each park such as the reservation system at Arches National Park and additional parking development at Canyonlands National Park. The effects of each action on the other park were not readily quantifiable, nor could they be confidently predicted. After further review, the primary elements for each were deemed separate enough to warrant separate planning documents and environmental compliance reviews based on differences in visitation patterns and a current lack of adequate traffic data at Canyonlands National Park. Therefore, congestion management at Canyonlands National Park, including the addition of amenities and parking/driving enhancements, will be addressed in a separate planning document. The addition of visitor amenities and small, targeted parking enhancements were originally considered as part of this planning process. The scope was a broader effort to distribute visitor use across space and time to relieve traffic congestion and crowding throughout the park.

Observed visitor behavior, visitor use and visitation data have shown that additional amenities or parking enhancements in areas of low visitation will not adequately relieve the crowding and congestion at popular use sites within the park. Because additional visitor amenities and small, targeted parking enhancements would be inadequate to resolve the purpose and need for the plan, the scope of the EA was narrowed to focus on the reservation system only.

## **AGENCY CONSULTATION**

In accordance with the Endangered Species Act, the National Park Service contacted the US Fish and Wildlife Service to consult on federally listed special status species. As described in *the Special Status Species* section in the *Purpose and Need* chapter, special status species were determined to be a resource topic dismissed from further analysis.

Compliance with section 106 of the National Historic Preservation Act is being conducted through ongoing consultation with the Utah State Historic Preservation Officer and traditionally associated Native American tribes.

## **NATIVE AMERICAN CONSULTATION**

The NPS initiated consultation with twenty-nine Native American tribes on September 11, 2015 to provide notice of the development of the traffic congestion management plan and to solicit input on congestion management strategies as part of the plan. These tribes included:

Hopi Tribal Council	Pueblo of Santo Domingo
Jicarilla Apache Nation	Pueblo of Taos
Kaibab-Paiute Tribal Council	Pueblo of Tesuque
Navajo Nation	Pueblo of Zia
Paiute Indian Tribe	San Felipe Pueblo
Pueblo of Acoma	San Juan Pueblo
Pueblo of Cochiti	Sandia Pueblo
Pueblo of Isleta	Santa Ana Pueblo
Pueblo of Jemez	Southern Ute Tribe
Pueblo of Laguna	Ute Indian Tribe
Pueblo of Nambe	Ute Mountain Tribe
Pueblo of Picuris	White Mesa Ute
Pueblo of Pojoaque	Ysleta Del Sur Pueblo
Pueblo of San Clara	Zuni Tribal Council
Pueblo of San Ildefonso	

One response was received from the Hopi Tribe who expressed support for visitor management actions that did not involve construction activities and new developed areas resulting in ground disturbing activities that may adversely affect prehistoric cultural resources. The NPS will continue to consult with the tribes throughout the planning process and implementation of this plan. If additional information regarding ethnographic resources or traditional uses is provided, the park will work with the concerned parties to avoid any potential impacts associated with any element of this plan.

## **PART 5: ACRONYMS**

Rehabilitate, Restore, and Resurface (3R)  
Bureau of Land Management (BLM)  
Code of Federal Regulations (CFR)  
Commercial Use Authorizations (CUAs)  
Council on Environmental Quality (CEQ)  
Environmental Assessment (EA)  
General Management Plan (GMP)  
Moab Information Center (MIC)  
National Environmental Policy Act (NEPA)  
National Historic Preservation Act (NHPA)  
National Park Service (NPS)  
Persons At One Time (PAOT)  
Traffic Congestion Management Plan (TCMP)  
United States Fish and Wildlife Service (USFWS)

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# APPENDIX A: THE WINDOWS SECTION PARKING AREA IMPROVEMENTS

The preliminary concept for the enhancement and expansion of the transportation network at The Windows Section in Arches National Park includes additional parking identified in light grey. Project designs, cultural resource surveys, and vegetation surveys would be finalized and completed prior to any construction.

