



# Visitor Access Management Draft Plan and Environmental Assessment

August 2024

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# CONTENTS

Chapter 1: Purpose And Need.....	1-1
Introduction .....	1-1
Background and Project Area .....	1-1
Purpose and Need for the Visitor Access Management Plan.....	1-2
Purpose of the Plan.....	1-2
Need for the Plan.....	1-2
Planning Considerations for Visitor Access.....	1-2
Provide Equitable Visitor Access and Use .....	1-2
Reduce Road Congestion.....	1-3
Reduce Parking Lot Congestion .....	1-3
Improve Quality of Visitor Experience.....	1-4
Reduce Impacts on Park Facilities and Operations.....	1-5
Reduce Impacts on Natural Resources.....	1-5
Reduce Impacts on Cultural Resources.....	1-6
Preserve Wilderness Character .....	1-6
Relationship to the Park Planning Portfolio .....	1-6
Visitor Use Management.....	1-7
Chapter 2: Alternatives.....	2-1
Introduction .....	2-1
Strategies Common to All Alternatives, Including No Action .....	2-1
Visitor Communications.....	2-1
Technology Improvements.....	2-2
Transit Services .....	2-2
Traditionally Associated Tribal Nation Access.....	2-2
Nonrecreational Pass-Through Travel.....	2-3
Private Landowner Access.....	2-3
Commercial Visitor Services .....	2-3
Roadway and Parking Changes.....	2-3
Temporary Area Closures for High-Demand Areas.....	2-3
Alternative A: No Action (Continue Current Management) .....	2-4
Concept Statement.....	2-4
Zoning and Desired Conditions.....	2-4

Visitor Capacities .....	2-4
Common to All Action Alternatives.....	2-5
Zoning and Desired Conditions .....	2-5
Indicators and Thresholds .....	2-7
Responsive Management Components.....	2-10
Visitor Communications.....	2-12
Technology Improvements.....	2-13
Entrance Stations.....	2-13
Reservation Systems.....	2-13
Planned Events.....	2-13
Exemptions and Other Reservation Holders .....	2-14
Commercial Services.....	2-14
Visitor Capacities .....	2-15
Actions Common to Alternative B and Alternative C .....	2-15
Hetch Hetchy Hours.....	2-15
Other Actions.....	2-15
Alternative B: Parkwide Reservations – Peak Hours, Daily (Park Preferred) .....	2-16
Concept Statement.....	2-16
Time of Day .....	2-16
Other Reservation Holders .....	2-16
Alternative C: Parkwide Reservations – Timed Entry.....	2-16
Concept Statement.....	2-16
Time of Day .....	2-17
Other Reservation Holders .....	2-17
Alternative D: Yosemite Valley Reservations – Timed Entry .....	2-17
Concept Statement.....	2-17
Time of Day .....	2-17
Reservation Checkpoint Station .....	2-17
Roadway Changes.....	2-18
Other Supporting Infrastructure.....	2-18
Other Reservation Holders .....	2-19
Indicators and Thresholds.....	2-19
Summary of Alternatives.....	2-20
Actions and Strategies Common to All Action Alternatives.....	2-20

Chapter 3: Environmental Consequences.....	3-1
Introduction .....	3-1
Methodology .....	3-1
Visitor Access, Use, and Experience.....	3-2
Current and Expected Future Condition of Visitor Access, Use, and Experience If No Action Is Taken .....	3-2
Effects of Actions Common to All Action Alternatives.....	3-9
Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily.....	3-11
Effects of Alternative C: Parkwide Reservations – Timed Entry.....	3-15
Effects of Alternative D: Yosemite Valley Reservations – Timed Entry.....	3-17
Comparative Conclusion across Alternatives.....	3-19
Socioeconomics .....	3-20
Current and Expected Future Condition of Socioeconomics If No Action Is Taken.....	3-20
Effects of Actions Common to All Action Alternatives on Socioeconomics.....	3-29
Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily.....	3-35
Effects of Alternative C: Parkwide Reservations – Timed Entry.....	3-36
Effects of Alternative D: Yosemite Valley Reservations – Timed Entry.....	3-37
Comparative Conclusion across Alternatives.....	3-38
Special Status Species .....	3-40
Current and Expected Future Condition of Special Status Species If No Action Is Taken .....	3-40
Effects Analysis Methodology .....	3-43
Effects of Actions Common to All Action Alternatives on Special Status Species.....	3-43
Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily.....	3-44
Effects of Alternative C: Parkwide Reservations – Timed Entry.....	3-45
Effects of Alternative D: Yosemite Valley Reservations – Timed Entry.....	3-46
Comparative Conclusion across Alternatives.....	3-47
Wilderness Character: Opportunities for Solitude Or Primitive and Unconfined Recreation.....	3-48
Current and Expected Future Condition of the Solitude or Primitive and Unconfined Recreation Quality If No Action Is Taken.....	3-49
Effects of Actions Common to All Action Alternatives.....	3-51
Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily.....	3-52
Effects of Alternative C: Parkwide Reservations – Timed Entry.....	3-53
Effects of Alternative D: Yosemite Valley Reservations – Timed Entry.....	3-53
Comparative Conclusion across Alternatives.....	3-54

Yosemite Valley Historic District.....	3-54
Current and Expected Future Condition of the Yosemite Valley Historic District If No Action Is Taken .....	3-55
Effects of Actions under Alternatives B and C.....	3-55
Effects of Alternative D Yosemite Valley Reservations – Timed Entry.....	3-55
Comparative Conclusion across Alternatives.....	3-56
Archeological Resources .....	3-56
Current and Expected Future Condition of Archeological Resources If No Action Is Taken..	3-56
Effects of Actions under Alternatives B and C.....	3-57
Effects of Alternative D Yosemite Valley Reservations – Timed Entry.....	3-57
Comparative Conclusion across Alternatives.....	3-58
Chapter 4: Consultation and Coordination .....	4-1
Traditionally Associated Tribes .....	4-1
Government Agencies and Representatives .....	4-1
Other Organizations.....	4-1
Appendix A: Pilot History for Yosemite National Park.....	A-1
Appendix B: Zoning and Desired Conditions .....	B-1
Appendix C: Indicators and Thresholds for Visitor Use Management Monitoring.....	C-1
Appendix D: Visitor Capacity.....	D-1
Appendix E: Alternatives and Actions Considered but Dismissed from Detailed Analysis.....	E-1
Appendix F: Impact Topics Considered but dismissed from detailed analysis.....	F-1
Appendix G: Mitigation Measures.....	G-1
Appendix H: Past, Present, and Reasonably Foreseeable Future Actions.....	H-1
Appendix I: Public Involvement and Consultation.....	I-1
Appendix J: References.....	J-1

## FIGURES

Figure 1. Vehicle Congestion on Southside Drive in Yosemite Valley.....	1-3
Figure 2. Parking Congestion at Yosemite Lodge Parking.....	1-4
Figure 3. Visitors Riding the Yosemite Valley Shuttle .....	1-5
Figure 4. The VUM Framework (IVUMC 2016).....	1-7
Figure 5. Map of Draft Management Zones .....	2-6
Figure 6. Management Triggers and Thresholds in Relation to Trend in Conditions .....	2-7

Figure 7. Roadway Changes for Alternative D..... 2-18

Figure 8. Number of Commercial Use Authorizations Operating in the Park (Those with at Least One Visitor Each Year) and Total Visitation by Year..... 3-28

Figure 9. Percent of Park Visitors Entering the Park as CUA Clients (Stats Report Viewer [nps.gov]) ..... 3-28

Figure 10. Visitation (Millions) and Visitor Spending (Millions) from 2012 to 2022 (Flyr and Koontz 2023; Irma 2024) ..... 3-31

Figure 11. Average Spending per Visitor (Annual Visitor Spending/Annual Visitation from 2012 to 2022; Data from Flyr and Koontz 2023 and Irma 2024)..... 3-31

Figure 12. Visitor Spending Associated with Yosemite National Park (in \$ Millions) Compared to Direct Travel Spending across California (in \$ Billions; Data from Dean Runyan Associates 2023 and Flyr and Koontz 2023) ..... 3-32

Figure 13. Visitor Spending Associated with Yosemite National Park Visits Compared to Other Direct Travel Spending across the Four-County Study Area ..... 3-33

Figure 14. The Average Number of Total Available Short-Term Rental Listings, Including the Number of Entire Place Listings and the Number of Hotel Comparable Listings and the Average Occupancy Rate for Each Type of Short-Term Rental Listing in Mariposa County by Year..... 3-34

## **TABLES**

Table 1. Visitor Use Management Framework and the Planning Process..... 1-8

Table 2. Summary of Indicators, Thresholds, and Related Triggers ..... 2-8

Table 3. Identified Visitor Capacities..... 2-15

Table 4. Summary of Additional Indicators, Thresholds, and Related Triggers for Alternative D.. 2-19

Table 5. Summary of Actions by Alternative..... 2-21

Table 6. Geographic Scope for Socioeconomic Analysis, Including Counties and Primary Entrance Station..... 3-23

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CHAPTER ONE:  
Purpose and  
Need

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# CHAPTER 1: PURPOSE AND NEED

## INTRODUCTION

Yosemite National Park (the park) welcomes millions of visitors annually to experience its unparalleled natural beauty and rich cultural heritage. Park visitors from across the United States and the world come to the park to experience awe-inspiring granite cliffs, towering waterfalls, pristine meadows, diverse cultural sites, wildlife, and ancient sequoia groves. At the heart of the park lies the iconic Yosemite Valley, a testament to the forces of glaciation that carved its sheer cliffs and iconic landmarks such as El Capitan and Half Dome.

Since park staff started consistently collecting visitation data in 1969, Yosemite has seen an increasing trend in visitation. The busy days at Yosemite have gotten busier, causing strain on natural and cultural resources and on the ability of park staff and infrastructure to accommodate higher numbers and concentrations of visitors. Historical use data correlate better weather with higher visitation, and future climate projections<sup>1</sup> predict more warm, sunny days each year. As a result, park managers expect continued growth in visitation, including on days and at times that are already seeing stress on park resources and infrastructure.

In response to the COVID-19 pandemic, park staff began pilot testing reservation systems (see appendix A for details). Building on lessons learned both during these reservation system periods and during the lack of a reservation system in 2023, the visitor access management plan considers a range of strategies to address the urgent, complex, and interconnected issues the park is facing. The National Park Service (NPS) is proposing to implement an adaptable visitor access management plan for Yosemite National Park to ensure meaningful and enjoyable visitor experiences in a way that preserves the park's natural, cultural, wilderness, and recreational resources for the long term.

## BACKGROUND AND PROJECT AREA

The focus of this plan is how and when visitors access the park, and its proposed actions primarily address changes to day-use access.

Park leadership has previously assessed a range of management strategies for their potential to alleviate issues created by growth in day-use visitation and changing use patterns. Park staff successfully piloted day-use reservations in 2020, 2021, 2022, and 2024 and received feedback from the public that these systems improved their experience and should be evaluated as a long-term solution for improving visitor experiences and spreading visitation across the season.<sup>2</sup> With no anticipated operational or public health constraints in the summer of 2023, park staff did not pilot a day-use reservation system, and visitation levels increased significantly, resulting in long lines at entrance stations and increased strain on the park's employees, resources, and infrastructure. Record-breaking winter snowpack led to concentrated visitor use in Yosemite Valley. Park staff piloted a new messaging campaign in 2023, which helped manage

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1. Projections suggest Yosemite could see up to a 23% increase in visitation during the peak season, from June through August, up to a 25% increase in the shoulder seasons (April, May, September, and October), and up to a 53% increase in low season visitation (Fisichelli et al. 2015).

visitors' expectations but did not change visitor volumes. Lessons learned during the 2020–2024 pilots informed the development of this visitor access management plan. For additional details on these pilots and other previous strategies to manage visitor and vehicle use in the park, see appendix A.

## **PURPOSE AND NEED FOR THE VISITOR ACCESS MANAGEMENT PLAN**

The purpose and need statement sets the parameters for the development of a proposed action and alternatives.

### **Purpose of the Plan**

The purpose of the visitor access management plan is to reduce overcrowding and traffic congestion, expand tools to better pace vehicle volume into the park, and provide equitable visitor access to inspirational experiences while ensuring operational sustainability and protection of Yosemite National Park's exemplary natural and cultural resources.

### **Need for the Plan**

The plan is needed to address issues associated with persistently high summer visitation, specifically, the following:

- high-intensity crowding and congestion at parking lots and park entrances and along roadways that limit visitors' ability to access and enjoy meaningful experiences
- traffic congestion that slows or prevents emergency vehicle access/egress and endangers pedestrians in roadways, affecting visitor and staff safety
- growing and concentrated visitor use that has an increasing impact on natural and cultural resources
- heavy strain on the park's services and facilities and staff's ability to access facilities and perform daily operations

## **PLANNING CONSIDERATIONS FOR VISITOR ACCESS**

A primary goal of this plan is to provide reliable access to Yosemite National Park to the greatest extent possible while minimizing barriers or disruptions to visitor travel and protecting the park's resources. The following plan objectives guide the development of the plan elements and action alternatives.

### **Provide Equitable Visitor Access and Use**

High visitation levels put a strain on the condition of park facilities and natural and cultural resources and threaten the quality of the visitor experience. This plan seeks to maintain as much flexibility for visitors as possible while ensuring that the National Park Service meets its obligation to fulfill its mission and the NPS Organic Act of 1916.

## Reduce Road Congestion

Approximately 94% of the 4.4 million annual visitors to Yosemite National Park arrive via private vehicles. Vehicular traffic can overburden the road system, resulting in long backups and wait times as visitors enter the park or search for parking at their desired destination (Figure 1). The most severe roadway congestion occurs in Yosemite Valley, Glacier Point, Tuolumne Meadows, Mariposa Grove, and at popular trailheads and all entrance stations. Traffic congestion and gridlock are common, with the most acute conditions occurring during the summer, and on weekends from spring through fall. Long waits along roadways impact park visitors, staff, residents, and Tribal members seeking to engage in traditional activities. Staff report needing to budget an additional hour each way to access their work sites due to congestion, and park residents also experience significant disruptions to daily commutes and work activities during times of congestion. Traffic congestion is particularly problematic at entrance stations. Park staff regularly saw lines of about two hours to enter the gates and reported lines up to four hours long on the busiest days. These wait times are often longer than expected with few opportunities to turn around or to access restrooms. This results in increased incidences of human waste at pullouts. The current shuttle system is only available in some areas of the park and, during high visitation, is often not adequate to meet demand. When shuttles are full, visitors elect to drive their own vehicles to avoid long waits for shuttles, which further contributes to the issue of roadway congestion.



FIGURE 1. VEHICLE CONGESTION ON SOUTHSIDE DRIVE IN YOSEMITE VALLEY

## Reduce Parking Lot Congestion

Parking congestion was identified as an issue as early as in the 1920s and continues to be one of the most pressing challenges facing the park. Previous planning efforts evaluated and confirmed the amount of parking that should be provided in the park while considering resource constraints. Demand for parking is still higher than can be accommodated in existing and proposed parking areas and has continued to increase without managed visitation.

Throughout most daytime hours during peak season, as well as spring and fall weekends, parking demand exceeds availability (Figure 2). In popular destinations such as Yosemite Valley, Tuolumne Grove, Tuolumne Meadows, Hetch Hetchy, Glacier Point, and Mariposa Grove, excess vehicles cause traffic to be backed up onto roadways and illegal parking that can damage sensitive resources. Illegal parking in the park is a compounding issue: Once cars are parked in inappropriate places, it may signal to other visitors that it's acceptable to follow suit, intensifying the problem and making enforcement more challenging.



**FIGURE 2. PARKING CONGESTION AT YOSEMITE LODGE PARKING**

### **Improve Quality of Visitor Experience**

Roadway and parking lot congestion can prevent visitors from accessing their desired destinations, recreational experiences, or needed visitor services such as restrooms. These issues affect all visitors: Backpackers who avoid popular park destinations may experience delays and miss the trip start time they planned for their permitted backpack. Concentrated arrival and use at peak times can cause crowding and congestion along roadways, in parking areas, and at popular destinations, all of which adversely affect the visitor experience. Visitor frustrations can arise at multiple points following arrival: waiting to enter the park, waiting to reach their intended destination, waiting to find a parking spot, being unable to find parking, and/or needing to change destinations due to congestion. These frustrations can lead to visitor conflict, such as arguments or fights over parking spaces or over space on packed shuttle buses, which further detracts from visitors' experiences in the park (Figure 3). Park staff have long encouraged cycling as a low-impact means of transportation, but cars parked in roadways force bicycles into the road and detract from the safety and enjoyment that cyclists could otherwise experience. Visitor safety can be compromised, as roadway congestion prevents emergency vehicles from reaching those in need, and illegal parking along the road can reduce visibility and increase the risk of conflict between vehicles and pedestrians. Visitor safety is also compromised when visitors walk along roadways to access preferred locations from illegal parking locations.



**FIGURE 3. VISITORS RIDING THE YOSEMITE VALLEY SHUTTLE**

### **Reduce Impacts on Park Facilities and Operations**

Effectively managing the timing and intensity of visits to the park ensures that infrastructure, staffing and systems to support visitor needs and expectations. Congestion throughout the park increases the responsibilities and stress on park staff and requires staff to mitigate conflicts among frustrated visitors.

The short-term, reactive strategies that have been implemented in response to high levels of visitation to Yosemite have placed a heavy reliance on front-line staff, such as entrance gate employees, law enforcement staff, and traffic rangers and detracted from other park priorities and needs. Visitation levels that exceed capacity impacts staff's ability to move around the park, respond to emergencies, access worksites, provide basic visitor services, and resolve conflicts. These delayed response times lead to more occurrences of illegal activity, including fires, graffiti and vandalism, traffic violations, and incidents with wildlife. Visitor frustration about the diminished visitor experience (as described above) has led to hostile interactions among visitors and between visitors and employees. Congestion at parking lots requires park managers to reallocate limited staffing to active traffic management, which is labor-intensive and detracts from other mission-critical needs. In addition, some crucial park facilities such as restrooms are overwhelmed by high use.

### **Reduce Impacts on Natural Resources**

The park's natural resources are negatively impacted by traffic congestion, social trailing, and other visitor behaviors during peak use times. Overflowing parking in undesignated areas contributes to vegetation trampling, soil denudation and compaction, and introduction of invasive plants. Social trailing from illegal roadside parking to key destinations often leads visitors closer to vulnerable ecosystems, including meadow and riparian areas, increasing opportunities to disturb wildlife and their habitat.

Even if visitors park in established locations and stay on designated trails, large numbers of people can have detrimental impacts on wildlife. High or concentrated human presence may cause some wildlife species to avoid places they would otherwise want to be, pushing them to less optimal habitat with lesser food resources. Additionally, increased visitation can further habituate and condition wildlife to human food and trash, which can cause bears and other wildlife to lose their natural avoidance of people, endangering both people and wildlife. Higher volumes of traffic on park roadways also increases the potential for vehicle-wildlife collisions.

### **Reduce Impacts on Cultural Resources**

Congestion, crowding, and visitor behaviors associated with increasing levels of visitation negatively impact cultural resources in the park. Parking, social trailing, and other visitor use activities in undesignated areas can impact sensitive archeological and ethnographic resources. The higher ratio of visitors to park staff makes resource protection laws more difficult to enforce. This may result in more vandalism of culturally significant resources. Crowding and visitor use activities can also affect conditions required for the continuation of traditional cultural practices and ceremonies.

### **Preserve Wilderness Character**

Over 94% of Yosemite is congressionally designated wilderness. Wilderness character is defined as a holistic resource—inclusive of the biophysical, experiential, and symbolic ideals. Visitor access, in particular, can have a profound effect on the opportunity for solitude quality of wilderness character from human activity within and outside of wilderness. The wilderness boundary begins only a short distance from the developed areas that experience most of the impacts on high use days.

## **RELATIONSHIP TO THE PARK PLANNING PORTFOLIO**

Yosemite National Park's foundation document (NPS 2016) describes the park's purpose, significance, fundamental resources, and values. The visitor access management plan would supplement the park's general management plan (1980), the *Merced Wild and Scenic River Final Comprehensive Plan and Environmental Impact Statement* (2014), the *Tuolumne Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement* (2014), and the *Restoration of the Mariposa Grove of Giant Sequoias Final Impact Statement* (2013). As part of the park's planning portfolio,<sup>2</sup> this plan will help park leadership meet general management plan statutory requirements identified in the National Parks and Recreation Act of 1978 (54 United States Code [USC] 100502), including identifying carrying capacities and implementation commitments for areas of the park and the types and intensities of development. This plan will also support implementation of the user capacities (section 3[d][1] of the Wild and Scenic Rivers Act) that were identified in the *Merced River Plan* and *Tuolumne River Plan*.

Notably, the recent comprehensive plans mentioned above include many actions and many strategies to manage visitor use within the park, including changing and reorganizing parking

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2. More information about Yosemite National Park's planning portfolio documents is included in appendix H.



and park-and-ride options for Yosemite Valley and enhancing shuttle and transit services. The majority of these strategies have been implemented and continue to serve both the park and the visitors but do not include any actions to directly manage the volume and timing of vehicle volumes in these areas of the park. Therefore, this plan adds to the larger planning portfolio at the park and evaluates additional tools to manage access to the park as a complement to these other plans.

## VISITOR USE MANAGEMENT

The National Park Service strives to facilitate access, opportunities, and benefits for visitors in a particular area while achieving and maintaining desired conditions for resources and visitor experience and, ultimately, preventing impairment of park resources and values. This plan applies the Visitor Use Management (VUM) Framework (IVUMC 2016) to align decisions about visitor access to the park while protecting and maintaining desired conditions for resources and experiences.

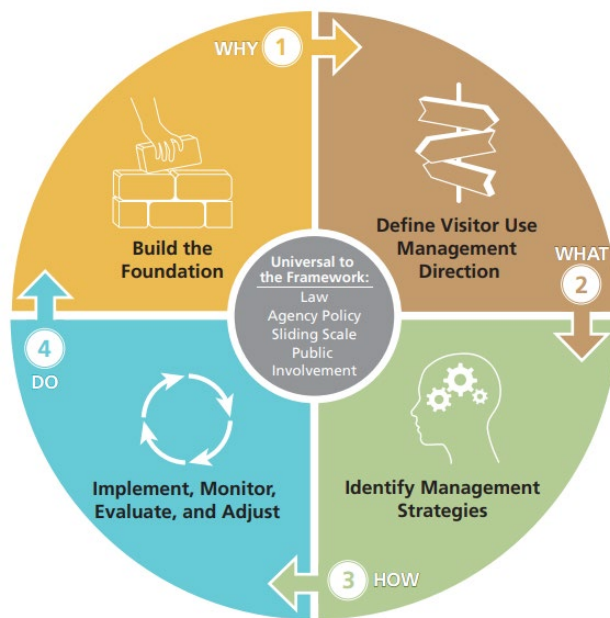


FIGURE 4. THE VUM FRAMEWORK (IVUMC 2016)

See Table 1 for the elements of this process and where you can find each element of the VUM Framework in this plan.

**Table 1. Visitor Use Management Framework and the Planning Process**

<b>Visitor Use Management Framework Elements</b>	<b>Framework Steps and Corresponding Environmental Assessment Chapter Location</b>
<p><b>Element 1: Build the Foundation</b></p> <p>Building the foundation is the first of the four elements of the visitor use management framework. The purpose of this element is to help managers understand what needs to be done, how to organize the plan, and how to define the resources needed to complete the plan.</p>	<ul style="list-style-type: none"> <li>• Clarify the plan purpose and need (chapter 1).</li> <li>• Review the area’s purpose and applicable legislation, agency policies, and other management direction (chapter 1).</li> <li>• Assess and summarize existing information and current conditions (e.g., current conditions of natural, cultural, and recreation resources and visitor experience opportunities in the area) (chapter 3).</li> <li>• Develop a plan strategy (chapter 1).</li> </ul>
<p><b>Element 2: Define Visitor Use Management Direction</b></p> <p>The purpose of this element is to answer critical questions about what the planning effort is trying to achieve and the acceptable levels of impacts from visitor use.</p>	<ul style="list-style-type: none"> <li>• Define desired conditions for the planning area (chapter 2; appendix B).</li> <li>• Define appropriate visitor activities, facilities, and services (chapter 2; appendix B).</li> <li>• Select indicators and establish thresholds (chapter 2; appendix C).</li> </ul>
<p><b>Element 3: Identify Management Strategies</b></p> <p>This element is intended to help managers identify management strategies and actions to achieve and maintain the desired conditions of the plan area. This element also identifies visitor capacity. The goal of element 3 is to define how visitor use would be managed to achieve desired conditions.</p>	<ul style="list-style-type: none"> <li>• Compare and document the differences between existing and desired conditions, and for visitor use-related impacts, clarify the specific links with visitor use characteristics (chapter 3).</li> <li>• Identify visitor use management strategies and actions to achieve desired conditions (chapter 2).</li> <li>• Where necessary, identify visitor capacities and strategies to manage use levels within capacities (chapter 2; appendix D).</li> <li>• Develop a monitoring strategy (chapter 2; appendix C).</li> </ul>
<p><b>Element 4: Implement, Monitor, Evaluate, and Adjust</b></p> <p>This element focuses on implementing management actions, monitoring, evaluating monitoring results, and adjusting management strategies and actions based on monitoring results. This phase of the planning process focuses on making progress toward meeting desired conditions, as well as evaluating potential unintended consequences of the actions for visitors or resources.</p>	<ul style="list-style-type: none"> <li>• Implement management actions.</li> <li>• Conduct and document ongoing monitoring and evaluate the effectiveness of management actions in achieving desired conditions.</li> <li>• Adjust management actions, if needed, to achieve desired conditions and document rationale.</li> </ul>

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CHAPTER TWO:  
Alternatives

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## **CHAPTER 2: ALTERNATIVES**

### **INTRODUCTION**

This chapter provides a detailed overview of four options for managing day-use visitation at Yosemite National Park. These options include the no-action alternative (alternative A) and three action alternatives (alternatives B, C, and D). The no-action alternative entails reverting to the park management practices that were in place before 2020. While the no-action alternative does not meet the purpose and need of the plan (as it does not resolve the issues described in chapter 1), it serves as a baseline for comparing the three action alternatives. These action alternatives propose different approaches to park management that would achieve the purpose and need for the plan. Following the implementation of this plan's selected action, any site-specific planning and environmental compliance necessary for construction-related aspects of the alternatives would be completed as necessary (e.g., further consultation on site-specific design, tiered compliance if applicable).

In the following sections, each alternative is accompanied by a concept statement outlining core principles, followed by specific strategies for implementation at Yosemite National Park. These strategies are organized by management topic. A summary table of the alternatives is provided at the conclusion of this chapter for reference.

### **STRATEGIES COMMON TO ALL ALTERNATIVES, INCLUDING NO ACTION**

#### **Visitor Communications**

Park staff would continue to provide seasonally focused educational materials and visitor information through NPS digital and print media. This information would cover visitor use management practices to assist with trip planning. Communications would prioritize creating a welcoming environment for all visitors, considering the many geographic, cultural, linguistic, and technological barriers that can hinder visitors from planning trips under reservation or non-reservation requirements.

Within park boundaries robust orientation, interpretive, and informational signage would continue to be used and expanded, as necessary. Signage would be prominently placed at key locations, such as entrance stations and trailheads, to ensure that visitors are oriented to the park and equipped with the knowledge to engage in responsible recreation. Staff would continue to use signage to delineate roads, trails, and parking areas, while also enforcing existing parking restrictions.

Outside of park boundaries, a range of communication tools would be employed to inform the public of managed access requirements or closures in effect. These tools may include text message alerts that visitors can sign up for, variable message signs, and permanent or temporary signs and banners. Further, the National Park Service would actively collaborate with gateway communities and partners to disseminate information about access requirements through diverse methods of communication.

## **Technology Improvements**

Park managers would strive to improve the availability and speed of internet access for both staff and visitors at entrance stations and key visitor use areas. Stronger connectivity and other technology improvements would streamline efficiency at gates, potentially allowing for faster vehicle processing times, and other benefits, such as providing on-site trip planning, parking, and congestion information to visitors.

Efforts to monitor and disseminate information about traffic congestion and parking availability would be implemented as necessary and feasible. Platforms for sharing this information may include cell phone alerts, webcams, variable message signs, and navigation apps.

## **Transit Services**

Yosemite National Park would continue to provide visitors with shuttle and transit systems as funding allows and ridership supports. Shuttle buses, operated by a concessioner or through a service contract, would continue to serve Yosemite Valley and the Mariposa Grove. As funding allows, visitors would continue to have the opportunity to use transit buses, currently operated by the Yosemite Area Regional Transportation System (YARTS), from gateway communities into the park. Upon arrival, visitors on transit buses could then transfer to park shuttles to access various destinations within the park. The National Park Service would continue to pursue partnerships with transit providers like YARTS to facilitate access to the park from surrounding areas. These services would aim to enhance connectivity between regional destinations and the park, which would benefit individuals without access to private transportation or those preferring not to drive their personal vehicle.

The National Park Service authorizes commercial use authorizations (CUAs) for “point-to-point service,” allowing visitors to prearrange personal transportation from gateway communities into the park. The locations and quantity of visitor dropoffs within the park would be managed through established permit processes, based on identified visitor capacities.

## **Traditionally Associated Tribal Nation Access**

Various traditionally associated American Indian Tribes and groups have ancestral connections to Yosemite National Park, including the American Indian Council of Mariposa County, Inc. (also known as the Southern Sierra Miwuk Nation), Bishop Paiute Tribe, Bridgeport Indian Colony, Mono Lake Kootzaduka'a, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of the Chukchansi Indians, and Tuolumne Band of Me-Wuk Indians. Under all alternatives, traditionally associated Tribes would continue to have unrestricted access to their homelands. This access aligns with NPS *Management Policies 2006*, section 8.5, which states “. . . the Service will be as unrestrictive as possible in permitting Native American tribes access to park areas to perform traditional religious, ceremonial, or other customary activities at places that have been used historically for such purposes.” The National Park Service would actively work with Tribal leadership to improve and streamline access for Tribal members under any system.

## **Nonrecreational Pass-Through Travel**

Residents residing in specific local zip codes, as indicated on their driver's license, would be allowed to pass through Yosemite National Park roads for nonrecreational, transportation purposes. Possession of a driver's license with an eligible zip code would serve as the only acceptable proof of residency that would allow pass-through travel without a recreational component, exempting individuals from entrance fees or reservations. Additional details on nonrecreational pass-through travel for local residents, including eligible zip codes for nonrecreational pass-through travel, is available on the NPS website at [www.nps.gov/yose/planyourvisit/zipcode.htm](http://www.nps.gov/yose/planyourvisit/zipcode.htm).

## **Private Landowner Access**

Privately owned lands in the communities of Foresta, Yosemite West, and Wawona are accessible solely by traveling through the park. Owners of these properties, which include primary and secondary residences and short- and long-term rentals, would continue to maintain access to their properties. Access to these properties would also be maintained for any short- and long-term renters of these properties and their guests.

## **Commercial Visitor Services**

Commercial visitor services would continue to be reviewed and approved through concessions contracts and/or commercial use authorizations.

## **Roadway and Parking Changes**

Temporary traffic controls and turnaround lanes would be evaluated for permanent construction, reducing the need for temporary devices such as traffic cones. Additional features along NPS roadways that approach entrance stations, such as curbing and shoulder parking, would also be assessed to better accommodate queues at gates. Temporary road restrictions for Glacier Point Road and Hetch Hetchy Road would be assessed and implemented as needed due to the frequent congestion that occurs at viewing sites and trailhead parking lots. Additional park-and-ride opportunities to access Yosemite Valley would also be evaluated and implemented, if feasible, in El Portal.<sup>3</sup> Further, Yosemite staff would monitor oversize vehicle use in parking areas to understand if and where additional actions may be necessary to accommodate larger vehicles such as campers and stock trailers.

## **Temporary Area Closures for High-Demand Areas**

Park staff would initiate temporary area closures, lasting less than one day, to maintain desired conditions for resources and experiences (see "Appendix B: Zoning and Desired Conditions"). These closures would be implemented in addition to any other existing closures in place, such as closures for revegetation or raptor nesting areas. These closures would remain in place until

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3. The 300-space parking lot in the El Portal area is an action that was evaluated in the *Merced River Plan* (2014) and is a part of the selected action for that plan. Therefore, this action is considered as a part of the no-action alternative and is not reevaluated in this plan.

staff could implement other management strategies to allow visitation while achieving desired conditions.

Temporary closures to parking lots or roadway corridors may follow a metering approach, allowing access until a predetermined threshold is reached, and reopening once traffic and parking congestion are alleviated. A likely indicator for such closures would be when metering signals that most, if not all, of the primary visitor parking lots are full. While closures may still occur while reservation systems are in effect, they would likely be infrequent and short in duration (see alternatives B and C). However, in the absence of reservations, closures would become a primary mechanism to manage visitor use, resulting in more frequent and longer-lasting closures (see alternatives A and D).

## **ALTERNATIVE A: NO ACTION (CONTINUE CURRENT MANAGEMENT)**

### **Concept Statement**

Under this alternative, park staff would employ a reactive approach similar to the park management strategy that predated the pilot reservation systems that were used in the summers of 2020–2022 and 2024. Visitors would continue to access the park on a first-come, first-served basis 24 hours per day, primarily by private vehicles. The National Park Service would close areas of the park when visitor demand for parking lots exceeded supply. Park staff would use traffic diversions, or “shunting,” as needed, a reactive practice of redirecting traffic from an area of the park when it is filled beyond capacity. Visitors would likely still experience long delays at entrance stations and heavy congestion within the park. Park staff would continue managing to the capacities identified in existing park planning documents, such as the *Merced River Plan* (2014), the *Tuolumne River Plan* (2014), and the *Mariposa Grove Plan* (2013).

### **Zoning and Desired Conditions**

The current zoning and desired conditions outlined in the general management plan would continue to provide guidance for achieving desired conditions for overnight and day-use levels in different areas of the park.<sup>4</sup> For full descriptions of current zoning and desired conditions, refer to the *Yosemite National Park General Management Plan* (1980).

### **Visitor Capacities**

Visitor capacity refers to the maximum levels and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which an area was created. By identifying and managing visitor capacities, the National Park Service can help ensure that resources are protected and visitors have the opportunity for a range of high-quality experiences, not only today but for future generations, as directed by the NPS Organic Act (1916) (54 USC 100101).

Visitor capacities would continue to be managed to meet the capacities established in the *Merced River Plan* (2014), the *Tuolumne River Plan* (2014), and the *Mariposa Grove Plan* (2013).

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4. The park zoning was also amended by the *Merced River* and *Tuolumne River Plans*. See appendix A of each plan for these changes. The changes from these river plans have also been incorporated here.



## COMMON TO ALL ACTION ALTERNATIVES

### Zoning and Desired Conditions

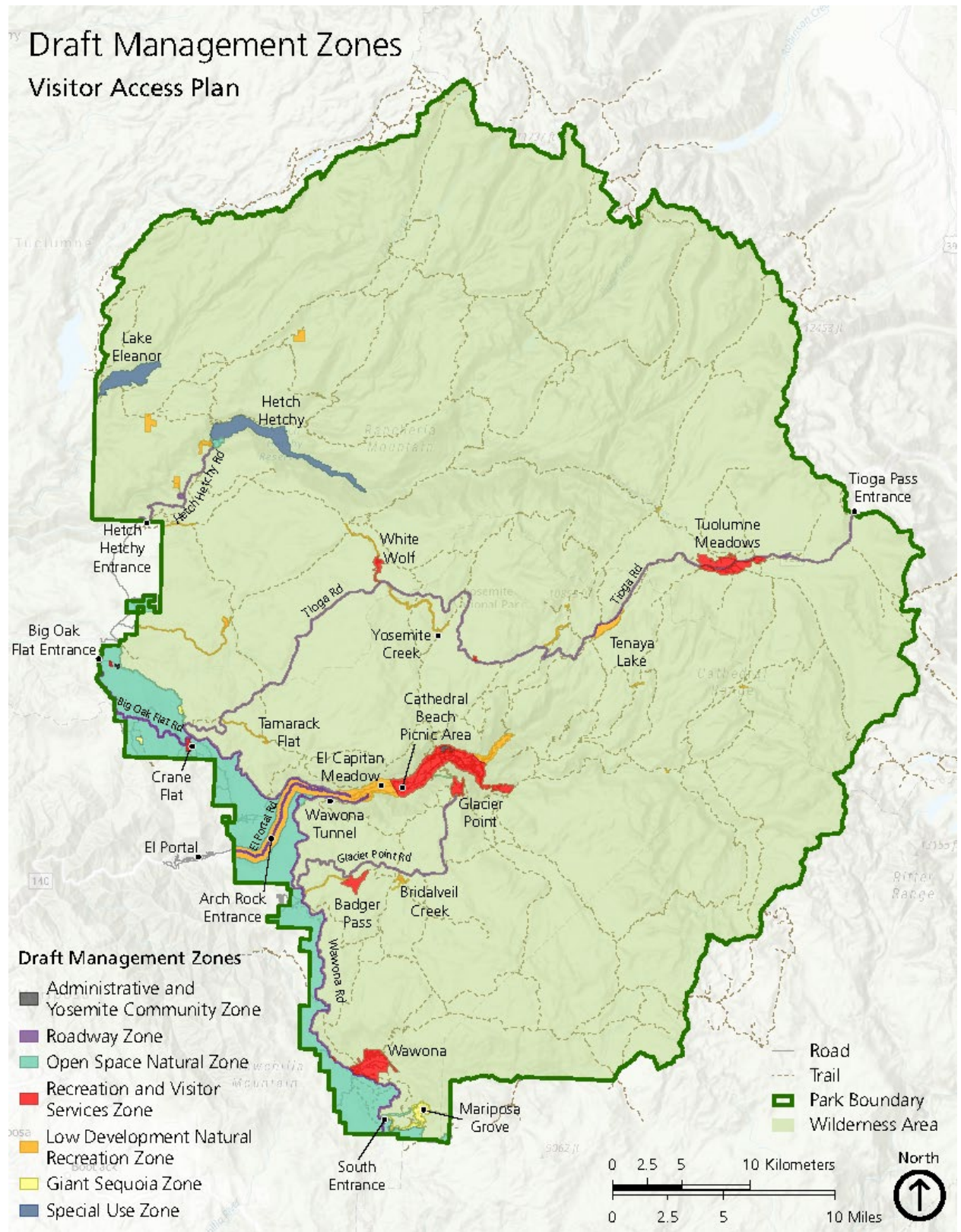
Park zoning, as defined in the general management plan (1980) and later amended by the *Merced River Plan* (2014) and the *Tuolumne River Plan* (2014), would be updated to enhance clarity, reduce redundancy, and align with the desired conditions for each area of the park.<sup>5</sup> These changes, summarized below, are considered amendments to the park's general management plan. While this plan does not include actions within all zones of the park, the comprehensive update of the park's management zones would be included in this planning process. All park zones and their spatial extents are defined in appendix B and shown in Figure 5 below.

Zoning changes that would be implemented as part of this planning process include the following:

- The historical and archeological subzones were combined into other zones and the necessary guidance for the associated resources is accounted for in desired conditions.
- The development subzones were combined into various zones, including the administrative zone and the development and visitor services zone.
- The wilderness boundary was updated per the California Wilderness Act of 1984, which established the Yosemite Wilderness. Rather than being a subzone of the previous natural zone in the general management plan, it is now the wilderness zone.
- The natural zone and subzones have been combined into other zones, including open space natural, wilderness, recreation and visitor services, and low development natural recreation zones.
- The outstanding natural feature zone is carried forward as amended by the 2014 *Merced River Plan and Environmental Impact Statement*, as well as the 2014 *Tuolumne River Plan and Environmental Impact Statement*. Areas within the **outstanding natural feature zone** not amended in the 2014 *Merced River Plan* and *Tuolumne River Plan* were rezoned due to the formalization of the wilderness boundary and the addition of the **giant sequoia zone**.

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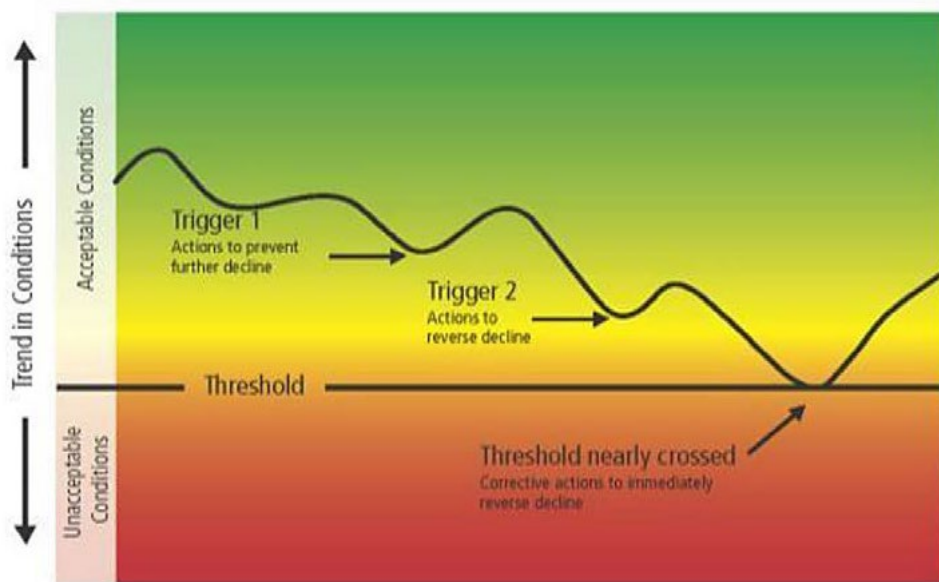
5. Desired conditions are statements of aspiration that describe resource conditions, visitor experiences and opportunities, and facilities and services that an agency strives to maintain in a particular area (IVUMC 2016).



**FIGURE 5. MAP OF DRAFT MANAGEMENT ZONES**

## Indicators and Thresholds

Under any action alternative, indicators and thresholds to support responsive management of proposed reservation systems would be identified and implemented.<sup>6</sup> This iterative practice of monitoring, implementing management strategies, and then continuing to monitor the effectiveness of those actions would allow park managers to maximize visitor benefits while achieving and maintaining desired conditions for resources and visitor experiences in a dynamic setting. These indicators, along with other recurring and ongoing monitoring at the park, would inform whether and when reservation system adaptations and adjustments to other management strategies would be needed. In some cases, triggers (i.e., conditions of concern that identify a declining trend in conditions) are identified, along with management responses for what actions would be considered when that condition occurs (see Figure 6). For additional details on how reservation systems may be adjusted in the future to align with changing visitor use patterns, see the “Responsive Management Components” section below. For a full explanation of indicators and thresholds, see appendix C. The indicators for the visitor access management plan are provided below in Table 2. Related desired conditions are also included in the table; for additional desired conditions that these indicators support, see appendix B.



**FIGURE 6. MANAGEMENT TRIGGERS AND THRESHOLDS IN RELATION TO TREND IN CONDITIONS**

To avoid the threshold, the following triggers and management responses will be implemented when conditions warrant (Table 2).

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6. Indicators are specific resource or experiential attributes that can be measured to track changes in conditions so that progress toward achieving and maintaining desired conditions can be assessed. Thresholds are minimally acceptable conditions associated with each indicator (IVUMC 2016).

**Table 2. Summary of Indicators, Thresholds, and Related Triggers**

Indicator and Related Desired Conditions	Threshold
<p><b>Indicator:</b> Length of wait for arriving visitors to pass through an entrance station</p> <p><b>Related Desired Conditions:</b> Entrance stations are designed to accommodate easy entry for both visitors and staff, contribute to a strong park identity, and allow for reasonable emergency and other administrative access. While visitors may have to wait before they can enter the park, the experience is safe, sustainable, and does not diminish the overall quality of the visitor experience. Entrance station operations function efficiently.</p>	<p>Threshold: During regular operations, wait times do not exceed 1 hour for more than 3 hours per day</p> <p><b>Triggers and Associated Responses<sup>7</sup></b></p> <ul style="list-style-type: none"> <li>• Trigger 1 for <u>days/hours outside of the reservation season</u>: Wait times exceed 1 hour for more than 2 hours per day (at any time), on 2 days per week for 4 consecutive weeks at 2 or more entrances. <ul style="list-style-type: none"> <li>○ Management response: Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas. Expand days of the year or times of day when reservations are required for entry. Focus on the days wait times exceed an hour for more than 2 hours (e.g., weekends). Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas.</li> <li>○ If at one entrance station, take management action specific to that area to improve gate processing.</li> </ul> </li> <li>• Trigger 1 for <u>days during the reservation season</u>: Wait times exceed 1 hour for more than 2 hours per day on 2 days per week for 3 consecutive weeks. <ul style="list-style-type: none"> <li>○ Management response: Adjust reservation system numbers to reduce wait times, focusing on days when this is happening.</li> </ul> </li> <li>• Trigger 2 for <u>days during the reservation season</u>: Wait times exceed 1 hour for more than 2 hours per each day more than 2 days per week for more than 6 weeks for 2 consecutive years. <ul style="list-style-type: none"> <li>○ Modify entrance station operations as feasible and technology allows.</li> <li>○ Management response, alternative C: Adjust reservation numbers.</li> <li>○ Management response, alternatives B and D: Start the process to transition to alternative C.</li> <li>○ Management response, alternative D: Start the process to transition to alternative B.</li> </ul> </li> </ul>

7. Triggers for this indicator assume that all major roadways and associated entrance stations in the park are open and fully functional. Wait times at entrance stations that are impacted by unforeseen events, such as unplanned road closures, wildland fires, or later than normal road openings due to heavy winter snowpack, would not be counted toward this threshold or associated triggers.

Indicator and Related Desired Conditions	Threshold
<p><b>Indicator:</b> Number of vehicles entering before reservations start</p> <p><b>Related Desired Conditions:</b> Visitors have a reasonable opportunity to visit their primary destination in the park. Actively managing parking, traffic flow, and speed in this zone will focus on the protection of adjacent natural and cultural resources, creating opportunities for visitors to connect with fundamental resources and values along the corridor and visitor safety.</p>	<p>Threshold: Total number of inbound cars cannot exceed 30% of available Yosemite Valley parking within the first 2 hours of the reservation system start time on more than 25% of days when reservations are in place</p> <p><b>Triggers and Associated Responses</b></p> <ul style="list-style-type: none"> <li>• Trigger 1: Total number of inbound cars exceeds 30% of available Yosemite Valley parking within the first 2 hours of the reservation time on more than an average of 2 days per week (average) for the weeks when reservations are in place. <ul style="list-style-type: none"> <li>○ Management Response: Adapt reservation systems to start at 12:00 a.m. (midnight) to manage all morning arrivals for areas where reservations apply on days that have reached the trigger.</li> </ul> </li> <li>• Trigger 2: Documented excessive vehicle mortality of wildlife species (including bears) beyond historical norms <ul style="list-style-type: none"> <li>○ Management response: Evaluate the location and cause of the strike and implement site specific action for the roadway corridor of concern, OR adapt the reservation system to start at 12:00 a.m. (midnight if a discrete area cannot be identified).</li> </ul> </li> <li>• Trigger 3: Wildlife location data indicate increased risk of road mortality to sensitive wildlife species <ul style="list-style-type: none"> <li>○ Management response: Evaluate the data source, type, location, and timing to (1) identify and implement site-specific action for the roadway corridor of concern, OR (2) if no action is sufficient to acceptably lower the risk, modify the reservation system start time (to 12:00 a.m. or later) at one or more entrance station(s) based on location and temporal wildlife movement information.</li> </ul> </li> </ul>

Indicator and Related Desired Conditions	Threshold
<p><b>Indicator:</b> Vehicles at one time at key parking areas</p> <p><b>Related Desired Conditions:</b> Visitors have a reasonable opportunity to visit their primary destination in the park. Visitors are provided with safe, convenient, conflict-free, and sustainable access to park resources and experiences.</p>	<p>Threshold: Vehicles at one time does not exceed the design capacity of parking lots at the visitor destination for more than 25% of the time (about 2.5 hours per day or 17.5 hours per week) during the peak hours of the day (8:00 a.m.–6:00 p.m.).</p> <p><b>Triggers and Associated Responses</b></p> <ul style="list-style-type: none"> <li>• Trigger 1 (for non-reservation days or times): Vehicles at one time exceeds the design capacity of monitored parking lots for more than 20% of the time during the days or times when reservations are not in place for 2 consecutive years <ul style="list-style-type: none"> <li>○ Management response: Expand days of year or times of day when reservations are required.</li> </ul> </li> <li>• Trigger 2 (for alternative B and C): For lots in Yosemite Valley, vehicles at one time exceeds the design capacity of parking lots on 2 days per week for 6 consecutive weeks or 4 days per week for 3 consecutive weeks. <ul style="list-style-type: none"> <li>○ Management response: lower the number of total reservations, or shift the time of required reservations (earlier or later). Move to timed entry or lower the numbers of total reservations.</li> </ul> </li> <li>• Trigger 3 (for alternative D): Lots outside of Yosemite Valley: Vehicles at one time exceeds the design capacity of parking lots more than 20% of the time per day during peak hours of the day (8:00 a.m.–6:00 p.m.) on 2 days per week for 6 consecutive weeks for 2 years. <ul style="list-style-type: none"> <li>○ Action: Move to a parkwide system—alternative B or C.</li> </ul> </li> </ul>

## Responsive Management Components

In all proposed reservation systems (see alternatives B, C, and D), park managers would responsively manage system parameters based on monitoring indicators (see above) to effectively balance providing fair public access with the need to protect the qualities of visitor experience and park resources. Park managers may adjust reservation system parameters or the quantity of available reservations (inventory) when they determine that the following conditions are met:

- a change is occurring (based on the monitoring of indicators) that is of a magnitude and direction (approaching thresholds) that triggers management action; and
- the change is likely a result of the amount of use occurring; and/or
- decreased visitor use levels would prevent negative impacts on resources and experiences.

Inventory would also vary seasonally and may change in response to other conditions that impact available parking (e.g., road closures due to unpredictable hazards such as fire and rockfall) or resource management concerns. The National Park Service may increase or

decrease inventory, per day or for specific time blocks, according to the conditions described in this section.

The following components of a reservation or timed-entry system may shift annually, depending on factors including, but not limited to, visitor safety concerns, visitor use patterns, staff availability, shuttle operations, natural and cultural resource conditions, or the indicators described above (Table 2). At the end of each season, park staff would evaluate conditions related to the thresholds for indicators described in appendix C. This evaluation would inform management if adjustments to the system would be needed for the next season. The system could be expanded or reduced as needed to manage for desired conditions. Any changes to the reservation system would be within the range of responsive management strategies listed below and would be communicated with the public before implementation.

- **Seasonality.** All reservation systems would initially be implemented from approximately April through October. Reservations would begin in the shoulder months (April, May, September, October) on weekends only and then become required for the full week in the peak season. Additionally, changing visitor use patterns (e.g., an increased interest in winter recreation) or climate change effects (e.g., later snowfalls in fall/early winter) may lead to increased visitation during historically lower-use seasons or decreased visitation during historically higher-use seasons. In response, park staff may expand or contract the number of days or weeks for reservation system implementation if the monitoring of relevant indicators show this to be necessary to appropriately balance fair public access with quality visitor experiences and/or resource protection needs. The following modifications to reservation system seasonality may result:
  - reservations may start earlier or later in the spring,
  - reservations may end earlier or later in the fall, and/or
  - reservations may be implemented (and/or later removed) for winter weekends and/or selected holidays.
- **Time of Day.** Initial times when reservations would be required are described in each alternative. A change in use patterns (e.g., more, or fewer visitors arriving earlier or using the afternoon/evening periods) may signal the need for a change in the time of day when reservations are required to strike the appropriate balance between fair visitor access and protection of resource and visitor experience quality. Park staff may change the number of hours per day when a reservation system would be implemented, which may result in reservation systems starting earlier or later in the day (e.g., changing from a 5:00 a.m. start time to 12:00 a.m. or 7:00 a.m.). The change may also result in reservation systems ending earlier or going later into the afternoon/evening (e.g., changing from a 4:00 p.m. end time to 2:00 p.m. or 6:00 p.m.). For timed-entry reservations specifically (as described in alternatives C and D), the window of time for which a reservation would grant access to the park or corridor may be adapted (e.g., from two hours to four hours). These would be adjusted to maximize reservation opportunities and visitor convenience while maintaining desired conditions.

- **Inventory.** The number of available reservations would be subject to change based on continued monitoring to manage within identified capacities and achieve desired conditions, along with other changes such as road access and area closures (see “Reservation Systems” above).
- **Distribution.** Reservations would be made available to the public through a reservation service<sup>8</sup> using up to three booking windows, including a long-term window (e.g., 6-12 months), a short-term window (e.g., 7 days in advance), and a short sale reservation window (e.g., 1 day in advance<sup>9</sup>), as technology and infrastructure allow. Any remaining inventory of reservations would be available for day-of purchase through Recreation.gov. The timing of each booking window would be evaluated annually and communicated to the public at least 2 months before the first block of reservations are available. If the distribution of reservations leads to issues with reservations selling out too fast or creating significant disadvantages to some user groups, park staff may transition to a lottery or other system, in response to the specific issues encountered, for some or all booking windows. Lottery entries may or may not require a fee.
- **Exemptions.** Park staff may change exemption requirements (described below in the “Exemption” sections) if use levels need to be adjusted to manage within identified capacities and achieve desired conditions.
- **Bicycle Use and other Non-Vehicular Access.** Bicycle and non-vehicular access (including e-bikes) would not initially be subject to reservations but may become so in the future should use levels increase and necessitate proactive management to ensure that use levels are consistent with desired conditions. Roadway safety or numbers of bicycles parked at trailheads could be monitored as indicators in the future. A change in these indicators could warrant a need to consider bicycles in the reservation system. National Park Service staff would also monitor occurrences of visitors parking outside of the park, along roadways, and walking into the park and address any increase in this use through existing management tools (e.g., adding signs).

## Visitor Communications

Any reservation system would require clear, consistent, and effective communication across all stages of the visitor experience—including trip planning, arrival, the duration of a visit, and departure. Visitor communications would provide helpful information to set visitor expectations, offer guidance on navigating reservation systems, issue advance notice for any operational changes that could affect the visitor experience, and deliver educational materials to

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8. Recreation.gov is the current NPS platform for reservation sales. As of 2024, Recreation.gov includes a phone number that can be used to book a reservation. Yosemite National Park supports a call-in option, as it may support equity of access by offering an avenue for securing a reservation that does not require internet usage. However, it is possible that this phone number could become unavailable in the future, pending contract changes or changes in the contract holder.

9. Technologies such as geofencing may be explored in the future as supplemental tools for distributing next-day reservations. Geofencing would require mobile devices to be within a specific distance from the park to purchase a reservation. Park staff would also explore partnering with local businesses to provide a way for those without mobile devices but who are present in the local area to access these reservations.



empower responsible behavior in the park and help visitors get the most out of their visit. An overall increase in public communications is a common action across all alternatives, involving the use of various platforms, methods, and languages to reach a diverse audience effectively and provide advance notice of park management actions. Whenever feasible, efforts would be made to collaborate with gateway partners to effectively communicate with park visitors and the local communities.

## **Technology Improvements**

Entrance station technologies, such as license plate readers and improved reservation scanners, would be evaluated for feasibility to reduce gate processing and associated queues.

## **Entrance Stations**

The Arch Rock and Hetch Hetchy entrance stations would be modified to enable easier turnarounds. An additional booth would be added to the parking area before the Big Oak Flat Entrance to add a reservation check point before the current entrance station.<sup>10</sup> Vehicle turnarounds at entrance stations may decrease over time as visitors acclimate to visitor reservation requirements. Consequently, any permanent construction would be approached cautiously to avoid unnecessary impacts on natural and cultural resources. Entrance stations would be modified to ensure that staff can safely stand away from traffic during screening procedures.

## **Reservation Systems**

A reservation system is a strategy intended to directly manage the amount, type, distribution, and/or timing of visitor entry at main entrance points, primary travel corridors, or at primary park features. The purpose of a reservation system at Yosemite National Park would be to ensure that desired conditions for resource protection and the visitor experience are achieved and maintained (see “Adopt Zoning and Desired Conditions” and appendix B). Reservation systems would be applied when they are needed to meet the purpose and need of this plan. Seasonality and timing of reservation requirements are subject to management modification as one of this plan’s responsive management components, described below.

## **Planned Events**

Separate reservations would be required for planned events (such as Horsetail Fall<sup>11</sup> viewing) where high volume is anticipated. Event reservation systems would mirror the alternative in

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10. The Big Oak Flat and South entrances can accommodate turnarounds in their current configuration, as both were recently upgraded. The need to accommodate turnarounds at the Tioga Pass entrance station would be evaluated at a future time, as there are other needs to be addressed at this entrance station that are outside of the scope of this plan.

11. Horsetail Fall displays a unique phenomenon each February and October where the setting sun catches the water at an angle that causes it to glow a reddish-orange reminiscent of the historic Yosemite Firefall. For over a decade, visitor use has been managed during the February Horsetail Fall period to reduce the operational and resource impacts caused by high visitor concentrations in sensitive areas. Horsetail Fall has not historically had enough water to display the phenomenon during October, but that could change.

place for the duration of the planned event; however, depending on the nature of the event, reservations could be required for up to 24 hours a day rather than during peak hours only.

### **Exemptions and Other Reservation Holders**

As stated in Director's Order 53: *Special Park Uses*, permittees who enter a park for recreational purposes are subject to the same entrance and expanded amenity (use) fees as the general public; however, persons engaging in special park uses that are not recreational in nature are exempt from entrance and expanded amenity fees. Vehicles entering the park for nonrecreational purposes (See NPS Reference Manual 22, section 10.1.1) or with special use permits (e.g., weddings, First Amendment activities) are not required to secure an entry reservation, regardless of whether the park is being managed with a reservation system at that time.<sup>12</sup>

Reservation systems described in this plan are applicable only to day users. Visitors with an overnight reservation at an in-park campground, in-park lodging facility, vacation rental inside the park or Yosemite West would not be required to also hold a day-use reservation to enter the park. Those with a wilderness permit would be able to enter the park any time the day before their reservation. Those with a Half Dome permit would be able to enter the park any time during the day of their reservation. Across all alternatives, visitors with lodging, camping, transportation reservations in a vehicle reservation area could use their service reservation to gain access.

To preserve parking availability for day-use reservation holders, overnight reservations would be allocated a specific number of vehicles per reservation, with the number of allocated vehicles varying based on the size and type of accommodation. Additional vehicles beyond this allocation would be required to secure a day-use reservation, even if those vehicles stay overnight. Administrative use for individual vehicles may also be authorized, based on NPS discretion.

### **Commercial Services**

Commercial activity service reservations in a vehicle reservation area can use that reservation to gain access to the relevant area of the park.

Use levels associated with concession contracts are managed through the National Park Service's competitive bid process and contract terms and are subject to environmental review and permit approval. As such, visitors with a reservation for certain services under concessions contracts would not be required to obtain additional reservations.

If the total number of CUA or other agreement clients increases to a level that is inconsistent with identified visitor capacities, during seasons when reservations are required, the activity

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12. While these permit holders would not require a reservation, the specific types of visitor use would still be monitored and regulated through the permitting system itself (e.g., adjusting the number of available permits as needed to meet the purpose and need of this plan). Additionally, the list of users exempt from requiring a reservation would be monitored and regulated.

type and use levels may be managed by establishing operational requirements that limit use and impacts.<sup>13</sup>

### Visitor Capacities

The implementation of visitor capacities for areas of the park where such capacities have not previously been identified (e.g., *Merced River* or *Tuolumne River Plans*) is included in the alternatives. Visitor use levels typically best meet desired conditions when use is dispersed throughout the day rather than when use occurs at concentrated times, causing pulsing visitation patterns. Concentrated visitor use in particular areas can lead to challenges in maintaining desired conditions for resource protection, the visitor experience, or both.

Table 3 presents the identified visitor capacities for the analysis areas directly relevant to plan actions, where these actions are needed to manage within specified capacity. Refer to appendix D for additional details on analysis areas, including other identified capacities where immediate action is not required to manage to those capacities in this plan.

**Table 3. Identified Visitor Capacities**

Analysis Area	Visitor Capacity
Tunnel View	390 people at one time
Mariposa Grove	3,960 people in one day during shuttle season
Glacier Point Viewpoints	690 people at one time
Tenaya Lake	543 people at one time

### ACTIONS COMMON TO ALTERNATIVE B AND ALTERNATIVE C

#### Hetch Hetchy Hours

Hetch Hetchy is open for limited hours each day. Under alternatives B and C, which require a parkwide reservation, visitors would need the same reservation to access Hetch Hetchy. However, the reservation times (i.e., 5:00 a.m.–4:00 p.m.) may differ between Hetch Hetchy and the rest of the park. Visitors would only be able to enter Hetch Hetchy during the operational hours in effect at any given time.

#### Other Actions

All campground and wilderness permits previously available on a first-come, first-served basis would require a reservation whenever the reservation system is in place.

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13. If the strategies here are insufficient to manage within identified capacities, the National Park Service may, in the future, implement a separate reservation system specifically for CUA holders. These reservations would be made available further in advance than other reservation types.

## **ALTERNATIVE B: PARKWIDE RESERVATIONS – PEAK HOURS, DAILY (PARK PREFERRED)**

### **Concept Statement**

Under alternative B, visitors would need one parkwide reservation to enter all areas of Yosemite National Park at any time during peak hours. This reservation would be valid for a three-day period, allowing visitors to enter and leave the park at any time within their three-day reservation window. This alternative would allow for holistic access to the park, granting visitors flexibility to come and go at any time within the three-day window and to move freely within the park to enjoy spontaneous exploration of Yosemite National Park’s resources and recreational opportunities.

### **Time of Day**

Upon initial implementation, this “peak hours” period would be 11 hours between 5:00 a.m. and 4:00 p.m. (see “Responsive Management Components – Time of Day,” which details management considerations for modifying reservation hours). This alternative has two entrance windows—one for all-day and one that starts in the afternoon. Visitors with all-day reservations can enter the park at any time during peak hours. Visitors with reservations made for afternoon arrivals could enter the park any time after noon and could access the park any time during “peak hours” on their second and third consecutive days.

### **Other Reservation Holders**

Visitors with overnight reservations (such as in-park lodging and campgrounds) within the park or in Yosemite West could access the park for either the three-day parkwide reservation period or the duration of the overnight reservation, whichever is longer.

## **ALTERNATIVE C: PARKWIDE RESERVATIONS – TIMED ENTRY**

### **Concept Statement**

Under alternative C, one parkwide timed-entry reservation would be required to enter all areas of Yosemite National Park. Timed-entry reservations would be valid for one day, with visitors required to arrive at Yosemite National Park during their designated window of time. Similar to alternative B, this approach would offer visitors holistic access to all of Yosemite National Park’s resources and recreational opportunities during the day of the reservation.

The timed-entry feature mitigates surges of visitors that would otherwise arrive at popular times in the morning and afternoon by spacing out arrivals throughout the day in approximately two-hour intervals (subject to modification when needed). While this system would add a level of planning complexity, requiring visitors to arrive within their designated time frame, it would improve the visitor experience by mitigating crowding at entrance stations and popular visitor destinations.

## **Time of Day**

Timed-entry reservations would be required from approximately 5:00 a.m. to 6:00 p.m. (see “Responsive Management Components – Time of Day,” which details management considerations for modifying reservation hours).

## **Other Reservation Holders**

Visitors with overnight reservations (such as in-park lodging and campgrounds) could initially enter the park beginning at noon on the first day of their overnight reservation.

## **ALTERNATIVE D: YOSEMITE VALLEY RESERVATIONS – TIMED ENTRY**

### **Concept Statement**

Under alternative D, a timed-entry reservation would be required for day users to enter Yosemite Valley in a private vehicle. Those with a Yosemite Valley reservation would be able to access all areas of the park, including Yosemite Valley, for one day. Those without a Yosemite Valley reservation would be able to access all areas of the park outside of Yosemite Valley in a personal vehicle but would not be able to enter Yosemite Valley with their personal vehicle during the reservation period. Access to Yosemite Valley would be open to these visitors after all reservation windows have closed. This alternative would offer a way for visitors to enjoy Yosemite Valley with reduced congestion, resource impacts, and crowding. While this alternative would restrict Yosemite Valley access to the number of available reservations, it would ensure that those unable to secure a reservation would still have the opportunity to explore other areas of the park.

### **Time of Day**

Each Yosemite Valley reservation would be valid for one day. Visitors would be required to arrive at Yosemite Valley during their designated entrance window, initially two hours (subject to modification when needed). After entering the park, visitors would proceed to the reservation checkpoint station, where park staff would confirm their Yosemite Valley reservation. Timed entry would initially be in effect 5:00 a.m.– 6:00 p.m. (see “Responsive Management Components – Time of Day,” which details management considerations for modifying reservation hours) on days when reservations are required.

### **Reservation Checkpoint Station**

A reservation checkpoint station for Yosemite Valley would be developed on Southside Drive near Bridalveil Fall, just east of its intersection with Wawona Road. The reservation checkpoint would be equipped with adequate power and internet connectivity to check reservations. Minor roadway modifications, described below (“Roadway Changes”), would be needed to allow space to facilitate turnarounds for visitors without a valid reservation and to accommodate three reservation checkpoint booths. These booths would be considered a temporary installation and would be removed if other technology solutions (such as license plate readers or other passive scanning technology) could later be implemented.

## Roadway Changes

Southside Drive would become a two-way road between Pohono Bridge and the reservation checkpoint station. The reservation checkpoint would be up to three booths wide to process vehicles efficiently and to prevent backups from this checkpoint into other intersections. If backups occur, reservation numbers would be adjusted to mitigate these impacts. Additional minor modifications such as striping, signage, and curb improvements would be made at the intersection of Southside Drive and the Pohono Bridge to account for different turning movements through the intersection as a result of the two-way road (see Figure 7). Road widening was not deemed necessary for visitor safety and access during the planning process but could be considered in the future.

To accommodate the change from one-way to two-way traffic, the intersection of Southside Drive and Wawona Road would be adapted to include a roundabout or modified three-way intersection. The intersection would be designed to allow for visitor travel between Wawona Road, El Portal Road, and Big Oak Flat Road without passing through Yosemite Valley. The final configuration of the intersection would be determined through implementation planning, design, and compliance. Planning and design would be informed by traffic engineering models, analysis of roadway alignments, and the minimum required turning radius. All queuing areas would be assessed for the installation of additional curbing and boulders to prevent roadside parking. Seasonal road restrictions, parking restrictions, and speed limit adjustments would be explored in various areas of the park including Wawona Road between Glacier Point Road and Tunnel View (see “Common to All Alternatives”) to preserve desired resource conditions.

Changes would be made to Tunnel View to mitigate potential impacts on Wawona Road from the new intersection, as well as high vehicle volumes at that location. The National Park Service would assess the need for additional traffic control changes at Tunnel View to mitigate any impacts of backups from the new Wawona Road roundabout. Based on the findings, intersection improvements would be developed at the Tunnel View parking area to prevent the long backups that currently obstruct traffic. All changes to roadways would be adequately signed. Additional roadway changes to mitigate traffic backups at Bridalveil may also be considered, if necessary.

## Other Supporting Infrastructure

Signage alerting visitors of Yosemite Valley reservation requirements would be required to reduce turnarounds at the Yosemite Valley-only reservation checkpoint and to help direct visitors within the park. Additional curbing would be installed at priority locations. Restroom

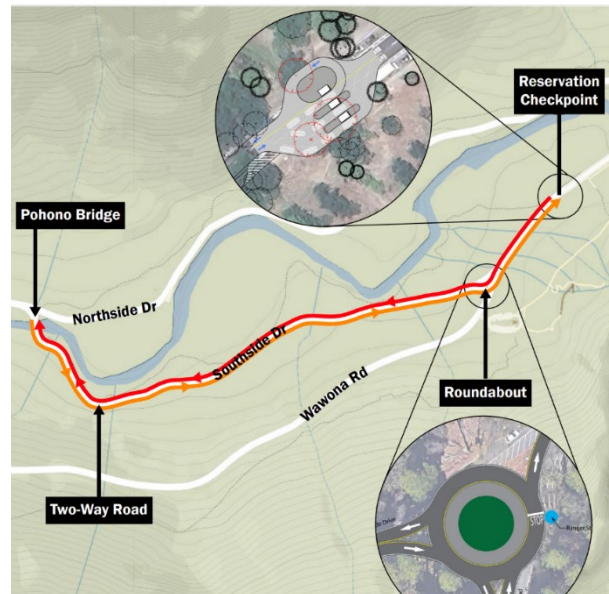


FIGURE 7. ROADWAY CHANGES FOR ALTERNATIVE D

upgrades may be necessary at several locations across the park to accommodate visitors who are staging in these areas to wait for their time to enter Yosemite Valley.<sup>14</sup>

### Other Reservation Holders

Visitors with overnight reservations in Yosemite Valley (such as in-park lodging and campgrounds) could access Yosemite Valley starting at noon on the day of their reservation. Visitors with overnight park reservations for locations outside of Yosemite Valley would still be required to secure a Yosemite Valley reservation to access Yosemite Valley in a private vehicle for day use.

### Indicators and Thresholds

In addition to the indicators described in “Common to All Action Alternatives” above, this alternative includes an additional indicator to monitor use levels in areas not managed by reservation systems.

**Table 4. Summary of Additional Indicators, Thresholds, and Related Triggers for Alternative D**

Indicator and Related Desired Conditions	Threshold
<p><b>Indicator:</b> Peak hour vehicles at one time within key road corridors</p> <p><b>Related Desired Conditions:</b> Visitors are provided with safe, convenient, conflict-free, and sustainable access to park resources and experiences.  Traffic is predominantly free flowing, though levels vary across the park and congestion and delays can occur but do not compromise safety or emergency response.</p>	<p>Threshold: Vehicles at one time in each corridor does not exceed the identified vehicle use level more than more than 20% of daylight hours</p> <ul style="list-style-type: none"> <li>• Trigger 1: Vehicles at one time exceeds the peak hour vehicles at one time of the road corridor more than 2 days per week for 3 consecutive weeks.               <ul style="list-style-type: none"> <li>○ Management response: Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas.</li> </ul> </li> <li>• Trigger 2: Vehicles at one time exceeds the peak hour vehicles at one time of the road more than 2 days per week for 2 consecutive years               <ul style="list-style-type: none"> <li>○ Management response: Start process to implement alternative B or C.</li> </ul> </li> </ul>

14. This action is not analyzed in detail in this document.

## SUMMARY OF ALTERNATIVES

### Actions and Strategies Common to All Action Alternatives

- Access for Traditionally Associated Tribal nations
- Private landowner/on-site residents
- Improved visitor communications
- Improved technology and entrance stations
- Continued commercial services, including tour bus access
- Continued regional transit and shuttle services
- Zoning updates, indicators and thresholds, and visitor capacities
- Temporary area closures for high-demand areas
- Visitors with lodging, camping, transportation, or certain commercial activity service reservations in a vehicle reservation area could use their service reservation to gain access to the area of the park for which they have a service reservation.
- Wilderness permit holders can enter the park anytime the day before or day of their reservation.
- Half Dome users can enter the park any time during the day of their reservation.
- Reservations required April–October. Reservations would be required on weekends plus federal holidays only in April–May and September–October and seven days a week in June–August.<sup>15</sup>

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15. These actions are subject to change according to the criteria described under “Responsive Management Components” in the “Common to All Alternatives” section.



**Table 5. Summary of Actions by Alternative**

<b>Topic</b>	<b>Alternative B: Parkwide Reservations – Peak Hours, Daily</b>	<b>Alternative C: Parkwide Reservations – Timed Entry</b>	<b>Alternative D: Yosemite Valley Reservations – Timed Entry</b>
Concept Statement (Overview)	Those with a parkwide reservation would be able to enter all areas of Yosemite National Park at any time during peak hours. This reservation would be valid for a three-day period, allowing visitors to enter and leave the park at any time within their three-day reservation window. This alternative would allow for holistic access to the park, granting visitors flexibility to come and go at any time within the three-day window and to move freely within the park to enjoy spontaneous exploration of Yosemite National Park’s resources and recreational opportunities.	Those with a parkwide timed entry reservation would be able to enter all areas of Yosemite National Park during a designated window of time. The timed-entry feature aims to address the surges of visitors that arrive at popular times in the morning and afternoon by spacing out arrivals throughout the day in approximately two-hour intervals. While this system would add a level of planning complexity, requiring visitors to arrive within their designated time frame, it would improve the visitor experience by mitigating crowding at entrance stations and popular visitor destinations.	Those with a Yosemite Valley reservation would be able to access all areas of the park for one day. Those without a Yosemite Valley reservation would only be able to access areas of the park outside of Yosemite Valley when the reservation system is in effect.
Reservation Areas	Reservations would be required for all park areas when in place. Reservations would be checked at all five park entrances.	Same as alternative B. Reservations would be required for all park areas when in place. Reservations would be checked at all five park entrances.	Reservations would be required to access Yosemite Valley only.
Duration*	Daily reservations would be valid for three days.	Daily reservations would be valid for one day; visitors must arrive during their designated two-hour window of time.	Same as alternative C. Daily reservations would be valid for one day; visitors must arrive during their designated two-hour window of time.
Timing*	Reservations would be in effect during an approximately 11-hour “peak hour” period from approximately 5:00 a.m. to 4:00 p.m.	Timed entry reservations would be in effect from approximately 5:00 a.m. to 6:00 p.m.	Same as alternative C. Timed entry reservations would be in effect from approximately 5:00 a.m. to 6:00 p.m.

Topic	Alternative B: Parkwide Reservations – Peak Hours, Daily	Alternative C: Parkwide Reservations – Timed Entry	Alternative D: Yosemite Valley Reservations – Timed Entry
Roadways and Parking	No changes would be made to roadways and intersections other than those mentioned in “Common to All Alternatives.”	No changes would be made to roadways and intersections other than those mentioned in “Common to All Alternatives.”	<ul style="list-style-type: none"> <li>• A reservation checkpoint station for Yosemite Valley would be developed near Bridalveil Fall.</li> <li>• Minor road modifications would occur near the checkpoint station to allow for visitor turnarounds and provide space for three reservation checkpoint booths.</li> <li>• Southside Drive would become a two-way road between the Pohono Bridge/Northside Drive intersection and the Yosemite Valley checkpoint.</li> <li>• The intersection of Southside Drive and Wawona Road would become a roundabout or modified three-way intersection to accommodate two-way traffic.</li> <li>• Changes would be made to Tunnel View to mitigate potential impacts on Wawona Road from the new intersection.</li> </ul>
Other Reservation Holders: Overnight Visitor and Permit Information	<p>Visitors with overnight reservations (such as in-park lodging and campgrounds) within the park or in Yosemite West could access the park for either the three-day parkwide reservation period or the duration of the overnight reservation, whichever is longer.</p> <p>All campground and wilderness permits previously available on a first-come, first-served basis would require a reservation whenever the reservation system is in place.</p>	<p>Visitors with overnight reservations (such as in-park lodging and campgrounds) could initially enter the park beginning at noon on the first day of their overnight reservation.</p> <p>All campground and wilderness permits previously available on a first-come, first-served basis would require a reservation whenever the reservation system is in place.</p>	<p>Visitors with overnight reservations in Yosemite Valley (such as in-park lodging and campgrounds) could access Yosemite Valley starting at noon on the day of their reservation. Visitors with overnight park reservations for locations outside of Yosemite Valley would still be required to secure a Yosemite Valley reservation to access Yosemite Valley in a private vehicle for day use.</p>

\*These actions are subject to change according to the criteria described under “Responsive Management Components” in “Common to All Alternatives.”



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CHAPTER THREE:  
Environmental  
Consequences

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## CHAPTER 3: ENVIRONMENTAL CONSEQUENCES

### INTRODUCTION

This chapter describes both the affected environment (the existing conditions of resources, including trends and ongoing and planned actions) and environmental consequences (impacts) of the proposed action on each resource. The affected environment and environmental consequences if no action is taken are described in each “Current and Expected Future Condition of the [Resource] if No Action is Taken” section. This is consistent with direction from the Council on Environmental Quality, which states that agencies “may contrast the impacts of the proposed action and alternatives with the current and expected future conditions of the affected environment in the absence of the action, which constitutes consideration of a no-action alternative” (85 *Federal Register* [FR] 43323). The environmental consequences of the proposed action are described in the “Effects of the Proposed Action on [Resource]” section for each resource.

### METHODOLOGY

To provide clarity and avoid redundancy, the following analysis includes a description of the current condition of resources (which is sometimes included in a stand-alone affected environment section) in the analysis of the no-action alternative. The analysis for each alternative evaluates direct, indirect, and cumulative impacts that would result from the implementation of each the alternatives. A factual description of the direct and indirect impacts provides an understanding of how the current condition of a resource would likely change by implementing each alternative. This analysis includes the changes associated with implementing the alternative as presented in chapter 2 and notes any additional impacts that would occur from implementing adaptive actions if those actions were to be implemented. The analysis is focused, to the greatest extent possible, on management changes and associated issues that could have meaningful impacts on the resources being evaluated. The description of these elements is based on the best professional judgment of NPS staff, past and recent research, and public comment.

In 2020, 2021, 2022, and 2024, Yosemite National Park staff implemented reservation systems to proactively manage visitor use due to the COVID-19 pandemic, construction projects, and road closures throughout the park. These reservation systems were temporary actions, and the system design was experimental and not consistent across each year. In 2023, park staff did not implement a reservation system, thus returning to routine entrance station operations. Therefore, current environmental conditions are those present in 2023 and are relatively consistent with data collected before 2020. For these reasons, data from 2023, as well as 2019 and earlier, are used to describe current conditions of the environment.

In multiple analyses below, changes in vehicle volumes at one time, per day, or per specific times of day are presented based on best available data. The no-action alternative volumes are based on observed vehicle volumes from 2019. In some places, data from 2023 are presented for an additional comparison but are not used in all places since exceptional snow loads delayed the opening of major areas of the park until later in the summer. To develop volume projections for the action alternatives, the project team compiled both quantitative and qualitative observations

from reservation pilots at Yosemite and, in some cases, used comparable data from other park units to inform projections for reservation systems that were not piloted at Yosemite (e.g., data from Rocky Mountain’s Bear Lake Reservations system informed volume projections under alternative D). Each visitation projection is designed to manage within identified capacities for the park, align with desired conditions for arrival experiences, and manage within parking availability. These projections considered a range of variables including hourly vehicle entry counts, average number of people per private vehicle, average parking lot turnover rates, vehicle distribution throughout the park, and return rates for multiday visitors. These projections are not intended to determine the number of reservations that will be available on any given day; rather, they are included here to disclose best available information for analysis and how the actions presented in each alternative will result in anticipated levels of vehicle use compared to the no-action alternative.

## **VISITOR ACCESS, USE, AND EXPERIENCE**

Visitor access, use, and experience are distinct but intertwined elements and address each component of a visit from arrival and entrance (access) to where, when, and how visitors engage with the resources (use) and what they feel and perceive throughout their visit (experience). Each element contributes to the overall value of a visitor's time in the park. Visitor access, use, and experience are evaluated together in the analysis of the alternatives.

Visitor access refers to how and when visitors enter Yosemite National Park or reach facilities and experiences and how and when park management may influence visitor arrival patterns. The ways visitors access the park and destinations in the park influence the types of uses that occur and the overall visitor experience. Visitor use refers to human presence in an area for recreational purposes, including education, interpretation, inspiration, and physical and mental health. Visitor experience is the perceptions, feelings, and reactions that a visitor has before, during, and after a visit to an area.

### **Current and Expected Future Condition of Visitor Access, Use, and Experience If No Action Is Taken**

Under current and expected future conditions, visitor access, use, and experience would remain the same or similar to existing conditions, including trends and impacts from past, present, and foreseeable planned actions. The impacts described reflect information from the most recent two years when there was no piloted entrance reservation system—2023 and 2019.<sup>16</sup>

Visitors to Yosemite participate in numerous activities throughout the park. They enjoy year-round scenic driving on Wawona, Hetch Hetchy, El Portal, and Big Oak Flat Roads and seasonal driving on Tioga Road, Glacier Point Road, and, for those with a disability placard, the Mariposa Grove Road. Other activities include participating in educational and interpretive programming; activities such as walking, hiking, rock climbing, cycling, horseback riding, wildlife and bird viewing, backpacking, camping, picnicking, painting, and photography; water-based activities

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16. In 2023, the Tioga Road corridor was closed until July, changing patterns of access, use, and experience when compared to most years and, thus, does not provide the full context of the current conditions for use, access, and experience.

such as swimming, fishing, and boating; winter activities; and simply sitting and taking in the incomparable views. The park also offers diverse overnight use opportunities, from primitive wilderness camping to full-service lodges. Under current management, permits are not required for the vast majority of these activities, so visitors can come and go to participate in their chosen activities which supports positive visitor experience. The only recreational activities that do require permits or reservations are hiking Half Dome, Big Wall climbing, camping in campgrounds, and overnight use within wilderness. For commercial services that include tours or stays at lodges, visitors need to book reservations directly with commercial service providers.

The visitor survey conducted in the summer of 2023 found that for 42% of visitors, hiking was the primary activity; for 41%, viewing natural scenery was the primary activity; and for 8%, backpacking was the primary activity (Otak 2024).<sup>17</sup>

### Visitation Trends

Since data collection began at Yosemite, park staff have seen an overall increasing trend in annual visitation. Busy days are getting busier, and both park infrastructure and the staff's ability to accommodate use levels during the busiest times are strained. The seasonal closures of the Tioga and Glacier Point Roads in addition to any closures for emergencies also lead to concentrated use in areas of the park not impacted by seasonal closures or emergencies.

Monitoring of visitor use levels has identified that the highest volumes of use occur during specific times of the year, week, and day. Over the year, visitation is lowest between November and March, when much of the park is covered in snow. Visitation starts to increase in late winter and is highest from June through August, before it starts to decrease again in September. Data show that from April through September, weekends and holidays consistently have high use, but weekdays, especially from June through August, can also be consistently busy. While many factors affect visitation, high use levels are expected to continue and potentially increase under a continuation of current management, especially during peak seasons, days, and times.

The concentrated park use at these peak times is a primary reason there is crowding and congestion at entrance stations, along roadways, in parking areas, and at popular destinations, adversely affecting the visitor experience.

From November through March, visitation is much lower. The higher altitude areas of the park are often blanketed with snow and closed to vehicle access, concentrating visitor use to a smaller area of the park. Winter recreation includes many of the same activities popular in the summer, but also snow-based recreation, including downhill and cross-country skiing, snowshoeing, tubing, and snow play. Visitors at this time of year may be seeking a less busy experience, with more opportunities for quiet and solitude.

Impacts from climate change could alter how and when park visitation occurs. Climate change could increase the frequency and severity of extreme weather events, such as atmospheric rivers

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17. Data from this 2023 visitor use survey conducted by contractor Otak. provides information on visitor perspectives on existing conditions at the park. As with any study, there are some limitations to this data, including nonresponse bias, and, for mail-in responses, the time between their visit to the park and when they filled out the response may impact recall of their experience. The study was conducted in August 2023, the second busiest month of the year and represents a snapshot for that time in Yosemite National Park.

or droughts, which produce natural disasters like floods, heavy snowstorms, or high-intensity wildfires. Based on trends over the last few years, these conditions could change which areas of the park are open to visitors and when, limiting visitor access or concentrating use to other areas. In 2023, unusually high snowpack led to Tioga Road being closed to vehicle traffic until July 22, whereas this road typically opens in late May or early June (NPS n.d.). During major weather events, park staff may need to close portions or all of the park. The park has also experienced decreased visitation due to poor air quality and increasing particulate levels from wildfire smoke (Brown et al. 2024).

### **Trip Planning, Communication, and Information**

The National Park Service provides trip planning information through the park's website ([www.nps.gov/yose](http://www.nps.gov/yose)). Recent research found that 54% of visitors accessed the park's website before arrival (Otak 2024). Park staff also use text message alerts, social media, press releases, and local, state, and national media to share the most current information to assist visitors as they plan their trips. Park staff seek to work with other publications and web-based platforms to make sure updated and accurate information is being shared across outlets. For those seeking information related to overnight accommodations both within and outside the park, park staff direct people to either Recreation.gov or commercial providers' websites to make reservations. Having access to the information necessary to plan and complete their trip is important for visitors to feel ready and secure for their visit.

Visitors who prefer to plan ahead for their trips can use existing reservation systems and know they will be able to get into the park. The 2023 visitor survey found that more than 60% of visitors planned their trips to Yosemite more than a month ahead of their visit (Otak, 2024). Visitors who like a more spontaneous trip can visit at any moment and access the park. This flexibility supports visitors feeling a sense of freedom to plan their trips. They can change plans based on personal preferences, changing weather, job requirements, or other conditions.

As visitation has increased, park staff have also increased communications about entrance lines and wait times to help set expectations. The park website advises visitors to expect two-hour waits on weekends, so many visitors do expect traffic congestion as they approach the park. The National Park Service also encourages visitors to arrive early if they want to find a parking spot.

On-site, there are multiple locations for getting information. Visitors can find information centers at Yosemite Valley, Tuolumne Meadows, Wawona, and Big Oak Flat, as well as unstaffed kiosks and signage throughout the park. Yosemite Valley and Tuolumne Meadows have separate wilderness centers, and Yosemite Valley has a museum, the Yosemite Exploration Center, the Yosemite Conservation Heritage Center, and the Happy Isles Art and Nature Center. While some of these locations are only open seasonally, others are open year-round, providing access to information and services for visitors. The 2019 environmental assessment analyzed the replacement of the Big Oak Flat Welcome Center complex, and the 2016 *Tuolumne River Plan* analyzed a Tuolumne Meadows information station, neither of which have been implemented yet. These proposed new locations would provide visitors arriving at the park with other options for information without having to go into Yosemite Valley. Some of the gateway communities also have visitor centers with park information, but these are not operated or staffed by the National Park Service.



## Arrival to the Park and Entrance Stations

To enter the park, visitors must purchase a park entrance pass, which varies by vehicle type, or use one of the national parks and federal recreational lands passes, which include annual, military, senior, access, 4th grade, and volunteer options. Entrance passes are good for seven days, during which visitors have unlimited reentry on their own schedule. Data collected by the park and local entities show that visitors stay an average of three to four days in the park and surrounding communities.

Visitors enter through one of five entrances: the Tioga Pass Entrance on the east side of the park, the Arch Rock and Big Oak Flat Entrances on the west side of the park, South Entrance, and the Hetch Hetchy Entrance in the northwest portion of the park (which only provides vehicle access to the Hetch Hetchy area). Currently, for all entrances except Hetch Hetchy, there are no limits to the numbers of vehicles or people that can come through these stations. Further, the Arch Rock, Big Oak Flat, and South entrances are open 24 hours a day, 365 days per year, but are only staffed a portion of that time, which varies seasonally. The Tioga Pass entrance station on the east side of the park is closed during the winter and reopened when Tioga Road opens.

Hetch Hetchy is open from sunrise to sunset, and the peak season is generally open from late March to late June. During these times, waits to enter the area can be up to an hour. Because it is a self-contained area with one road in and out, when the Hetch Hetchy area fills, park staff can close the gate until enough parking spots are available for additional visitors to enter. This adversely impacts visitors who arrive at the area and cannot enter but benefits those visitors who are within the area, so it does not get too congested.

Because visitation is generally high and the vast majority of visitors use private vehicles to access the park, passing through entrance stations during peak seasons can mean waiting in long lines. Over the summer of 2023, park staff regularly observed entrance station lines of about two hours and reported lines as long as four hours. As visitation has increased, park staff have observed longer lines for longer periods of the year, starting earlier in the spring and extending later into the fall, and for more hours of the day during the peak season.

Long lines at entrance stations present health and safety concerns because no restroom or water facilities are along the roads, some roadways are in rockfall hazard zones, and congestion can make emergency access in and out of the park difficult. Further, cellular service is poor in this area, which can be a concern for safety. Starting a visit with a long, potentially unpleasant wait is an adverse impact on the overall visitor experience.

The park benefits from a partnership with YARTS, which operates public transportation service to Yosemite Valley from gateway communities and from railway stations and airports in nearby cities for a fee. Commercial tour operators deliver roughly 4%–6% of the park's annual visitors. Transit and tour buses provide an alternative form of travel that is important for people of varying physical abilities and for international travelers. Delays at entrance stations have detrimental effects on transit schedules and tour bus itineraries.

## In-Park Experience

Under current management, visitors technically have the flexibility to arrive at the park at any time to access their desired locations and experiences. They can choose to visit the park during times and seasons that best align with their desired uses and, once in the park, select their destination based on what areas are open and the type of experience they are seeking.

Once inside the park, visitors often encounter traffic jams or slowdowns along roadways as thousands of vehicles make their way along narrow, two-lane roads. Congestion, whether experienced in vehicles or on foot, can lead to feelings of stress and restriction since visitors cannot move at their own pace or access their desired destinations and may feel rushed or crowded. Congestion leads to backups and slowdowns on trails, as well as long waits to access services.

Entrance into the park does not guarantee parking will be available at a visitor's desired destination. During weekends and peak times of the day, parking fills early, starting in East Yosemite Valley and continuing west. Other key parking areas, including Hetch Hetchy, Tuolumne Grove, Tenaya Lake, Tuolumne Meadows, Glacier Point, Mariposa Grove, and Wawona, also fill early in the day. Visitors arriving after mid-morning have a difficult time finding parking, leading to vehicular congestion on roadways, frustration, and illegal parking that can cause safety concerns for vehicles and pedestrians.

The first area to fill is East Yosemite Valley, where parking remains full for most of the day during peak season. The visitor experience can be very crowded, with thousands of vehicles and people within a 7-square-mile area, leading to feelings of frustration or confusion for visitors. The free Yosemite Valley shuttle system runs year-round, allowing visitors to park their private vehicles and use the shuttle to move around Yosemite Valley, but traffic congestion and illegal parking can cause delays in shuttle service during peak periods, particularly in East Yosemite Valley. With delays and high demand, visitors and park staff have reported long lines and waits, seeing two to three full shuttles pass before one stops to pick up passengers. Some visitors have reported, and have been observed, walking along the roadways after giving up hope to get on a shuttle. This is a safety concern and is tiring—especially for those with mobility challenges or small children—and adds travel time between destinations.

Yosemite Valley is a primary draw for visitors both because of the iconic granite walls towering over the Merced River and due to the high concentration of visitor services, including grocery and souvenir shops, restaurants, lodges, restrooms, and information centers. Yosemite Valley also has the highest concentration of restroom facilities, with over a third of the park's total restrooms. Many visitors rely on these services during their trip and expect to be able to access them. Access to and the use of these services benefit the visitor experience. No other area in the park provides the same level of services. Additionally, Yosemite Valley provides the most interpretive and educational programming in the park, so visitors seeking this type of experience are adversely impacted if they are unable to access Yosemite Valley and these opportunities. Park staff would provide more programming in other areas of the park, but concerns about traffic in the park and the ability to get to areas on time for preplanned programming has been a barrier to the expansion of additional programming beyond Yosemite Valley.

The 2023 survey found that a majority of visitor groups (51%) said they were negatively impacted by parking congestion or parking shortages, and 25% said they were negatively impacted by crowding on park trails. Over one-third of respondents were negatively impacted by traffic congestion on park roads (37%) and crowding at scenic overlooks (36%). Visitors also shared that they were negatively impacted by the lack of shuttle service options and unacceptable wait times (Otak 2024).<sup>18</sup> Similar themes were found in public comments submitted in summer 2023, which support this planning process.

As described in the *Merced River Plan*, the National Park Service could develop a park-and-ride system that allows visitors to park their vehicles and ride on park-provided shuttles into East Yosemite Valley to connect to the Yosemite Valley shuttle system. This system would be located in the neighboring town of El Portal and would accommodate up to 300 vehicles. When implemented, this shuttle system would support visitor access to Yosemite Valley, beneficially impacting conditions on roadways and parking areas, at least temporarily. The park-and-ride system itself would not solve crowding and congestion problems because it would not necessarily displace the in-park vehicles, and visitation would likely continue to increase. Developing and operating the component of the El Portal park-and-ride shuttle system would be costly.

The Hetch Hetchy area has had historically lower visitation compared to other developed areas of the park. It has fewer services than Yosemite Valley but offers some similar geology and views, mostly attracting hikers, anglers, and backpackers. Hetch Hetchy was excluded from the 2021, 2022, and 2024<sup>19</sup> pilot reservations and park staff observed that use increased to this area, especially for visitors without reservations who still wanted to access Yosemite. This high level of use continued into 2023, leading to more congestion and temporary closures when parking was full.

High volumes of users make it difficult for the National Park Service to respond to medical, rescue, and law enforcement calls for service, both due to the volume of emergencies and the ability for staff to access the emergency. Numbers of emergency calls were markedly reduced during reservation system pilots. Additionally, park staff must provide clean, safe, and comfortable conditions and address impacted resources. Keeping restrooms clean, supplied, and open to visitors has been more and more challenging as use has increased. Further, overflowing trash cans, litter left behind by visitors, vegetation trampling or social trail development, and visitors approaching or feeding wildlife can all negatively impact the natural experience and perception of quality within the park. As NPS staff must address these myriad issues, fewer staff are available to engage with visitors and be available to assist visitors when needed. In the 2023 study, 26% of visitors reported that crowding at visitor amenities and

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18. Results from this study are included in this analysis due to its recent nature and in some cases it's the best available information on visitor sentiments related to conditions without reservation systems. However, the responses in the mailback portion of this survey are skewed, indicating that results may not be representative of the visiting public. Therefore, though this information is included here, it is not used independently to draw conclusions in this analysis.

19. Because the Hetch Hetchy season ends earlier in the year, data from 2024 was available to include within this analysis. The gate was closed at the entrance station and a "one in, one out" approach for vehicle entry implemented fifteen times over the season, which was almost 3 times what staff had observed in previous years.

services negatively impacted their visit (Otak 2024). Public comment also reported similar themes, that one of the notable impacts on their visit was crowding at amenities and services.

### **Management of Crowding for Specific Locations or Events**

For several years, park staff have implemented what is known as a traffic diversion or “shunt” at the El Capitan Crossover and Southside Drive intersection in Yosemite Valley. During the shunt, staff manage access into the East Yosemite Valley and turn day-use vehicles around until enough parking spaces have opened to allow more people in. This usually lasts three to four hours, but it can be longer. In 2023, park staff implemented the shunt on many days, including almost every Saturday in the summer. On some days, the shunt was implemented as early as 8:20 a.m., meaning everyone arriving after that was turned away from East Yosemite Valley until enough parking cleared up and the road reopened. Park staff also implement short-term closures in other areas as needed (e.g., Glacier Point, Mariposa Grove, and Hetch Hetchy).

Park staff would continue to manage special events or unique circumstances as needed, which could include implementing temporary reservation systems, like those piloted in 2020, 2021, 2022, and 2024. Over the past four years, park managers have also piloted a temporary reservation system for the Horsetail Fall event, which attracts thousands of visitors and has become increasingly popular over the last 10 years due to social media promotion. In 2021, park managers found it necessary to start to implement a reservation system specific to the event, which has continued each year since then. For three weekends in February, reservations were required to enter the park 24 hours a day to keep numbers within manageable levels. Short-term, site-specific reservation systems could be implemented for other special events, such as solar eclipses, meteor showers, or multiple, large construction projects.

As visitor use patterns have changed in Yosemite, there have been indirect impacts on use in neighboring lands, including those managed by other public agencies. When Yosemite is crowded or different management actions have changed use (e.g., during the pilot reservation systems or short-term closures), visitor use has been observed to disperse to some of these areas, increasing use and related impacts. Additionally, external groups, local visitor bureaus, travel blogs, and local commercial services have increased messaging and advertising around some of these areas, which has also led to more use (such as [www.yosemitehikes.com/hikes](http://www.yosemitehikes.com/hikes) and <https://www.yosemite.com/>). The National Park Service works closely with partner agencies to implement management actions that address issues and benefit visitors.

Other ongoing and future planned actions that may impact visitor access, use, and experience and that could have a cumulative impact on this topic, when combined with the proposed alternatives include the rehabilitation of Big Oak Flat Road and wastewater treatment system replacements in El Portal and Tuolumne Meadows. These projects will require temporary staging in visitor use areas that could adversely impact the natural scenery and impede traffic during construction, causing traffic jams or delays as visitors move through the park. However, project outcomes will have long-term beneficial impacts on visitor use by improving the wastewater systems, roadways, and facilities.

Past actions include roadway and parking area improvements that were conceptualized by the *Merced River Plan*, *Tuolumne River Plan*, and *Mariposa Grove Plan*; the implementation of the Yosemite Valley continuous flow intersection project, which was intended to promote free-

flowing travel; and updating and repurposing the Yosemite Valley Welcome Center. Parking areas have been expanded and updated across the park, including at the Yosemite Valley Lodge, Yosemite Village, Bridalveil Fall, Tenaya Lake, Tuolumne Grove, Tuolumne Meadows, and along Glacier Point Road—both at trailheads and at the viewpoint. These projects improved parking layout and organization to provide easier access to facilities (e.g., restrooms) and shuttle stops. The Mariposa Grove restoration effort was completed in 2015, changing how visitors park and access the grove. In 2024, the park finished renovating shuttle bus stops in East Yosemite Valley, improving their functionality. These actions were all taken to improve visitor use and experience.

Under a continuation of current management, impacts on visitor access, use, mobility, and experience during peak seasons and hours would continue to be adverse. Visitors would be turned away from their desired destinations or spend time circling looking for parking spots. Facilities and services would continue to struggle to meet demand and be clean and operational. Concentrated uses in developed area would also push more use to areas of the park where there are limited services, leading to waste management and sanitation issues. High volumes of users arriving at the same time would continue to lead to congested conditions at entrance gates, along roadways, in parking areas, and at destinations.

## **Effects of Actions Common to All Action Alternatives**

### **Annual and Seasonal Visitation**

The action alternatives would intentionally manage visitation during peak seasons and hours when entrances, roads, parking lots, and trails are historically the most. During the winter season, from November through March, there would initially be no reservation requirements to enter the park—except during the Horsetail Fall event described below—and visitor access, use, and experience would be the same as described under the current and expected future conditions above.

The reservation system would be in effect to some degree each year from April through October. During the shoulder season months—April, May, September, and October—reservations would initially only be required on weekends and federal holidays. While visitors may not be able to get a reservation for their preferred time on a weekend, they would still be able to enter the park during a weekday during those shoulder months without a reservation. This would reduce the overall impact of the reservation system and provide some opportunities for visitors to access the park without reservations. The National Park Service acknowledges that not all visitors can come during weekdays. Work or travel schedules may limit who can come on non-reservation days during this period. Further, this system may adversely affect local users who visit during weekends under alternative A and would now need to secure a reservation in advance.

From approximately Memorial Day to Labor Day, the reservation system would initially be implemented seven days a week. As described under alternative A, these are the months with the most visitors to Yosemite, which leads to daily congestion at entrances and throughout the park. Implementing the reservation system daily during this time would help to address these issues and provide for an improved overall experience parkwide. Park staff would monitor conditions

as defined in chapter 2 and appendix C to inform management if they need to adjust the length and timing of reservation periods—either longer or shorter.

### **Trip Planning, Communications, and Information**

All the alternatives would include communications with visitors to help them plan their visit, understand what is needed for entry, and prepare them for arrival, as well as provide on-site communications to support wayfinding and orientation once at the park. These communications would beneficially impact visitors access, use, and experience.

Reservations would be made available using various time frames, e.g., several months beforehand to a day or two in advance. Any available inventory would remain available through the day of, which maximizes the use of the reservation inventory. These varied time frames would allow visitors with different trip planning preferences and different types of work/life flexibility (e.g., the ability to secure time off in advance or have travel funds available) with opportunities to secure reservations and visit as they are able.

### **Arrival to the Park and Entrance Stations**

Minor updates to roadways, parking areas, and entrance stations, as described in chapter 2, would negatively impact visitor access and experience for the duration of the construction project, which would be expected to last several weeks. During this time, traffic may be slowed or detoured, and some areas may be closed. This would negatively impact the access, use, and experience for those who visit during this time. However, once construction is completed, these improvements would have beneficial impacts on the overall access to the park and experience at entrance stations and along the park's road corridors by improving road conditions, parking delineation, and circulation for as long as this plan is in place. The park's continued partnership with YARTS would benefit visitor access, as visitors without reservations would still be able to ride the shuttle into the park, as described under alternative A. Ridership of YARTS would be expected to increase under any reservation system.

### **In-Park Experience**

Each action alternative includes a reservation system to manage entrance into either all or a portion of the park for a portion of the year. Under any of these alternatives, the peak accumulation of visitors at one time is expected to be reduced when reservations are in place (approximately April through October) when compared to the no-action alternative. However, the systems are managed to spread out use through the day, week, or year to times of day or days of the year when additional use can be accommodated. This proactive management of visitor arrivals would change visitor access to the park, having a short-term adverse impact while visitors adapt to the new system, but would ultimately be beneficial as visitors adapt to take advantage of opportunities during nonpeak times. More specific details about impacts on the volume of use, as well as beneficial impacts on experience within reservation areas, are included under each alternative below.

Across these alternatives, park staff may responsively manage components of the reservation systems as needed. For example, the reservation system could be expanded seasonally to include more of the shoulder season (e.g., March or November) or to winter weekends due to increases

in visitation at those times. If these changes are needed, this would extend the effects, both beneficial and adverse, discussed under each system into longer periods of the year. The time of day when reservations are required, while analyzed for specific times under each alternative below, could be adjusted based on how visitors adapt to any new system. Lengthening the time of the reservation system would adversely impact access for those without reservations but would likely have beneficial impacts on the arrival experience, lengths of queues, and ease of entrance into the park. Park staff could also shorten the time of the reservation period if conditions are showing it is not required for as much of the day, leading to beneficial impacts for those that enjoy spontaneous visits to the park. Park staff could also implement a lottery system for obtaining a reservation. Lotteries minimize inequality of other reservation systems (e.g., those with the fastest internet and most flexible work schedules compete better for first-come, first-served systems) and the stress of needing to be online at a specific time to get a reservation, particularly on highly desirable dates (e.g., Saturdays in the summer).

Under each of the action alternatives, peak accumulation of visitors at one time is expected to be reduced, but total annual visitation could increase if historically underused times (e.g., midweek) are more fully used.

### **Management of Crowding for Specific Locations or Events**

The updated management zoning and desired conditions (see chapter 2 and appendix B) provide updated management direction for visitor use and experience and resource protection across the various park landscapes, providing consideration and inclusion of equitable, accessible, and inclusive experiences and for facilities that support a diverse range of visitor interests and preferences. These actions benefit visitors' access, use, and experiences, as they provide clear direction for the long-term management of the park. Park staff have also identified indicators and associated thresholds, as well as other related monitoring (see appendix C), to monitor conditions and inform management when additional actions or adjustments to systems might be required. Monitoring supports proactive management to achieve and maintain desired conditions, which beneficially impacts the overall visitor experience in the park.

Additionally, park staff would identify and manage to visitor capacities by implementing the actions described in chapter 2 (see appendix D for the capacity identification). The identified capacities help ensure that desired conditions for visitor use and experience are maintained, thus beneficially impacting the experience.

The pilot reservation system for Horsetail Fall, piloted under the no-action alternative, would be implemented annually under all action alternatives. This would lead to a higher level of advanced trip planning for visitors, which would result in an adverse impact for those who do not get a reservation or who value spontaneous visits to the park but would be a beneficial impact on the overall experience of those who attend.

### **Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily**

#### **Trip Planning, Communication, and Information**

The public would have to adjust to a new system for planning a trip to Yosemite when the reservation system is in effect. This would include learning at what times of the year reservations

are required, when they are available for purchase, and where and how to acquire them (e.g., using Recreation.gov). This adjustment would be an adverse impact on trip planning when compared to current management.

While a reservation system would add an additional requirement that visitors do not have under alternative A, the system would be straightforward to communicate to the visitor that at peak times of the year and day, visitors need a reservation to enter the park, and then they can go where they want in the park over three days. For most visitors who obtain reservations under this alternative, they would have a “daily reservation” and be able to arrive at the park during any time and gain entry, which would further benefit the flexibility of access. For those with the noon arrival timed-entry window, they would only be able to arrive after 12:00 p.m., which would mean less flexibility and adversely affect their experience.

Under alternative B, the reservation would be valid for three days, which is an adverse impact on visitor access compared to no action, as there are currently no limitations on how many days visitors can visit the park.

### **Arrival to the Park and Entrance Stations**

During peak seasons and hours, alternative B would have adverse impacts on visitor access to the park by limiting access to only those with reservations during times when reservations are required. When the reservation system is in place from April through October, all visitors to the park would be required to obtain a reservation to enter during the reservation hours. As a result, some people who wish to visit the park but did not get a reservation would not be able to enter during peak hours. For those who arrive without a reservation, there would be an adverse impact, as they would be turned away from the park, unable to visit until after the reservation time. The National Park Service would continue to communicate and educate the public about reservation requirements with the expectation that as they grow more familiar with the system and adapt to it, fewer people would arrive without a reservation and thus lessening the adverse impact on the public.

The reservation system under alternative B would initially be in effect from 5:00 a.m. to 4:00 p.m. Because the reservation requirement would end at 4:00 p.m. each day, visitors who could not get a reservation would have the opportunity to enter and experience the park for a portion of the day, lessening the adverse impact of the reservation requirement. Visitors without reservations could also enter the park before 5:00 a.m., allowing for a full-day experience. There are potential risks to visitor safety if those entering the park after the reservation period at 4:00 p.m. try to undertake activities that require more time or daylight to complete. Park staff would seek to provide guidance to visitors about amounts of time needed for different activities to minimize these risks.

The Hetch Hetchy area of the park would be included within the parkwide reservation system and require reservations for the same amount of time, from 5:00 a.m. to 4:00 p.m. Because this area is only open during daylight hours, the length of reservation hours would adversely affect the amount of time any visitor without a reservation would have to enter and recreate (e.g., in June, the sun sets around 8:00 p.m., so visitors would have between 4:00 p.m. and 8:00 p.m. to enter and visit Hetch Hetchy). Including Hetch Hetchy in the parkwide reservation would more



proactively manage use to preserve resources and provide positive visitor experiences in the area.

In this alternative, visitors with the daily reservations would be able to arrive at the park at any time throughout the day, as visitors can currently do under alternative A. Therefore, park staff expect that visitation patterns for this type of entry would be similar to that under alternative A and that arrivals for those with reservations would peak in the morning between 8:00 a.m. and 11:00 a.m. The second reservation period, for those with the 12:00 p.m. timed entry, would likely lead to another surge of arrivals, though it would be smaller. After the reservation period ends at 4:00 p.m., there could be another peak as non-reservation holders enter the park. Because visitors would have reservations that need to be validated at entry points, the processing time for each vehicle would increase compared to alternative A, which would lead to lines at entrance stations. Further, while visitors learn about and adjust to this system upon adoption of this system, the National Park Service expects that there would be some visitors waiting in entrance station queues who do not have reservations and adding to the length of the queues. As visitors learn about this system, the queues would likely reduce over time. At 4:00 p.m., another spike in the entry line may occur as those coming for the post-reservation time queue at entry gates. This spike could lead to a longer wait time than under the no-action alternative, which would adversely affect visitors.

This alternative would seek to improve overall conditions at entry gates compared to no action and remove potential for the extra-long lines (e.g., between two and four hours) that can occur under current management. Visitors would still expect to encounter queues and wait times, but they would be more actively managed during reservation periods. Alternative B would have an overall beneficial impact on the arrival experience to the park when compared to current management (alternative A).

Under the management scenario described in this alternative and based on best available data, it is likely that the number of vehicles accessing the park would change when the reservation system is in effect. Upon initial implementation, it is expected that peak summer season visitation (June–August) would be lower by about 5% compared to average vehicle volumes for the same months in the five years preceding reservation pilots (2015–2019). When compared to the same months in 2023, this would be a 5% increase.<sup>20</sup> Vehicle volumes for the full managed season (April–October) are harder to project because active management of vehicles is not proposed for weekdays during April, May, September, and October. However, if the system described in the alternative is fully implemented, visitation could grow by 10% across these months. This growth would be contingent on visitors fully using available reservations and

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20. One of the current constraints on the system is the time it takes to process a high volume of vehicles entering the park with a range of valid reservations or other documentation that needs to be validated while still maintaining gate wait times that are consistent with desired conditions. Over time, the goal is to move to a technological solution that streamlines the entry validation process. If a fully contactless system could be implemented and all reservations were fully used from June through August, the number of vehicles that could be accommodated during this season could increase by up to 7% compared to similar months in 2015–2019 while still managing to identified capacities and within thresholds for gate waiting times and parking use.

visitors redistributing from weekends to weekdays and from peak months to shoulder seasons (when additional use can be accommodated).

### **In-Park Experience**

While this alternative would adversely affect access *to* the park, it would improve conditions for visitors to travel around and access desired experiences *in* the park, when compared to current management. Under the parkwide reservation system in the alternative, once inside, visitors with a reservation could access the entire park, with the freedom to travel around as they choose, similar to current management. This system would allow visitors the flexibility to take advantage of whichever opportunities in the park align with their desired goals for their visits, including visiting East Yosemite Valley.

Visitor experience parkwide would be improved when compared to current management through the implementation of alternative B. Upon the initial implementation of this alternative, it is expected that the number of vehicles at one time in the park would be reduced by 36% from the busiest days and reduced by 10% from average days. Therefore, visitors would experience less congestion along roadways, in parking areas, at trailheads, and when using services than under the no-action alternative. Alternative B would improve conditions for visitors parkwide, including circulation and movement, as fewer vehicles would be in the roadways, so visitors could more easily move from location to location and more efficiently use their time in the park. The reservation system would also spread use into times that were historically less busy, such as later in the day, during weekdays, or even into the winter months. This would have both beneficial and adverse impacts: spreading use would lower congestions and crowding, but it would also change the types of experiences at historically less-busy seasons, days, and hours, where visitors who are seeking a quieter park might have more difficulty finding it during the reservation period. Actions that redirect traffic when areas get full, like the shunt described under alternative A, should not be necessary under this alternative or only used in emergencies or for other rare, unexpected conditions (e.g., rockfall).

For those seeking specific types of experiences, such as rock climbing or cycling, they would be required to get a reservation like any other user, which would adversely affect their access and use of the park for their activity. However, if they have a reservation, they would be able to access whatever portion of the park they want to participate in their activity and would have less congestion for both access and during their experience. For example, big wall climbers would be able to access Yosemite Valley for popular routes, and cyclists who want to ride in any portion of the park, including Yosemite Valley, would have less traffic to compete with along roadways, improving safety and overall experience.

Parkwide management of visitation within identified capacities under a reservation system would allow park staff to provide safe, clean, and stocked facilities and services, such as restrooms, more efficiently.

### **Cumulative Impacts**

When paired with the past, present, and reasonably foreseeable future actions described under the current and expected future conditions section and the actions common to all alternatives, alternative B would result in beneficial cumulative impacts on visitor access, use, and experience

at peak times. Visitors would more easily be able to move through entrance stations, travel throughout the park, find parking at their desired destinations, use clean and functional visitor services, and choose when, where, and how to spend their time during their visit.

## **Effects of Alternative C: Parkwide Reservations – Timed Entry**

### **Trip Planning, Communications, and Information**

As described under alternative B, the public would have to adjust to a new system for trip planning under this alternative, but the additional requirement that all visitors arrive within a specific time frame (timed entry) and the shorter duration for which the reservation is valid could add additional challenges to planning. Under alternative C, reservations would be valid for only one day. This duration decreases flexibility for visitors to access the park for more than one day or to adjust if conditions do not allow for a visit (e.g., weather, travel delays, or personal reasons), adversely affecting the amount of time they can be in the park as compared to the no-action alternative. Trip planning would be more complicated with the timed-entry component of the reservation and the need to get multiple reservations if visitors want to visit more than one day. This scenario adds some additional complexity and burden to visitors as they plan their visits. However, timed entry and the one-day reservation period would allow for a larger inventory of reservations for each day. Visitors would have a higher likelihood of getting multiple one-day reservations, which, while requiring extra effort and cost to make these additional reservations, would allow visitors to access the park the days they want.

### **Arrival to the Park and Entrance Stations**

Under alternative C, the impacts related to the duration of the reservation period would be the same as described under alternative B. However, because the system would initially be in effect until 6:00 p.m. rather than 4:00 p.m. as in alternative B, visitors without reservations would have less time to visit the park and reduced options for spontaneous visits in the afternoon. These issues would result in additional adverse impacts on access and use for visitors.

For Hetch Hetchy, the adverse impacts would be similar as described under alternative C, except to a greater extent because of the longer reservation window that would decrease the amount of time visitors without reservations have to visit.

The addition of the timed-entry component adds complexity to the impact of a one-day reservation. Depending on the timed-entry window when visitors can arrive (e.g., if it is early enough in the day to see everything on a visitor's desired list of destinations and experiences), the one-day reservation may not have any adverse impact on a visitor's experience because the visitors would have enough time to do all they wanted. But for those with a later timed-entry arrival (e.g., in the afternoon), they may find they would not have enough time to do all the activities they planned for, and the one-day reservation may not support a meaningful and enjoyable visitor experience.

Timed entry distributes arrivals to the park throughout the day, resulting in shorter lines at entrance stations and less congestion during peak arrival times than under current management. This system could lead to better conditions entering the park, as wait times would be significantly shorter than under alternative A. However, timed entry adds an additional

requirement for how visitors access the park than under alternatives A. Visitors would have to time their arrival to the park more precisely, which could be more challenging to communicate, confusing to visitors, lead to more turnarounds at gates if visitors arrive outside their window, and would adversely affect the ability of visitors to arrive at the park any time they want to. For some visitors, the specific time window could be beneficial, as they would know exactly when they need to arrive at the park. Having a specific time frame for entrance could add stress to the experience of traveling to and arriving at the park, especially if visitors are traveling from far away and have delays. Further, when making their reservation, visitors may not get their preferred timed-entry window and may have to adjust their plans.

Timed-entry windows would be adaptively managed and may be adjusted by increasing or decreasing the window of duration for which the reservation is valid (e.g., expand from two hours to four hours). Changes like this would be made if monitoring indicates that the expanded window would still achieve desired conditions, including relatively short queues and waits to enter the park. Expanding the time window would be beneficial for those who want more flexibility for their arrival.

Under this alternative and based on best available data, it is likely that the number of vehicles accessing the park would change when the reservation system is in effect. Upon initial implementation and given the more active dispersal of use across the day, the number of vehicles entering the park could increase by up to 5% during peak summer season visitation (June–August), compared to average vehicle volumes for the same months in the five years preceding reservation pilots (2015–2019). When compared to the same months in 2023, this is more than a 15% change.<sup>21</sup> Vehicle volumes for the full managed season (April–October) are harder to project because the active management of vehicles is not proposed for weekdays during April, May, September, and October.

### **In-Park Experience**

As described under alternative B, while this alternative would adversely affect access *to* the park, it would improve conditions for visitors to travel around and access desired experiences *in* the park, when compared to current management.

Upon initial implementation of this alternative, it is expected that the number of vehicles at one time in the park would be reduced by 31% on the busiest days and reduced by 2% on average days. The impacts on the in-park experience described under alternative B would apply here as well, beneficially affecting the experience for all visitors.

However, the timed-entry component results in additional beneficial and adverse impacts on the visitor experience. For beneficial impacts, timed arrivals would spread out use and improve

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21. One of the current constraints on the system is the time it takes to process a high volume of vehicles entering the park with a range of valid reservations or other documentation that needs to be validated while still maintaining gate wait times that are consistent with desired conditions. Over time, the goal is to move to a technological solution that streamlines the entry validation process. If a fully contactless system could be implemented and all reservations were fully used from June through August, the number of vehicles that could be accommodated during this season could increase by up to 21% compared to similar months in 2015–2019, while still managing to identified capacities and within thresholds for gate waiting times and parking use.

the pulsing of visitors into the park, so as some visitors are leaving locations—notably Yosemite Valley—others are arriving.

Adverse impacts include limiting the amount of time that people have for specific activities. For example, big wall climbers with a later entry time may not have the time they need to complete their desired route and may need to make a different plan, or a cyclist wanting to do all of Tioga Road in a day may have to reevaluate their plans if they have a later arrival. Further, while spreading use out removes the surges, it also spreads use into times that were historically less busy, such as later in the day, during weekdays, or even into the winter months. This distribution would change the types of experiences at these times, where visitors who are seeking a quieter park might have more difficulty finding it during the reservation period.

### **Cumulative Impacts**

When paired with the impacts from past, present, and reasonably foreseeable future actions and impacts from actions common to all alternatives, alternative C would result in beneficial cumulative impacts on visitor access, use, and experience. Visitors would more easily be able to move through entrance stations, travel throughout the park, find parking at their desired destinations, use clean and functional visitor services, and choose where and how to spend their time during their visit.

## **Effects of Alternative D: Yosemite Valley Reservations – Timed Entry**

### **Trip Planning, Communication, and Information**

This alternative proposes the fewest changes to access for visitors because the reservation is geographically constrained only to Yosemite Valley. Those who are not planning to visit Yosemite Valley would not change how they plan their trips to the park and would access the park the same way as described under alternative A.

However, for those who do want to visit Yosemite Valley, they would need to plan for and obtain the Yosemite Valley reservation during peak times. They would need to understand times of the year when they need this reservation and when, how, and where to obtain it (e.g., Recreation.gov). Some visitors who arrive at the park without knowledge of the Yosemite Valley reservation requirement may get to Yosemite Valley checkpoint and be turned away, which would be an adverse impact on their experience. However, this impact would be lessened because they could still visit other areas of the park.

The Yosemite Valley reservation would be valid for only one day and would include required timed-entry windows. The combination of a one-day reservation and timed entry minimizes flexibility and freedom for visitors to arrive at Yosemite Valley when they want or to visit over multiple days, which is an adverse impact when compared to alternative A.

### **Arrival to the Park and Entrance Stations**

Because the reservation system in alternative D would only apply to the Yosemite Valley area, arrival to and experience at entrance stations would be the same as described under alternative A, including queues that can get long during peak times. Visitors have the flexibility to arrive to the park when they want to, as described under alternative A.

For those with Yosemite Valley reservations, they could also arrive at the park at any time but could only enter Yosemite Valley during their timed-entry window. If they have a later time, they would be able to enjoy other areas of the park before entering Yosemite Valley. To get into Yosemite Valley, they would pass through a checkpoint to validate their reservation. This alternative would build three booths at this checkpoint to keep traffic moving and decrease the likelihood of lines and waits, especially spilling into Southside Drive or Wawona Road. Park staff would proactively manage the line at Yosemite Valley to decrease the potential that visitors have to wait in two lines: the main entrance station and Yosemite Valley checkpoint.

### **In-Park Experience**

The Yosemite Valley reservation would allow reservation holders to access Yosemite Valley with their private vehicles. Those without a reservation could still access Yosemite Valley during peak hours either via a park-and-ride option (e.g., YARTs) or a commercially provided shuttle. While this could provide some inconvenience to those without a reservation, it would benefit their experience within Yosemite Valley because there would be fewer vehicles and less congestion.

Once reservation holders pass through the check point, they would experience less congestion along roadways, in parking areas, and at trailheads than under current management. There would also be greater access to services than under alternative A. Visitors would find parking more easily and would be able to use Yosemite Valley's shuttle system with fewer lines and waits.

If this alternative is implemented, use outside Yosemite Valley would likely reflect current conditions, as described under alternative A, or increase. The Yosemite Valley-only reservation could disperse use for non-reservation holders and those who have a later timed entry window for Yosemite Valley into other areas of the park. If visitor use disperses to areas outside Yosemite Valley but within the park, it is likely that there would be continued or increased crowding and congestion along roadways, in parking areas, and along trails. Areas of most concern for additional congestion are those that are highly congested under current management, including Glacier Point Road, Wawona, Tenaya Lake, Tuolumne Meadows, and Hetch Hetchy. These areas are easy to access and provide great views and opportunities. Locations with views of Yosemite Valley—Tunnel View, the Glacier Point viewpoint, and Olmsted—would also be expected to be in higher demand for users without a reservation who are seeking a peak into Yosemite Valley, again increasing congestion and diminishing the experience. Hetch Hetchy is a geographically constrained area, with fewer services and day-use opportunities than some areas of the park and thus has a more limited ability to accommodate higher use levels. More use and congestion in this area would adversely affect the visitor experience.

Yosemite Valley has the highest concentration of visitor facilities and services in the park, where visitors can find almost anything they may need for their visit. This includes grocery and restaurant options for visitors who may not have brought their own food and equipment shops for those who need additional gear for their experiences. For those who want or need these services but are unable to access Yosemite Valley, this would be an adverse effect on their experience.

Yosemite Valley is also the most bike-friendly area for visitors seeking that type of experience, and managing use in Yosemite Valley via the reservation system would remove vehicles from the road, leading to less traffic and reducing the risk of cycling along roadways. However, taking a shuttle into Yosemite Valley with a bike would be more challenging than with a private vehicle. Yosemite Valley also has the most accessible services, including paved trails and accessible facilities, and is the most dog-friendly area for those traveling with canine companions. For those who need or want access to these types of experiences, the requirement to have a reservation to access Yosemite Valley would be an adverse impact.

Alternative D would constrain access to the climbing routes in Yosemite Valley, where many of the most popular and famous Yosemite routes are located, due to timed entry, which would limit when people could access the area. However, climbers seeking to climb in other areas of the park, such as the big walls around Tuolumne Meadows, would be able to access those areas without a reservation requirement, which is the same scenario described under alternative A.

### **Cumulative Impacts**

When paired with the impacts of past, present, and reasonably foreseeable future actions and the impacts common to all action alternatives, alternative D would result in beneficial impacts on visitor access, use, and experience.

### **Comparative Conclusion across Alternatives**

The no-action alternative would result in cumulative adverse impacts on visitor access, use, and experience across all areas of the park due to long lines and waits at entrance stations and congestion along roadways, in parking areas, and at destinations. While this alternative provides the most spontaneous access into the park with lower levels of trip planning required, the ability to move through the park and get to desired destinations is restricted due to congestion throughout the park during peak times. Due to this congestion and the strain on facilities and services, recreational use and visitor experience would be negatively impacted as visitors crowd onto busy viewing platforms or run into chokepoints on trails.

Across alternatives B, C, and D, the implementation of a reservation system would change how visitors prepare for accessing the park and would reduce opportunities for spontaneous visitation by requiring that they obtain a reservation during peak times. The reservation system would also change when some visitors come to the park: visitors could choose to come during non-reservation times of the year, week, or day, or whenever they are able to get a reservation. While these alternatives may affect how and when visitors access the park, they provide beneficial impacts on use and experience once visitors are in the park due to better management of visitation patterns under the reservation system. Alternatives B and C would improve conditions parkwide by more directly managing the number of vehicles within the park to protect resources and provide a world-class visitor experience at Yosemite. The beneficial impacts on in-park experiences in alternative D would be focused on Yosemite Valley, and other areas of the park would continue to have the same adverse impacts as under the no-action alternative as it relates to the in-park experience.

The volume of visitors who could access the park *during* the reservation system varies among the action alternatives. Alternative D would provide access to the most visitors, as the volume of

visitation outside of Yosemite Valley would be determined by how many vehicles the entrance gates can process per day, and only Yosemite Valley would have reservations that affect volume. Between the two parkwide alternatives B and C, both options would accommodate a similar number of visitors during peak use times (where all popular parking areas are full). However, alternative C would allow for more opportunity for visitors to get reservations each day because it would spread out arrivals with the timed-entry requirement and only have to account for one day of visitation. Alternative B would have the fewest reservations available because visitors could arrive anytime and would have three days to use their reservation, which would lower the inventory of available reservations to account for reentry and for many visitors to all arrive during peak times of the day. Further, under all alternatives, park staff would responsively manage numbers of reservations to maximize opportunities for visitors to the extent practicable while protecting resources and visitor experiences.

## **SOCIOECONOMICS**

### **Current and Expected Future Condition of Socioeconomics If No Action Is Taken**

This section describes the current and expected future conditions related to the socioeconomic environment of Yosemite National Park and its surrounding communities. Partners, stakeholders, visitors, and other interested parties play an important role in helping to shape the management of national park units, and frequent collaboration is essential to planning. This socioeconomic analysis focuses on the following key elements:

- environmental justice/equitable access
- socioeconomics of gateway communities
- commercial use authorizations

The description of these elements is based on the best professional judgment of NPS staff, past and recent research, and scoping efforts. The current and expected future conditions of socioeconomics assumes that no action would be taken beyond what currently exists in the park's planning portfolio; therefore, the conditions assume no reservation system is in place at Yosemite National Park. Because a reservation system was implemented from 2020 to 2022 for various reasons (e.g., COVID-19 pandemic, construction, and road closures), data from 2019 and earlier are primarily used to describe current conditions of the resource. However, when available, data through 2023 are also used. A detailed discussion of past, present, and reasonably foreseeable future projects within the park and on adjacent lands contributing to the existing conditions and current trends for socioeconomics are described in more detail in appendix H. The description below provides an overview of how these ongoing and future actions would affect socioeconomics.

Under the no-action alternative, socioeconomics (i.e., equitable access, socioeconomics of gateway communities, and commercial use authorizations) would remain the same or similar to existing conditions, including trends and impacts from past, present, and reasonably foreseeable planned actions. Therefore, the affected environment and impacts of no action are the same and presented in the following section.



## Equitable Access and Environmental Justice

Equitable access and environmental justice are important socioeconomic considerations that include constraints or barriers to visitation that both visitors and non-visitors experience. Understanding these barriers can help inform NPS managers about how best to serve populations. In this case, equitable access means access to a “healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices” (NPS 2023).

Recent studies suggest that the top barriers for non-visitors to national parks are the travel distance from home to a national park, associated costs of travel, lack of transportation options, and the cost of entrance fees at national parks (ITRR et al. 2022; NPS 2019). Entrance fees at Yosemite National Park are \$35 per vehicle for a weekly pass and \$20 per person for those arriving without a vehicle (e.g., bicyclists, equestrians, hikers, and pedestrians). During the summers of 2020–2022 and 2024, visitors were required to have a reservation for most of the day, which added \$2 to the entrance fee for most visitors, with the exception of 2020. In addition to entrance and reservation fees, visitation to the park typically involves a personal or rental vehicle. Besides the initial travel costs, including flights and vehicle fuel, out-of-state visitors typically need to budget for lodging accommodations, food, and beverage, all of which contribute to the financial expense of visiting the park, which may be constraining for some potential visitors. Visitors who can afford to stay in the park also have significantly different experiences, as they can engage in park activities for longer periods, avoid long drives and wait times, and are more likely to find parking. In many cases, national park regions and gateway communities have higher-than-typical costs for services due to their remote location, increasing the cost of a trip.

Outside of travel costs, socioeconomic disparities exist among non-visitors and visitors to national parks and represent a barrier. Affluent Americans have been found to be three times more likely to visit national parks compared with under-resourced Americans (Taylor et al. 2011). Furthermore, research suggests that as income rises, so does the intention to visit a national park (ITRR et al. 2022). A Yosemite National Park visitor survey in 2023 found that a majority of visitors (60%) had an annual household income of \$100,000 or more (Otak 2024). Fewer than 15% of respondents reported a household income below the US 2023 median household income of \$74,580 (Otak 2024).

Nationwide, people of color represent a comparatively small fraction of national park visitors (NPS 2019; Scott and Lee 2018). A 2023 park visitor survey (Otak 2024) found that most respondents (94% overall) were not of Hispanic, Latino, or Spanish origin and self-identified as White (89%). Constraints to national park visitation among people of color have been found to include limited socioeconomic resources, economic inequality, cultural factors, and discrimination (Scott and Lee 2018). Historical, and in some cases current, discriminatory and exclusionary practices have prevented people of color from having formative experiences in national parks and created a belief that these places are culturally irrelevant (Scott and Lee 2018). Additionally, the lack of accessibility options for people with disabilities represents another barrier to visiting national parks (ITRR et al. 2022). Crowding at Yosemite National Park particularly burdens visitors who may require special accommodations, with staff unable to ensure equitable access. For example, accessible parking is not always available, and park

guidance to walk or hike to destinations or stand in a shuttle lines is impractical for visitors with physical limitations. Unless visitors can walk long distances or sit for several hours, there are very limited solutions for them to enjoy equitable access under the current management model. Lastly, long queues and temporary closures, discussed above in “Visitor Access, Use, and Experience,” further complicate access for visitors with disabilities, as well as Tribal nations, private landowners, and park residents, among others.

Other potential barriers discussed in the literature include the perception that national parks are too crowded, personal health issues, lack of connectivity in parks that prevents communication with friends and family, and concerns about crime or vandalism (ITRR et al. 2022). Additionally, a lack of knowledge was identified as another barrier; that is, not knowing what to do in national parks or not knowing enough about the national park system can hinder visitation (Mott 2016; NPS 2019). A lack of interest was also cited as a common barrier (NPS 2019). Lastly, language barriers present an obstacle to park visitation and interaction. The National Park Service (2019) found that Hispanic visitors were less likely than White non-Hispanic visitors or African American visitors to attend ranger-led activities because of language barriers, particularly for those who do not speak English as their first language.

Park managers are trying to mitigate these barriers through several initiatives. To make information more accessible and address language barriers, Yosemite National Park provides basic online bulletins in several different languages, including Chinese, French, German, Italian, Japanese, and Spanish. Additionally, reservation information during pilot reservation years and basic park information is available online in Spanish. Visitors who arrive at a park entrance gate without a reservation are provided a turnaround card (business card-sized) that describes the reservation system in both Spanish and English. To address travel cost barriers, the park has partnered with YARTS to provide access to the park, with routes starting in Sonora, Merced, Fresno, and Mammoth Lakes. Depending on available funds each year, Mariposa and Merced County residents can apply to receive one free round-trip ticket to ride YARTS into the park. Additionally, YARTS riders did not need a reservation to get into the park during the 2020–2022 and 2024 reservation periods. These activities strive to bridge the equity gap and encourage visitation from new audiences. This work will continue to be a priority for the park, and staff will explore new ways to overcome barriers to access the park.

The National Park Service has engaged in a nationwide effort to conduct socioeconomic monitoring across national park units. Increases in the cost of living can further exacerbate socioeconomic disparity among visitors. Additionally, increasing the cost of travel may hinder low-income populations from being able to afford to visit or take time off work, while high-income populations would continue to visit. Consequently, visitors to national parks may continue to be primarily White, older, and higher income populations, as currently seen across the national park system (Scott and Lee 2018).

### **Socioeconomics of Gateway Communities**

Gateway communities are defined by the National Park Service as the areas surrounding NPS sites, including the cities and towns where visitors typically stay and spend money while visiting (Flyr and Koontz 2023). The State of California defines gateway communities as those places that are “significantly affected economically, socially, or environmentally by planning and

management decisions regarding Federal lands . . .” (H.R. 1014 2004). Visitor expenditures generate and support economic activity within these local economies and can generate ripple effects throughout the economy (Flyr and Koontz 2023).

Yosemite National Park is surrounded by four counties: Mariposa, Madera, Tuolumne, and Mono Counties. The park contains lands that lie within three of these counties, and each offers a unique arrival experience to the park via different routes (Figure 9). These counties consist of the areas in which visitors typically stay and spend money while visiting the park and were selected as the socioeconomic study area. Within each county, several gateway communities are particularly affected by current conditions related to park visitation. Table 6 illustrates the scope for the socioeconomic analysis.

**Table 6. Geographic Scope for Socioeconomic Analysis, Including Counties and Primary Entrance Station**

<b>County</b>	<b>Primary Entrance to Yosemite National Park</b>
Madera	South Entrance
Mariposa	Arch Rock Entrance
Tuolumne	Big Oak Flat / Hetch Hetchy Entrance
Mono	Tioga Pass Entrance

In July 2019, the peak number of vehicles that accessed the park on a given day was 12,700 vehicles, while the average for the month was 9,400 vehicles. Throughout 2019, this was the second busiest year on record, with 4.4 million visitors spending an estimated \$547 million in gateway communities within 60 miles of the park while visiting (Thomas and Koontz 2020). Visitor spending related to Yosemite National Park supported a total of 6,815 jobs, \$244 million in labor income, \$415 million in value added, and \$688 million in economic output in local gateway economies in 2019 (Thomas and Koontz 2023). Value added refers to the contribution of NPS visitor spending to the gross domestic product of a regional economy, and economic output is a measure of the total estimated value of the production of goods and services supported by NPS visitor spending (Flyr and Koontz 2023). Over 96% of visitor spending came from nonlocal visitors in 2019, indicating how important tourism is to the economy (Flyr and Koontz 2023).

Travel spending associated with Yosemite National Park generally makes up about 30% of total direct travel spending across the four-county study area, indicating how integral the park is to the region’s economy (Dean Runyan Associates 2023; Flyr and Koontz 2023). Visitors travel to the four counties for several tourism-related experiences outside of Yosemite National Park, including to visit ski resorts, US Forest Service wilderness areas, and other federal, state, and local recreation areas. In 2019, \$1.8 billion in direct travel spending across the four counties contributed to nearly 17,000 jobs and generated more than \$85 million in local tax receipts (Dean Runyan Associates 2023). The following subsections highlight how each county benefits from travel spending.

### *Madera County*

Self-described as “California’s Gateway to Yosemite,” Madera County lies to the south of Yosemite National Park. Madera County reaches from the crest of the Sierra Nevada range to the San Joaquin River on the central valley floor. The majority of the county’s population and employment is concentrated along the Highway 99 corridor in the Central Valley. The primary economic drivers in Madera County include two state prisons, agricultural industry, and manufacturing industry (Madera County 2024). Because of its large geographic size and diversity of the economy, tourism associated with the park is not as significant a contributor to the county’s economy holistically. However, the eastern communities in the county, specifically Oakhurst and Bass Lake, have a stronger relationship with and are more dependent on Yosemite tourism.

Madera County had a population of approximately 163,000 in 2024, which is approximately an 8% increase since 2010 (World Population Review 2024). In 2019, \$355 million in direct travel spending across the county supported more than 43,000 travel industry jobs and generated nearly \$13 million in local tax receipts (Dean Runyan Associates 2023). The arts, entertainment, recreation, accommodation, and food service industries made up a small portion (3% in 2022) of the county’s total gross domestic product (BAE Urban Economics 2024), while travel and tourism accounted for 12% of the county’s total employment in 2022 (Headwaters Economics 2024). The town of Oakhurst is more reliant on Yosemite tourism, with the accommodation and food service industries employing the majority of the town’s industries, representing 19% of the workforce (Data USA 2024).

Visitation to the park has also influenced the accommodation industry throughout the county, with short-term rentals making up a growing share of accommodation options, while the number of hotel beds has also increased. In 2017, there were more than 300 short-term rentals<sup>22</sup> in Madera County, most of which were along Highway 41 towards the park (Romero 2017). As of 2019, the number increased to more than 500, and data indicate that short-term rentals account for 3% of the county’s housing stock (Lurle 2019; Fresno Documenters 2023). As the number of short-term rentals in the county has increased, county residents have found that there is a serious shortage of long-term rental options (Lurle 2019; Romero 2017). An increased presence of short-term rentals can impact the livability of areas and, therefore, reduce opportunities for economic growth if employees are unable to find housing.

### *Mariposa County*

Comprising the central portion of the park and extending along the western boundary, Mariposa County is one of the least-populated counties in California, with an estimated population of 16,600 in 2024 (World Population Review 2024). The county contains no incorporated cities, and its population has declined by more than 8% since 2010 (World Population Review 2024). The county’s primary recreation area/tourist attraction is Yosemite National Park, much of which lies within the county, including the developed areas of Yosemite Valley and Wawona. Other major recreation areas in Mariposa County include Stanislaus and

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22. Short-term rentals refer to self-contained residential apartments or houses that are rented for short periods of time. Hotel rooms are not included as a short-term rental.

Sierra National Forests and Bureau of Land Management recreation areas along the Merced River.

The county's economy largely depends on seasonal tourism, with all local businesses affected either directly or indirectly by visitor spending (Craft Consulting Group 2017). In 2019, visitors to the county spent \$467 million, which contributed to 4,100 jobs and nearly \$22 million in local tax receipts, representing more than a quarter of all taxable sales (Dean Runyan Associates 2023; PKF 2024). The arts, entertainment, recreation, accommodation, and food services industries accounted for 18% of Mariposa's gross domestic product in 2022 (BAE Urban Economics 2024), while travel and tourism represented 43% of the county's total employment (Headwaters Economics 2024). Travel and tourism employment, however, has experienced a long-term decline, shrinking by 11% from 2001 to 2022, while all other employment grew by 28% over the same time period (Headwaters Economics 2024). The leisure and hospitality sector has seen a recent rebound, adding 320 new jobs in 2022 (Caltrans 2023).

Similar to Madera County, Mariposa County has seen an increase in the number of hotel beds and short-term rentals on the market. In 2010, there were 243 short-term rentals, and this increased to 708 in 2020 and 874 in 2023, providing approximately 1,590 visitor beds and making up over 9% of the housing stock (Mariposa County 2024; BAE Urban Economics 2024). Other estimates put the number of short-term rentals in 2023 at more than 1,000 across the county (AirDNA 2024). Despite a decrease in population over the last decade, many county residents find that there is an insufficient supply of affordable housing due to the conversion of single-family residences to short-term rentals, along with an increase in property values (Kirkpatrick 2022). Short-term rentals contribute to the county's tax revenue, with more than a third of county operations funded by the transient occupancy tax during the 2019 California Fiscal Year (Petek 2021).

### *Mono County*

Mono County is one of the least-populated counties in California. The population of 12,412 in 2024 has seen an approximately 13% decline since 2010 (World Population Review 2024). Mono County is the gateway county for visitors entering through the eastern park entrance, which sits at roughly 10,000 feet, and is only open seasonally when conditions permit. Lodging, food, beverage, and other services are central to Mono County's economy, which is also bolstered by extensive natural environments and recreational opportunities. Mammoth Mountain Ski Area serves as a popular winter and summer destination, with other areas including June Lake and the John Muir and Ansel Adams Wilderness Areas in Inyo National Forest.

In 2019, visitors spent \$617 million across the county, which contributed to more than 6,000 jobs and \$41 million in local tax receipts (Dean Runyan Associates 2023). The arts, entertainment, recreation, accommodation, and food services industries accounted for 28% of Mono County's gross domestic product in 2022 (BAE Urban Economics 2024), while the travel and tourism industry employed a majority (55%) of the county's workforce (Headwaters Economics 2024). From 2001 to 2022, travel and tourism employment grew more than 50%, while all other employment sectors saw no change, indicating how important the industry is to the county (Headwaters Economics 2024). Additionally, the accommodations industry has

shifted over time, with short-term rentals becoming more prevalent across the county. The county had more than 3,300 short-term rentals in 2022 (AirDNA 2024). In response, the Mono County Board of Supervisors approved an urgency ordinance in May 2022, temporarily suspending county permitting of new nightly rental operations on all single-family residential units to preserve long-term residential housing stock (Mono County 2022). The number of short-term rentals then dropped to just over 3,000 in 2023 (AirDNA 2024). The temporary ordinance expired on April 29, 2024 (Mono County 2022).

### *Tuolumne County*

Tuolumne County has a population of 53,463 in 2024, which has declined by about 3% since 2010 (World Population Review 2024). The southeastern portion of Tuolumne County makes up northern Yosemite National Park, while the county also contains other federal, state, and local recreational areas, such as the Emigrant Wilderness, Stanislaus National Forest, and Dodge Ridge Ski Area. The bulk of Tuolumne County's economy is clustered on private lands along Highways 49 and 108, as well as centered in the town of Sonora. The largest industries in Tuolumne County are health care and social assistance, followed by accommodation and food services (Data USA 2024).

In 2019, visitors spent \$273 million across the county, which contributed to more than 2,300 jobs and \$9.5 million in local tax receipts (Dean Runyan Associates 2023). The arts, entertainment, recreation, accommodation, and food services industries accounted for 5% of Tuolumne County's gross domestic product in 2022 (BAE Urban Economics 2024), while the travel and tourism industry accounted for 23% of total employment (Headwaters Economics 2024). The travel and tourism industry is growing across the county, with a growth rate of 28% from 2001 to 2022, while all other industry employment shrank by 3% (Headwaters Economics 2024). The accommodations industry has been shifting across the county, with both the number of hotel beds and short-term rentals increasing. The growth of the short-term rental industry has impacted long-term housing options and neighborhood quality of life (Hansen 2024). More than 1,100 short-term rentals currently exist across the county (McCarthy 2024), and the county's board of supervisors announced that they will study the impacts of short-term rentals (Hansen 2024). The accommodation and food services industry is especially important for Groveland, representing the largest industry in the community and employing more than 40% of the town's workforce (Data USA 2024).

### *Climate Change and Natural Disasters*

Climate change could increase the frequency and severity of natural disasters such as wildfires, floods, or storms, which can indirectly and directly impact gateway community socioeconomics by influencing visitation patterns. In recent years, damages from events such as wildfires and associated smoke, rockslides, flooding, and significant snowfall have forced residents to evacuate or resulted in lost homes or businesses (Harp et al. 2008; Brown et al. 2024). Additionally, impacts from wildfires, such as increasing particulate levels, have been found to decrease visitation in Yosemite National Park (Brown et al. 2024). During such events, the park occasionally closes to ensure staff and visitor safety, which reduces visitation and visitor spending to the region until the park is able to reopen, thus impacting business operators. Brown and Jenkins (2023) found that fire-driven closures of certain park entrances pushed

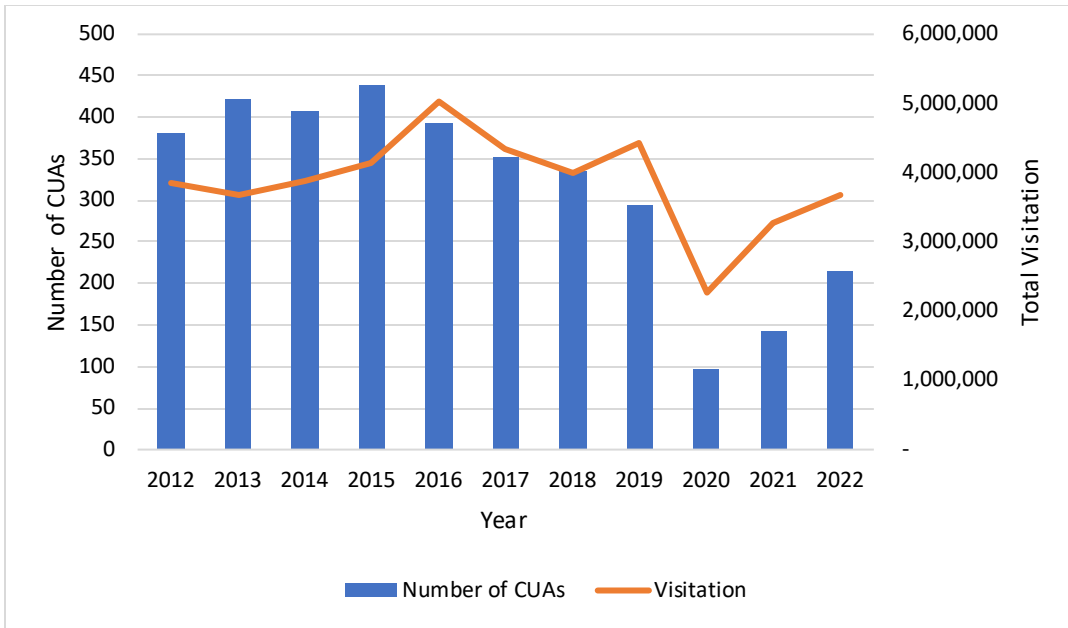
visitors to use other road corridors and different entrances than they planned. However, they found that visitors passing through gateway communities did not spend time there nor contribute significantly to tourism-dependent economies. These visitation changes only led to an increase in need-based spending in adjacent gateway communities such as buying gasoline (Brown and Jenkins 2023).

On the contrary, changes in weather patterns, such as extended warm weather seasons, may lead to increased visitation in shoulder seasons or nonpeak seasons, which can lead to economic growth. Low snowpack years, which are expected to become more common, have been found to correlate with earlier overnight visitation to the Yosemite Wilderness (Jenkins et al. 2023). Research on park visitation and climate change suggest that Yosemite may see up to a 23% increase in visitation during the peak season (i.e., three busiest contiguous months), up to a 25% increase in shoulder season visitation (two months before and two months after peak season), and up to a 53% increase in low season visitation (three contiguous months with the least visitation) based on warmer air temperature and potential visitation growth (Fisichelli et al. 2015). These shifts in visitation would likely have beneficial impacts on the economic growth of gateway communities.

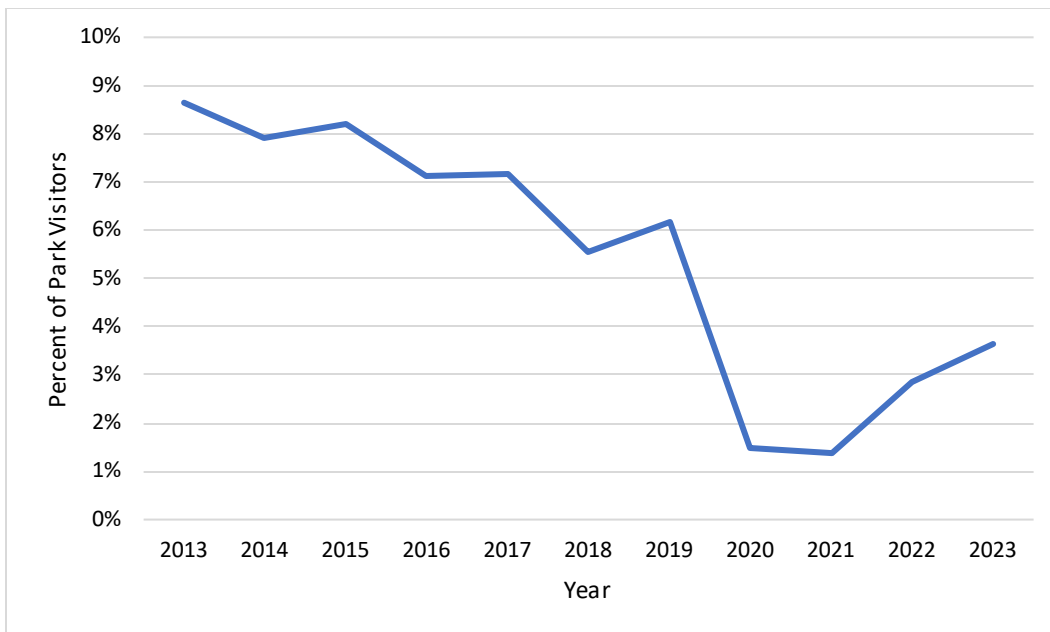
### **Commercial Use Authorizations**

Commercial services allow companies or individuals to conduct business in Yosemite National Park. An organization is considered a business if it provides goods, services, activities, or other things to the public using NPS lands. There are two main types of commercial services at the park: commercial use authorizations (CUAs) and concession contracts. Commercial use authorizations are typically 2-year permits, while concession contracts are multiyear contracts that range from 10 to 20 years. This section focuses on commercial use authorizations that operate in the park because the short-term permits (i.e., 2 years) are more likely to be impacted by management decisions compared to long-term (i.e., 10 to 20 years) contracts.

From 2012 to 2022, an average of 316 individual commercial use authorizations provided services to visitors in Yosemite National Park annually, with a high of 439 in 2014 and a low of 96 in 2020. During this time frame, the types of activities offered has not changed substantially—road-based commercial tours have consistently been the most popular service, followed by hiking, backpacking, and photography instruction services. The number of commercial use authorizations and the number of visitors served, however, have fluctuated widely (see Figure 8 and Figure 9). In 2013, 9% of park visitors were CUA clients. Since then, the total share of park visitors that are CUA clients steadily declined, with a low of 1% in 2021. However, 2020 and 2021 were heavily impacted by the COVID-19 pandemic, and the data should be interpreted with caution. Recently, this number has rebounded slightly, with 4% of all visitors in 2023 participating in a CUA service (see Figure 9). In 2023, concentrated use at areas of CUA interest, such as Glacier Point, resulted in a lack of parking lot spaces and forced CUA operators to turn around.



**FIGURE 8. NUMBER OF COMMERCIAL USE AUTHORIZATIONS OPERATING IN THE PARK (THOSE WITH AT LEAST ONE VISITOR EACH YEAR) AND TOTAL VISITATION BY YEAR. NOTE THAT 2020 AND 2021 WERE IMPACTED BY COVID-19.**



**FIGURE 9. PERCENT OF PARK VISITORS ENTERING THE PARK AS CUA CLIENTS (STATS REPORT VIEWER [NPS.GOV]). NOTE THAT CUA DATA ARE SELF-REPORTED BUT REPRESENT THE BEST AVAILABLE DATA.**

Under the no-action alternative, the numbers of visitors participating in guided activities would likely shift back to 2019 numbers, or about 6% of annual visitation, as CUA operators continue to recover from the COVID-19 pandemic. The number of commercial use authorizations operating in the park would also likely continue to rebound back to 2019 numbers. However, as described above, parking lots at destinations of particular interest, such as Mariposa Grove and



Glacier Point, would likely continue to fill up quickly and result in CUA operators having to turn around and disappoint visitors who used that service.

### **Effects of Actions Common to All Action Alternatives on Socioeconomics**

During initial implementation, the reservation system would impact socioeconomics (socioeconomics of gateway communities, equitable access, and environmental justice, and CUAs) only when it is in effect, namely on weekend days from mid-April through mid-October and daily from June through August, starting at 5:00 a.m. Across all alternatives, park managers may adjust components of the reservation system, such as the seasonality and time of day. If reservations are expanded further to the shoulder season (e.g., March and November) or to winter weekends, the impacts would be similar to what is described in this section but would occur for the time period and location of the expanded reservation system and apply in particular to winter recreationists.

In addition, park staff would implement a zoning scheme and associated desired conditions that offer a diverse range of visitor interests and preferences. The development of zones and desired conditions would benefit socioeconomics, as they provide clear direction for long-term management of the park and allow neighboring communities to better plan for related issues such as traffic flows and public services. In addition, park managers would identify and manage to visitor capacities by implementing the actions described in chapter 2. The identified capacities help ensure that desired conditions for experiences and resources are maintained, thus beneficially impacting socioeconomics through a higher-quality and more predictable visitor experience that ensures continued popularity of the park as a destination.

### **Equitable Access and Environmental Justice**

All of the action alternatives would require a reservation to access parts of or all of the park, which would pose a barrier to equitable access. The action alternatives would require an additional fee for visitors to book a reservation. While the system adds an additional cost to visitors, the amount of \$2 is nominal compared to the other associated costs of visiting national parks. Due to the timing of when reservations are released and how quickly they can sell out, potential visitors may need to acquire their reservations during work hours. Depending on their occupation, this may pose added difficulties for some visitors and may favor visitors who are retired or have flexibility with their occupations. Reservations would be made available using various time frames: 6–12 months, 7 days, and 1 day in advance. If there is remaining inventory after these releases, there would be day-of options. The next-day and day-of reservation options would provide more flexibility to potential visitors and likely improve equitable access. Park staff may transition to a lottery system for some or all booking windows, which would improve equitable access by ensuring that all visitors have a chance to obtain a reservation, not just those who are available when the reservation window opens. However, requiring a fee to enter the lottery would increase the costs for visitors, offsetting this benefit to equitable access.

The reservation system could lead to visitors “paying to play,” in which visitors could enter the park without a reservation by booking a CUA operator, reserving a campsite or wilderness permit, or by booking in-park lodging. “Paying-to-play” may have an adverse impact on economically disadvantaged visitors who cannot afford these types of reservations.

Additionally, these options to avoid the park entry reservation could lead to more competitive campsite reservations and wilderness permits, making them less available and increasing the economic disparity among visitors.

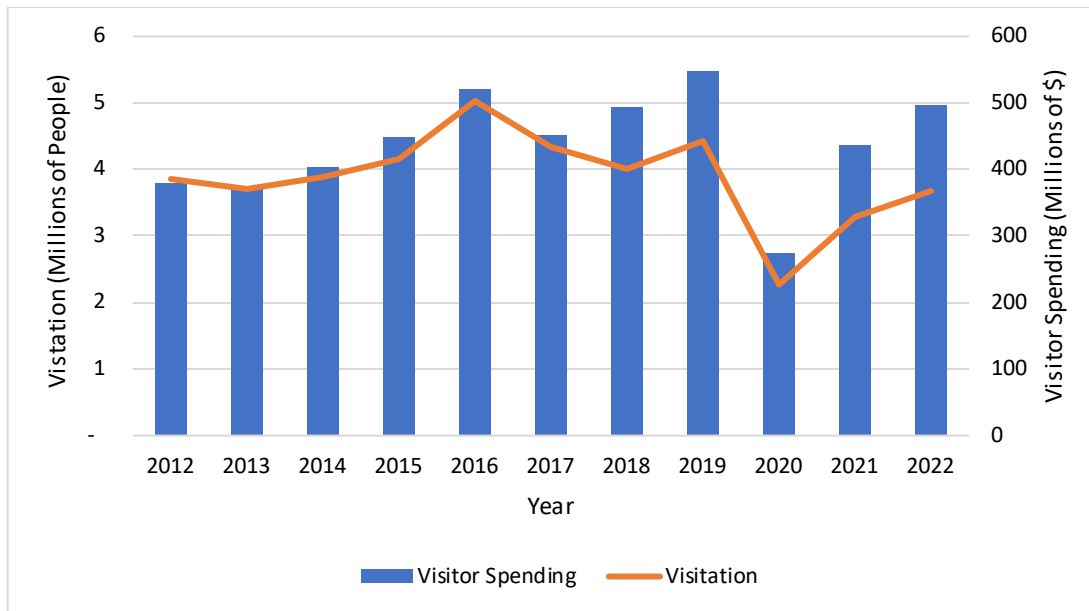
The reservation system may pose other barriers for potential visitors who do not have internet access or have language barriers. Online systems and phone options for booking may present some information only in English, which can deter potential visitors from trying to obtain a reservation. While some translation options exist, the majority of current services and platforms only exist in the English language. Similarly, navigating online platforms and applications requires institutional knowledge of the national park system, as well as the ability to navigate websites. Research has shown that national park reservation systems can impact visitor demographics (Rice et al. 2022; Rice and Phillips 2023). Specifically, Rice et al. (2022) found that an online reservation system for NPS campgrounds unintentionally excluded low-income and perhaps non-White would-be visitors. In contrast, a recent study at Arches National Park suggests that implementing a timed-entry system did not meaningfully impact visitor demographics such as race/ethnicity, education level, or income nor did it impact the proportion of first-time visitors (Miller et al. 2023). Based on current research and various findings, there is not conclusive evidence that a reservation system under the action alternatives would beneficially or adversely impact socioeconomic disparities in visitation. Yosemite National Park would likely continue to have visitors who are primarily White and with an income greater than \$100,000 (Otak 2024). An increase in public communications across the alternatives would help with visitor trip planning and would strive to reach a diverse public. Additionally, as discussed above in “Visitor Access, Use, and Experience,” a reservation system may offer some benefits to equitable access by reducing congestion and wait times for those with a reservation, especially for visitors requiring special needs accommodations and for those with unrestricted access, including traditionally associated Tribes and private landowners. The reservation system may also provide first-time visitors with an opportunity to experience Yosemite Valley in such a way as described in the desired conditions, which could improve equitable access (Creany et al. 2024).

### **Socioeconomics of Gateway Communities**

Visitation to the park has a direct and measurable impact on the gateway communities' economies. Each of the reservation systems within the action alternatives would spatially and temporally impact visitation and, therefore, may impact the socioeconomics of gateway communities. Visitor spending has generally followed parkwide visitation numbers from 2012 to 2022; however, the trend is not consistent (see Figure 10). During this period, visitation reached a high in 2016, while visitor spending peaked in 2019. Additionally, while visitation decreased from 2017 to 2018, visitor spending increased. Between 2020 and 2022, when the pilot reservation systems were in place and larger worldwide travel patterns were affected by COVID-19, visitation patterns changed during peak season, which likely impacted the socioeconomics of gateway communities. Visitor spending during 2020 and 2021 was quite low compared to 2019 levels, while visitor spending began to rebound in 2022.<sup>23</sup>

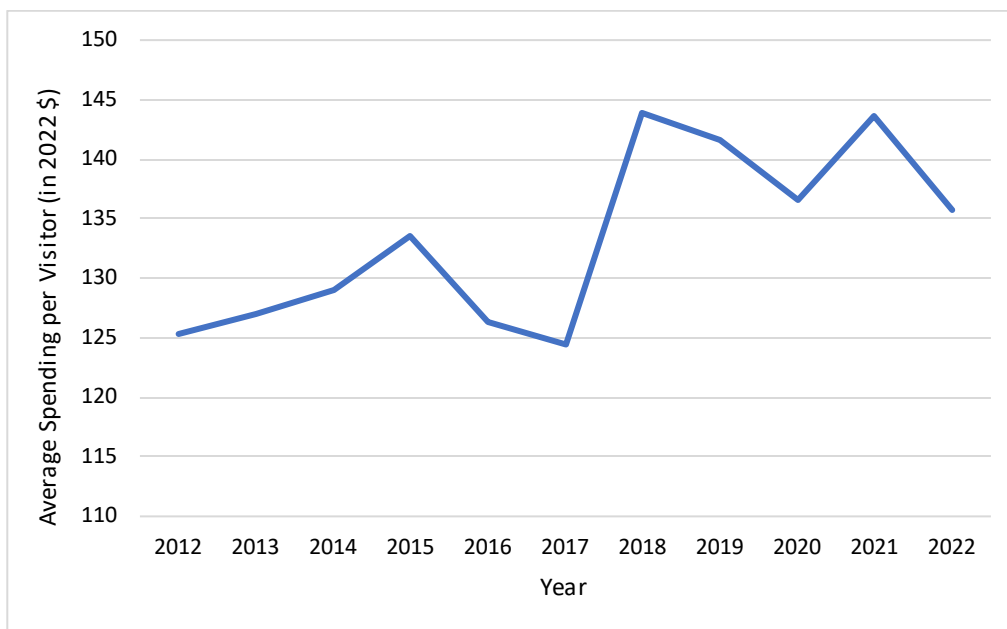
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23. At the time of writing this document, visitor spending data for 2023 was not available.



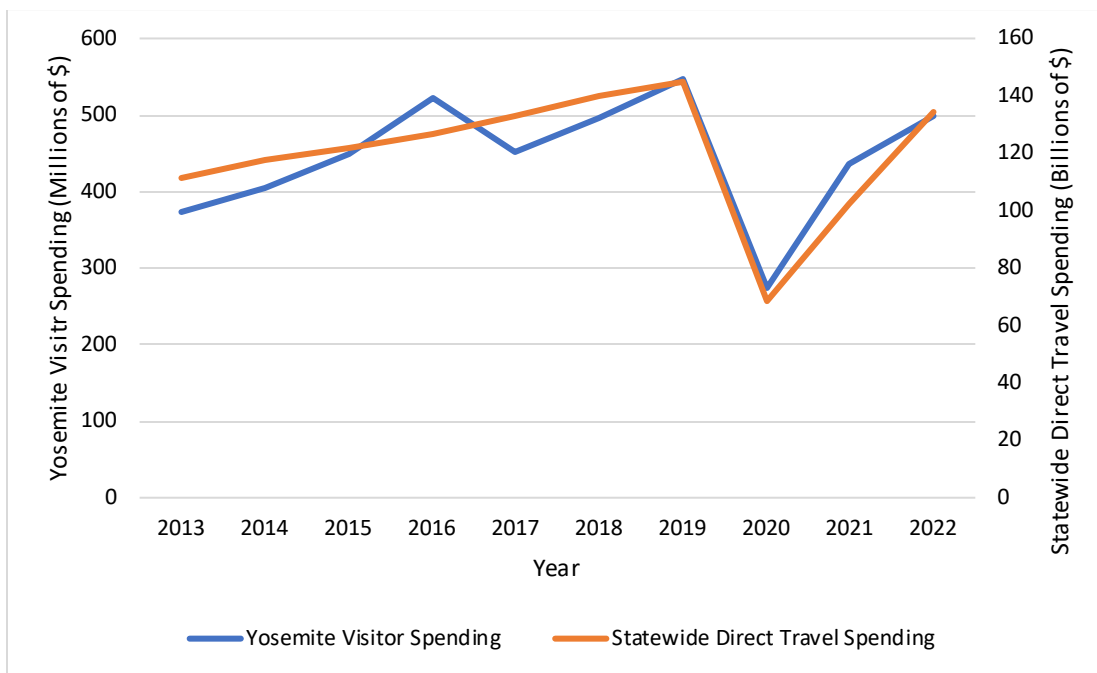
**FIGURE 10. VISITATION (MILLIONS) AND VISITOR SPENDING (MILLIONS) FROM 2012 TO 2022 (FLYR AND KOONTZ 2023; IRMA 2024). NOTE THAT VISITOR SPENDING IS NOT ADJUSTED FOR INFLATION AND IS IN THAT YEAR'S DOLLARS.**

Higher annual visitation does not guarantee more visitor spending, as visitor spending behaviors are influenced by several factors outside of NPS actions. For example, the average amount a single visitor spends in gateway communities has varied from 2012 to 2022 (Figure 11). On average, visitors spent the most in 2018 (non-reservation year) and 2021 (reservation year) in the gateway communities, spending about \$144 per visitor in 2022 dollars.

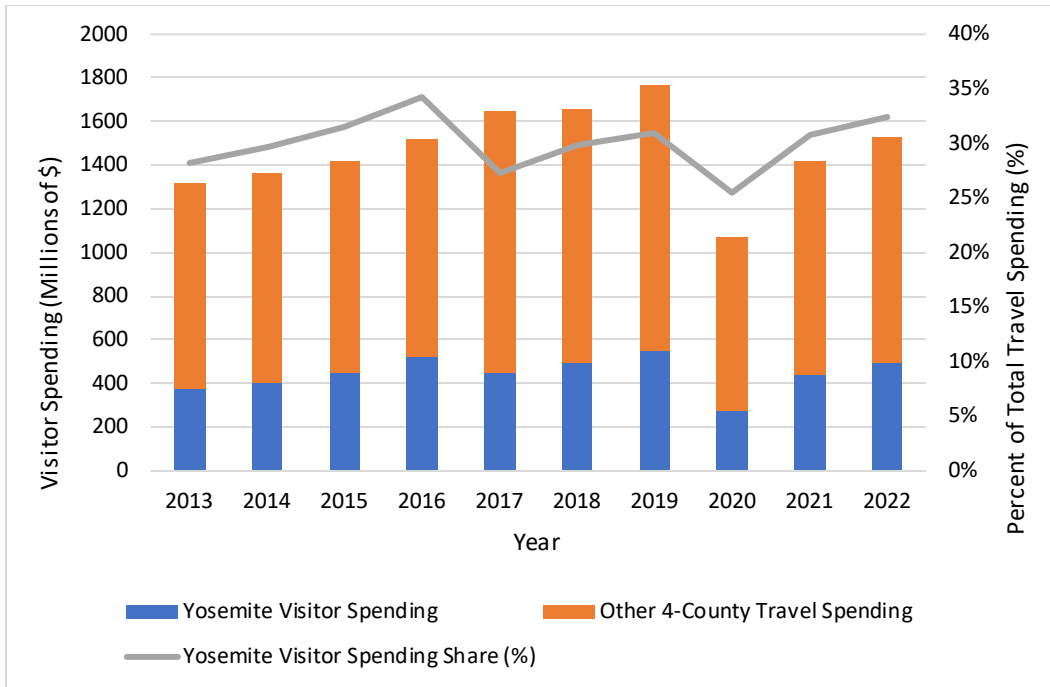


**FIGURE 11. AVERAGE SPENDING PER VISITOR (ANNUAL VISITOR SPENDING/ANNUAL VISITATION FROM 2012 TO 2022; DATA FROM FLYR AND KOONTZ 2023 AND IRMA 2024). NOTE THAT VISITOR SPENDING DATA ARE ADJUSTED FOR INFLATION AND IN 2022 DOLLARS (\$).**

Estimated visitor spending in surrounding communities of Yosemite (60-mile radius) associated with the park closely followed California statewide direct travel spending trends (see Figure 12) and travel spending trends across the four-county region (see Figure 13) before and during the implementation of the pilot reservation systems. Yosemite visitor spending reflects overall travel spending at a state and regional level at a relatively constant rate. At the regional level, Yosemite visitor spending has accounted for about 30% of all visitor spending in the 4-county area from 2013 to 2022, ranging from a high of 34% in 2016 to a low of 25% in 2020. Excluding 2020, spending related to park visitation during the reservation years, 2021 and 2022, comprised a similar share of total travel spending across the four-county region as the non-reservation years (2013–2019). This indicates that visitor spending associated with park visitation responds to the same factors as statewide and regional visitor spending trends, such as the reduction in spending during the COVID-19 pandemic. Therefore, external factors may have been a more important driver of visitor spending in gateway communities than the reservation systems over the last decade. Overall, the socioeconomics of gateway communities varies annually and is dependent on both park initiatives and larger trends outside of the park’s control.



**FIGURE 12. VISITOR SPENDING ASSOCIATED WITH YOSEMITE NATIONAL PARK (IN \$ MILLIONS) COMPARED TO DIRECT TRAVEL SPENDING ACROSS CALIFORNIA (IN \$ BILLIONS; DATA FROM DEAN RUNYAN ASSOCIATES 2023 AND FLYR AND KOONTZ 2023). NOTE THAT VISITOR SPENDING IS NOT ADJUSTED FOR INFLATION AND IS IN THAT YEAR’S DOLLARS.**



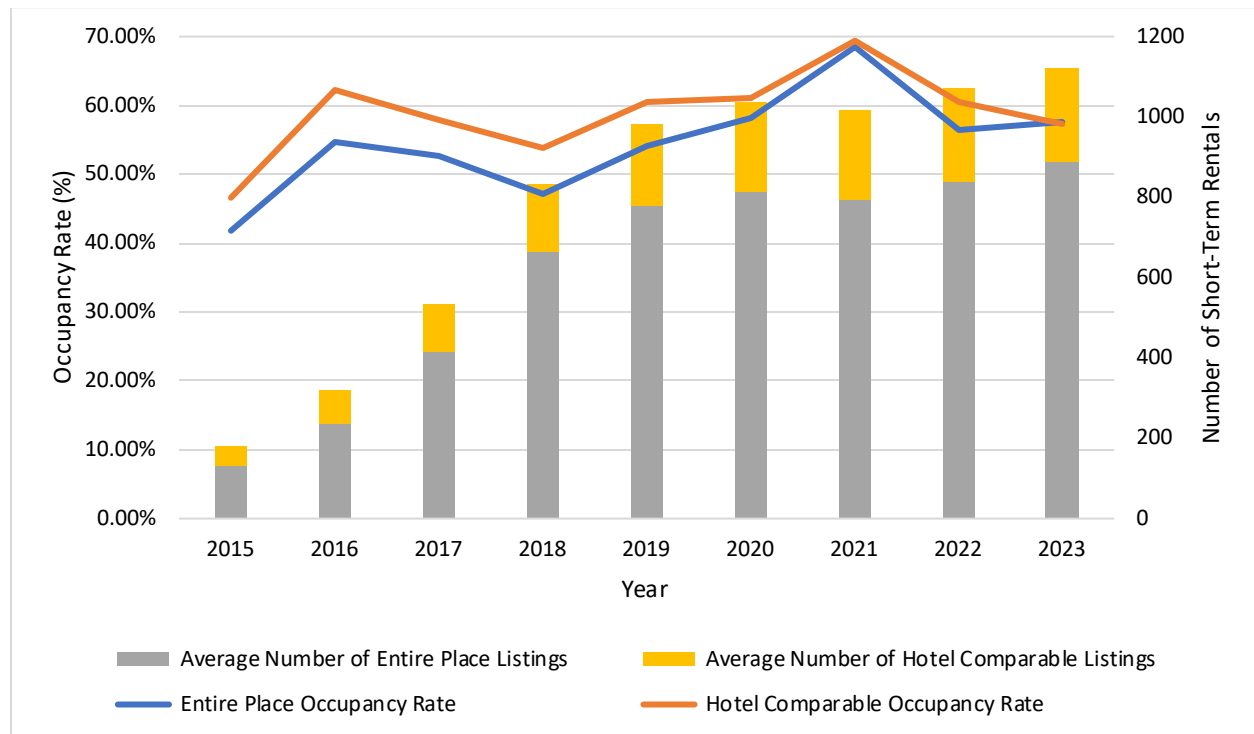
**FIGURE 13. VISITOR SPENDING ASSOCIATED WITH YOSEMITE NATIONAL PARK VISITS COMPARED TO OTHER DIRECT TRAVEL SPENDING ACROSS THE FOUR-COUNTY STUDY AREA. THE SHARE OF PARK-RELATED VISITOR SPENDING COMPARED TO TOTAL TRAVEL SPENDING ACROSS THE FOUR COUNTIES IS ALSO DISPLAYED (DEAN RUNYAN ASSOCIATES 2023; FLYR AND KOONTZ 2023).**

As described above in the visitor experience impact topic section, under each of the action alternatives, the peak accumulation of visitors at one time is expected to be reduced compared to the no-action alternative when reservations are in place every day (June–August) due to the proactive management of inbound vehicle volumes into Yosemite National Park. However, when looking across the reservation season when reservations are in place every day (June–August), there is the potential for visitation under each of the action alternatives to grow compared to the same months in 2019, if previously underutilized days and times (e.g., midweek) are fully utilized. Therefore, visitation during the reservation period may increase under the action alternatives compared to the no-action alternative and, subsequently, visitor spending could increase under the action alternatives compared to the no-action alternative. Additionally, more predictability under the reservation systems could provide businesses with an opportunity to better plan for visitation patterns and diversify business operations.

The accommodations industry specifically could be impacted by the action alternatives. Data for Mariposa County<sup>24</sup> show that from 2015 to 2023, the average number of short-term rentals has generally increased, while the average occupancy rate has fluctuated (see Figure 14). Notably, during the pilot reservation periods of 2020 to 2022, occupancy rates did not appear to decline, and, in fact, reached a peak of nearly 70% during the reservation year of 2021. With the action alternatives set to maintain visitation opportunities similar to the no-action alternative, it is

24. Mariposa County was selected due to data availability and the direct impact park initiatives have on lodging in the county.

anticipated that the accommodations industry will not face negative impacts. However, research suggest that the prevalence of short-term rentals can adversely affect occupancy and pricing for hotels, particularly for those at lower price points (BAE Urban Economics 2024). Consequently, if the number of short-term rentals continues to rise, hotels in the study region may experience challenges, but these changes are not directly affected by the reservation systems.



**FIGURE 14. THE AVERAGE NUMBER OF TOTAL AVAILABLE SHORT-TERM RENTAL LISTINGS, INCLUDING THE NUMBER OF ENTIRE PLACE LISTINGS AND THE NUMBER OF HOTEL COMPARABLE LISTINGS (DEFINED AS A STUDIO OR ONE-BEDROOM ENTIRE PLACE RENTAL THAT COMPETES DIRECTLY WITH HOTELS) AND THE AVERAGE OCCUPANCY RATE FOR EACH TYPE OF SHORT-TERM RENTAL LISTING IN MARIPOSA COUNTY BY YEAR (DATA FROM AIRDNA 2024).**

Gateway communities neighboring other national parks with reservation systems have experienced a range of socioeconomic impacts. For example, research on gateway communities outside of Rocky Mountain National Park found that a pilot timed-entry system did not hinder economic growth (Bioeconomics and RRC Associates 2023). Visitors to Rocky Mountain National Park during the reservation system instead had more confidence that they would be able to get into the park and find a parking spot, which led visitors to spend more time in the gateway community before and after their timed-entry reservation slot. Similarly, Arches National Park’s timed-entry system, instituted in 2022 as a pilot system, reduced congestion, and generally improved visitor experience (Hufham 2023). However, there is disagreement among business owners across Moab (Arches National Park’s gateway community) about how reservations systems impact business operations (Fisher 2023). The varying perceptions highlight the difficulty in showing a direct connection between reservation systems and local business revenue. Additionally, since the socioeconomics of gateway communities can fluctuate annually and are influenced by both park initiatives and broader travel trends beyond the park’s control, it remains challenging to definitively determine whether park reservation systems have a positive or negative effect on visitor spending.

## Commercial Use Authorizations

As described above under the no-action alternative, the number of CUA operators and the percent of visitors entering the park as CUA clients started to rebound in 2022 after lows in 2020 and 2021 due to the COVID-19 pandemic. These CUA numbers are expected to continue to increase under the action alternatives as CUA operators become more established. Additionally, visitors to Yosemite National Park may hire CUA operators to bypass the reservation system. Several websites have been promoting CUA operators as a “hack” to the reservation system (e.g., *The Manual 2024*; *The Adventure Tour 2024*; *PR Newswire 2024*), which could increase CUA numbers and business revenue. Additionally, under the action alternatives, reductions in congestion and crowding in Yosemite Valley could improve the CUA consumer experience. If CUA client numbers increase to levels inconsistent with visitor capacities, limits on activity type or use levels may be used, which would limit CUA growth if implemented.

## Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily

The daily entry reservation system for the entire park would have similar impacts on equitable access, as described above in the common to all action alternatives section. Alternative B restricts the number of reservations available to the public, adversely impacting equitable access. This could promote visitors to seek alternatives to the reservation system, such as getting campground and wilderness permits, which would increase the competition for reservations throughout the park and could further exacerbate equity concerns. However, the reservation system under alternative B would be in effect from 5:00 a.m. to 4:00 p.m., which would allow any visitor who could not get a reservation the opportunity to enter and experience the park for a portion of the day, lessening the adverse impact on equitable access.

As alternative B does not include a timed-entry component, concentrated visitation around peak times would likely continue; however, the management of this alternative would seek to improve conditions at entry gates compared to the no-action alternative. Visitors who have obtained a parkwide reservation would be able to enter the park during any time of day during the three-day window, which offsets some of the adverse impacts described above and in the common to all action alternatives analysis. Additionally, the afternoon arrival option provides visitors with more options and could enhance equitable access by allowing for more visitors throughout the day.

As noted in “Common to All Alternatives,” a reservation system alone does not directly alter visitor spending; therefore, a substantial change in visitor spending is not expected under this alternative. Upon implementation, this alternative may result in a 5% decrease in vehicle visitation from June–August when compared to the 5-year average (2015–2019) and a 5% increase when compared to 2023. These percent changes assume that previously underutilized days (e.g., midweek days) would be fully utilized. This potential change in visitation between June and August may impact visitor spending in the gateway communities, but the change is likely to be negligible. Alternative B consists of a three-day reservation, which could result in visitors spending more time in gateway communities and contributing to the economy for multiple days. A 2023 visitor survey found that 86% of visitors indicated they stayed or intended to stay in the local area, with 51% of these respondents indicating they were lodging outside Yosemite National Park in the local area (Otak 2024). Visitors spent an average of 3.7 nights in

lodging outside the park in the local area, with 51% spending more than three nights (Otak 2024). As a result, visitors would likely spend a similar amount of time in gateway communities under alternative B compared to the no-action alternative. Alternative B would be unlikely to adversely impact the socioeconomics of gateway communities when compared to the no-action alternative. Lastly, there would be no additional impacts on commercial services beyond what is described above in the common to all action alternatives section.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action section. Conditions in socioeconomics vary annually and are dependent on both park initiatives and larger trends outside of the park's control (e.g., cost of travel, knowledge of national parks). This alternative, when paired with ongoing actions and actions common to alternatives B, C, and D, would result in a mixture of beneficial and adverse impacts on socioeconomics. The reservation system introduces another barrier to visitation, impacting visitors differently based on specific obstacles they face (e.g., technology, flexibility, demographics, language, mobility). While a reservation system adversely impacts equitable access by creating another barrier for planning for and gaining access, the non-reservation window after 4:00 p.m. offsets this impact to some extent. Additionally, this alternative could beneficially impact the socioeconomics of gateway communities and CUA operators via the three-day reservation system, which aligns with current visitation patterns. Visitor spending and benefits to economic health of gateway communities would likely continue, as illustrated in Figure 11 and Figure 12. Overall, cumulative impacts are expected to be beneficial to socioeconomics, primarily due to past, ongoing, and reasonably foreseeable future actions, as impacts from alternative B would be negligible and current trends are expected to continue.

### **Effects of Alternative C: Parkwide Reservations – Timed Entry**

A timed-entry reservation system for the park would have similar impacts on equitable access as described above for the common to alternatives B, C, and D section. Additionally, the increase in opportunities to visit the park may offset the increased barriers to visit the park. As discussed in “Visitor Access, Use, and Experience,” under this alternative, the entrance gate queue wait time would decrease compared to the no-action alternative. This system would promote equitable access for those with reservations and cut down wait times for Tribal nations, private landowners, and nonrecreational pass-through drivers. Alleviating crowding and congestion could also benefit visitors requiring special needs accommodations by providing more opportunities to find accessible parking and reducing wait times. However, the reservation system would be in effect from 5:00 a.m. to 6:00 p.m., which provides visitors without a reservation limited opportunities to access the park, minimizing improvements to equitable access. Additionally, the timed-entry reservation system limits arrival time flexibility, which may create additional barriers to equitable access.

In addition to the impacts described under the common to all action alternatives section, a parkwide timed-entry reservation system may impact the socioeconomics of gateway communities. The timed-entry reservation system would maximize the opportunity to visit the park by redistributing visitation across the day and week while maintaining desired experiential and resource conditions. Compared to the five-year average numbers, this alternative may result in a visitation increase of approximately 5% between June and August, assuming previously



underutilized days are fully utilized, and a visitation increase of 15% when compared to 2023. Although visitation alone does not impact visitor spending, a potential visitation increase may lead to an increase in visitor spending in gateway communities. Additionally, the timed-entry component would make visits more consistent across the day and distribute visitation more evenly across the year. Dispersing visitor use could encourage visitors to spend more time in gateway communities, as seen with Rocky Mountain National Park's timed-entry system, in which visitors had increased confidence in accessing the park and finding parking and spent more time in nearby communities (Bioeconomics and RRC Associates 2023). However, the one-day timed-entry reservation system does not align with 2023 visitation trends, in which visitors spent an average of 3.7 nights in lodging outside Yosemite National Park in the local area, with a majority (51%) spending more than three nights (Otak 2024). If visitors are unable to obtain reservations for multiple days, the reservation system could change how long visitors stay in gateway communities, potentially limiting visitor spending growth associated with the increase in opportunities to visit the park provided by this alternative. Lastly, there would be no additional impacts on CUA operators, and impacts would be similar to what is described above in the common to all action alternatives section for commercial use authorizations.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action section. Conditions in socioeconomics vary annually and are dependent on both park initiatives and larger trends outside of the park's control (e.g., cost of travel). Actions under alternative C may increase the potential total number of visitors, which could result in beneficial cumulative impacts on the socioeconomics of gateway communities. However, the one-day reservation system may change how long visitors stay in gateway communities, offsetting these benefits. Additionally, the reservation system and limited non-reservation periods adversely impact equitable access. The reservation system introduces another barrier to visitation, impacting visitors differently based on specific obstacles they face (e.g., technology, flexibility, demographics, language, mobility). Benefits to accessible access include reductions in crowding and congestion, which could offset these adverse impacts. Commercial use authorization operators are expected to experience similar conditions under alternative C as they are currently experiencing. Overall, the cumulative impacts of alternative C are expected to be beneficial.

### **Effects of Alternative D: Yosemite Valley Reservations – Timed Entry**

A timed-entry reservation system for Yosemite Valley would have similar impacts on equitable access, as described above in the common to all action alternatives section. The reservation system would initially be in effect from 5:00 a.m. to 6:00 p.m., which provides visitors without a reservation limited opportunities to access Yosemite Valley. However, a Yosemite Valley-only timed-entry system only requires reservations for one portion of the park, with a large, non-reservation area providing access to those without reservations. Additionally, the park-and-ride opportunities (e.g., YARTS) under this action alternative would provide access to Yosemite Valley for visitors without a reservation to access Yosemite Valley. Non-reservation areas outside of Yosemite Valley may see an increase in visitation that could lead to congestion and long wait times and could impede visitors' ability to access the park for both those with and without a reservation. Long lines could also put a strain on visitors who require accessibility accommodations, Tribal nation access, private landowner access, and area residents passing

through for nonrecreational travel. Lastly, in non-reservation areas, park staff would manage high-demand areas with temporary area closures, if staffing allows, which could decrease opportunities for equitable access when implemented.

In addition to the impacts described under the common to all action alternatives, a timed-entry system for Yosemite Valley may impact the socioeconomics of gateway communities. Based on the reservation system type, there is not enough reliable data to accurately forecast anticipated changes in visitation numbers; however, it is likely that visitation under this alternative would be similar to the no-action alternative. As described in “Common to All Alternatives,” a reservation system alone does not directly alter visitor spending, and, therefore, a substantial change in visitor spending is not expected under this alternative. Since alternative D only applies to Yosemite Valley, the reservation system is not expected to change how long visitors stay in gateway communities.

Impacts on CUA operators would be similar to what is described above in the common to all action alternatives section. Additionally, visitor demand for high-use areas outside of Yosemite Valley, such as Glacier Point, Mariposa Grove, and Tuolumne Meadows, could increase, which could negatively impact CUA operations at those popular destinations with a lack of parking lot spaces, forcing CUA operators to turn around.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above under the no-action alternative. Conditions in socioeconomics vary annually and are dependent on both park initiatives and larger trends outside of the park’s control (e.g., cost of travel). This alternative, when paired with ongoing actions and actions common to alternatives B, C, and D, would result in a mixture of beneficial and adverse impacts on socioeconomics. The reservation system introduces another barrier to visitation, impacting visitors differently based on specific obstacles they face (e.g., technology, flexibility, demographics, language, mobility). While a reservation system adversely impacts equitable access by creating another barrier, the reservation system only applies to Yosemite Valley, providing visitors without a reservation access to most of the park. Additionally, under the alternative, crowding and congestion in Yosemite Valley could be reduced, offsetting adverse impacts on equitable access. The benefits to economic health of gateway communities would likely continue under this alternative. As a result, cumulative impacts on socioeconomics are expected to be negligible under alternative D and current trends are expected to continue.

### **Comparative Conclusion across Alternatives**

The no-action alternative would result in cumulative beneficial impacts on socioeconomics, including high levels of visitor spending, equitable access initiatives reducing barriers to access the park, and commercial use authorizations rebounding from lows in 2020 and 2021 due to the COVID 19 pandemic. These benefits would be reduced by adverse impacts such as concentrated visitor use and lengthy queues at entrance stations that contribute to barriers to equitable access. The no-action alternative, however, is the least-restrictive alternative, with the fewest barriers to enter the park, making it the most beneficial alternative for equitable access. The socioeconomics of gateway communities under the no-action alternative would most resemble conditions in 2019 and continue to fluctuate due to various factors outside of NPS management.

Across the action alternatives, the reservation systems would create an additional barrier to equitable access in addition to the continuation of adverse equitable access conditions described under the no-action alternative. The reservation system under alternative D would be the least adverse of the action alternatives because it only applies to Yosemite Valley, which makes most of the park available for those without a reservation. Alternative C would maximize the number of reservations available on a given day, encouraging an even distribution of visitors throughout the day and season, which would offset barriers associated with the reservation system. However, the timed-entry component under alternative C and alternative D would make arrival times inflexible, which creates an additional barrier to equitable access. Adverse impacts on equitable access would be greatest under alternative B due to the fewest available reservations among the alternatives. However, the reservation system under alternative B would end at 4:00 p.m., earlier than the other action alternatives, which would offset some adverse impacts on equitable access. Additionally, visitors would only need to obtain one reservation for a three-day period compared to the one-day reservations under the other action alternatives, further offsetting adverse impacts on equitable access. Park managers would mitigate barriers under each action alternative through technological improvements, partnerships, and other means.

Across alternatives B, C, and D, the implementation of a reservation system would provide beneficial impacts of varying degrees on the socioeconomics of gateway communities when compared to the no-action alternative. Although visitor spending is dependent on both park initiatives and larger national trends, visitation to the park has a direct impact on the gateway communities' economies. The action alternatives would reduce peak accumulation compared to the no-action alternative; however, when looking across the season when reservations are in place every day (June–August), there is the potential for visitation to grow compared to the same months in 2019. During initial implementation, alternative B may result in a 5% decrease in average visitation (June–August) when compared to the 5-year average (June–August 2015–2019) and a 5% increase compared to June–August 2023; alternative C may result in a visitation increase of 5% compared to the 5-year average and a 15% increase when compared to 2023. These percentage differences assume that previously underutilized days (e.g., weekdays) are fully utilized. Alternative D would likely resemble conditions under the no-action alternative. Under the action alternatives, the potential fluctuations in visitation across the reservation season would likely maintain the current socioeconomic conditions of gateway communities. Additionally, research suggests visitation during the non-reservation season has been increasing and is likely to continue to increase, which would continue to bolster visitor spending in gateway communities across all alternatives. Alternative C would result in the most potential for visitation to increase compared to the no-action alternative, which would likely result in the most beneficial socioeconomic impacts on gateway communities. In addition, CUA operators would continue to benefit from visitation and increased interest in commercial services across all the alternatives.

## SPECIAL STATUS SPECIES

### Current and Expected Future Condition of Special Status Species If No Action Is Taken

Wildlife found in the park include black bears, mountain lions, birds, coyotes, mule deer, beavers, marmots, bats, bobcats, frogs, toads, and snakes, among many other animals. Numerous state and federally listed species can also be found within the park (see appendix F for a full list of federally listed species with the potential to occur). Considering the potential impacts on all species, three select special status species were carried forward for analysis in this plan due to their vulnerability to visitor impacts and their potential to occur within the project area. The fisher (federally listed), California spotted owl (proposed federally listed), and great gray owl (state listed) have been carried forward for analysis in this plan. These species were carried forward for their vulnerability to changes in the number and timing of vehicles traveling through the park and because they are either listed or proposed for listing under the federal or state Endangered Species Act. Under the no-action alternative, projected increases in visitation overall suggest a corresponding increase in vehicular mortality risk during most times of the day, though the overall daily pattern of vehicle entry may remain constant. These species may be most impacted by changes to traffic patterns at dawn and dusk, as they have the highest potential to cross and forage along the roads at these times.

#### Fisher

Fishers (*Pekania pennanti*) found in the park are part of the Southern Sierra Nevada Distinct Population Segment, which has a federal listing status of endangered as of 2020. They are a member of the mustelid family, and proposed critical habitat for the species is located in the park. Their inherently small population size and genetic isolation from their northern counterpart in California have rendered the species susceptible to multiple threats, including habitat loss and degradation from development, drought, wildfire, poisoning from illegal toxicants, and vehicle collisions, among other threats. Currently, fishers in this distinct population segment are confronted with a number of unprecedented climate change effects, many of which can lead to extirpation in their range if specific habitat features are not protected for daily and reproductive use. Of importance, the immediate threat to the viability of this small population, estimated at 300–500 individuals, includes rapid habitat and genetic loss resulting from drought-induced tree mortality and catastrophic wildfires (NPS 2020). The range of the park's extant fisher population currently overlaps heavily with mixed conifer stands experiencing severe wildfire, and approximately 15% of fisher habitat loss has been attributed to these unnatural events (NPS 2020).

In Yosemite, fishers are generally present on the western slope of the Sierra in the mixed conifer forests, which are at the same elevation as most of the park's visitor infrastructure and roadways. GPS tracking research has documented fishers using the park from the southern boundary, east to the Sierra crest, and to the northern boundary of Yosemite with the Stanislaus National Forest. The fishers north of the Merced River represent the northernmost extent of the population and are particularly critical to the species' persistence in this distinct population segment. As part of current research and prior work done by the US Forest Service, dens have

been documented in the Wawona area, along the Highway 41 corridor, and in several areas north of the Merced River.

Vehicle collisions are a significant mortality factor for fishers, especially where moderately to heavily traveled roads traverse high-quality habitat such as along Wawona Road. Eleven road-killed fishers have been found in Yosemite National Park over the past two decades—nine on Highway 41, one on Glacier Point Road, and one on Big Oak Flat Road. As these are only the reported incidents, and many vehicle-wildlife collisions go unreported, the actual number of vehicle collisions is unknown. Males have larger home ranges than females and are therefore more likely to cross roads and be struck by vehicles. The species is more vulnerable to vehicle collisions during the reproductive period and the park's limited operating period from mid-March to approximately June 30. Based on the recent GPS tracking research conducted in the park, fishers frequently cross roads to forage or find new territories and have been found to be most active during crepuscular times (dusk and dawn), when there has historically been less traffic on park roads and less overall human disturbance in their habitat.

In addition to direct mortality from vehicles and other forms of direct and indirect effects of visitor use, the associated infrastructure and maintenance needed to facilitate visitors may also impact the fisher. Potential impacts such as habitat fragmentation, habitat loss, human-caused fires, pollution, and other forms of disturbance can result from visitor use and its related activities. Habitat fragmentation caused by the facilitation of visitor use comes in many forms. In Yosemite, about 117 miles and 24,570 acres of trails are in suitable fisher habitat. High-use frontcountry trails receive annual maintenance, which causes a minor level of disturbance to fishers as a result of increased noise and human presence. The park also has approximately 21,370 acres of roads, 27 acres of parking areas, and 91 acres of campgrounds in suitable fisher habitat that may be subject to the effects of annual maintenance and/or construction activities associated with the maintenance of roads, campgrounds, parking, and paved areas. In addition, park staff expect to continue major road rehabilitation projects (1–15 miles) per year within existing road corridors to facilitate visitation and the associated staffing. Tree hazard management may also have impacts on the fisher and is undertaken by the National Park Service and Pacific Gas and Electric for the safety of visitors and employees and to protect the supporting park infrastructure. Based on 2019 data, the Yosemite forestry crew removed about 1,670 dead conifers over 35 inches in diameter in areas under 8,000 feet in elevation. Of these trees, about 250 were removed during the denning season between March 1 and June 30, which could have direct impacts on denning fishers due to noise and vibrations of the felled trees. Yosemite has an estimated 1,080 structures in suitable fisher habitat associated with the communities of Wawona, Yosemite Valley, El Portal, and Hodgdon Meadows. Structures are also found in the smaller outposts of Glacier Point, Badger Pass Ski Area, Crane Flat, the Mariposa Grove of Giant Sequoias, and Tuolumne Meadows. These communities and the structures within each have a network of infrastructure and utilities that requires maintenance. These developed areas mainly serve as visitor infrastructure or staff facilities to support visitor use. The use and maintenance of all of these communities create noise, the potential for undesired wildfire, and pollution (e.g., air, water, light, and sound). In addition, these structures fragment habitat and have other effects that may impact fisher populations. In the future, as other stressors compound and interact with the effects of climate change, these impacts from visitor use may put even more strain on fisher populations in the park.

## California Spotted Owl

The California spotted owl (*Strix occidentalis occidentalis*) has a federal listing status of proposed threatened. The California spotted owl has declined as much as 50% throughout most of its range over the past 20 years. The primary threats to California spotted owls cited in the proposed rule include the impacts of increasing high-severity wildfire, tree mortality, and drought occurring in part from climate change.

Spotted owls are long lived (approximately 16–23 years), with high adult survival and low reproductive output (Seamans and Gutiérrez 2007; Gutiérrez et al. 2020). California spotted owls generally inhabit older forests that contain structural characteristics necessary for nesting, roosting, and foraging. Yosemite contains vital California spotted owl nesting habitat and may serve as an essential source population (Roberts 2019). California spotted owls nest on the western slope of the Sierra in Yosemite between 4,000 and 7,000 feet in elevation. Owls begin breeding mid-February and continue through approximately mid-September. Based on this seasonal cycle, projects with the potential to modify California spotted owl habitat have an established operating period from March 1 through August 31.

Indirect effects from activities related to visitors or visitor infrastructure might also impact the California spotted owl. Studies have found that heavy traffic noise can decrease reproduction in the northern spotted owls, for pairs within 328 feet of a road; therefore, California spotted owls would be expected to have a similar response (Hayward 2011). A greater effect was found in northern spotted owl males during the breeding season, when they have the highest energy demands as sole providers for themselves, their mate, and nestlings (Hayward et al. 2011). Other research has found that road and chainsaw noise did not affect California spotted owls' corticosterone levels, a measurable physical response to stress (Temple and Gutierrez 2003, 2004). Yosemite staff have documented several California spotted owl mortalities from vehicle strikes. As these are only the reported incidents, and many vehicle-wildlife collisions go unreported, the actual number of vehicle collisions is unknown. In general, vehicle collisions were found to be the largest human-caused mortality for owls, with immature fledglings at greater risk than adults (Hager 2009). California spotted owls are primarily nocturnal but are most active one to three hours after sunset and one to three hours before sunrise (Gutierrez et al. 1995). Increases in vehicle traffic during these hours could result in higher rates of mortality from vehicle strikes, particularly during the breeding season.

## Great Gray Owl

The great gray owl (*Strix nebulosa yosemitensis*) has a California State listing status of endangered. The genetically distinct subspecies is associated with montane meadow systems throughout the western slope of the Central Sierra Nevada. Great gray owls use these meadows as their primary place of foraging and roost in adjacent forests. They nest in broken top snags, usually less than 820 feet from the edge of a meadow. Most of the estimated 150 breeding adults in the Sierra Nevada live in Yosemite or the surrounding area. The park serves as a refuge of high-quality montane meadow habitat that is protected from the logging, grazing, and encroaching development that occurs on great gray owl habitat outside of the park. Due to this protection of high-quality nesting habitat, Yosemite may serve as a population source for owls

dispersing to the limits of their current range outside the park. It is vital to the recovery of these owls that Yosemite remain a refugium.

Although the park is a haven from the aforementioned habitat threats, vehicle collisions remain a serious threat to great gray owls in Yosemite and throughout their range. Since 2003, there have been 23 reported vehicle collisions with great gray owls in the greater Yosemite area. As these are only the reported incidents, and many vehicle-wildlife collisions go unreported, the actual number of vehicle collisions is unknown. With an estimated population of only 150 breeding adults and a relatively high number of vehicle collisions in the last two decades, vehicle collisions are considered the greatest threat to great gray owl. Nearly all major roadways in Yosemite go through or very near montane meadow complexes that are suitable habitat for great gray owl. Anecdotal observations suggest great gray owls might be particularly vulnerable to vehicle strikes, as they tend to use low hunting perches and lock their focus on to prey as they swoop across roadways, putting them in the path of collision with passing vehicles.

Yosemite biologists began a study in 2022 to better understand the fine-scale foraging movements of great gray owls near roadways. By affixing compact GPS transmitters to great gray owls that have territories near roadways in Yosemite, park staff are learning how owls use these risky areas. Thus far, transmitter data have revealed that tagged great gray owls spend much of their time foraging along roadsides including Big Oak Flat Road and Wawona Road in Yosemite, because these roads bisect suitable meadow habitat. For example, at Crane Flat, Highway 120 and Big Oak Flat Road bisect the meadow into four separate sections, all of which are used by great gray owls to forage.

### **Effects Analysis Methodology**

Under natural conditions, these three special status species (fisher, California spotted owl, and great gray owl) are all known to cross and forage along roads during their peak activity period at dusk and dawn. Therefore, this analysis focuses on the changes to traffic patterns at dawn and dusk because those are the times of day when there is the highest potential for their presence along road corridors. Park staff have observed more vehicular speeding in response to management-imposed time constraints during reservation systems that allow vehicles without reservations to enter the park in the early morning and late afternoon, outside the reservation period (e.g., 5:00 a.m.–4:00 p.m.). Increased vehicular speed during these times, which coincide with high-activity periods for these species, may increase their chances of road mortality; however, it is unknown whether the reduction in total number of vehicles at peak times and on peak days resulting from reservation systems may mitigate this threat. Another factor during these periods of pre- and post-reservation system entry is that light is low, and it is more difficult for visitors to see and avoid animals in the road corridor at these times of day. Additionally, the reservation period would overlap with the breeding period for these species, increasing the likelihood of road collisions during this more vulnerable life stage.

### **Effects of Actions Common to All Action Alternatives on Special Status Species**

Modifications to the Arch Rock, Big Oak Flat, and Hetch Hetchy entrance stations would not change existing footprints and would not, therefore, encroach upon habitat, resulting in no long-term impact on special status species. Mitigation measures would be taken to reduce short-

term impacts associated with construction noise and activity to protect special status species. The use of responsive management tools, including indicators and thresholds to modify the start times of time-limited reservation systems, is a critical management strategy to reduce risks of vehicular impacts on special status species as needed. Under each action alternative, there is potential for unintended consequences to special status species. Visitation patterns may change in unanticipated ways; therefore, park staff would continue monitoring impacts on special status species both inside and outside of Yosemite Valley.

### **Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily**

Under alternative B, the parkwide daily reservation system would be in effect from April through October from 5:00 a.m. to 4:00 p.m. A number of different pilots and projections influence the anticipated impact of traffic flow patterns on special status species. During the peak hours pilots (in summer 2022 and spring 2024), traffic counters recorded between 250 and 500 vehicles entering the park between midnight and 5:00 a.m. Similar days in non-reservation years (2019 and 2023) saw considerably less volume (less than 50 cars during the same time window). This approximately 5- to 10-fold increase in vehicle numbers over the no-action alternative between midnight and 5:00 a.m. was greatest on weekends and holidays but occurred to a lesser extent during weekdays. In addition, the actions proposed in alternative B have similar timing to the 2022 and 2024 pilots, and, therefore, it is assumed that traffic patterns would be similar to what was experienced during those periods. The anticipated predawn weekend increase in vehicles on road corridors is predicted to be between 200 and 300 cars and would likely result in increased risk of predawn vehicle collisions. The baseline number of cars for the 2022 and 2024 pilot datapoint is unknown, and, therefore, the potential magnitude of change is unclear. This time period (from midnight to 5:00 a.m.) overlaps with fisher, California spotted owl, and great gray owl peak activity periods, indicating that an overall increase in vehicle traffic could substantially increase the risk of predawn road mortalities.

Preliminary traffic forecasts also project a slight increase in vehicular traffic around 4:00 p.m., when the reservation window ends, when compared to the no-action alternative. After 4:00 p.m., the traffic projection under alternative B tracks closely with that of the no-action alternative. The reservation end time of 4:00 p.m. is not anticipated to significantly contribute increased risk for special status species road collisions during dusk.

Outside of pre- and post-reservation windows, the number of vehicles entering the park throughout the day would be substantially reduced in alignment with vehicle entry projections for these systems if the permit system is fully used. Under this alternative, total peak summer season visitation (June–August) would be lower by about 5% compared to average vehicle volumes for the same months in the five years preceding reservation pilots (2015–2019). When compared to the same months in 2023, this would be a 5% average increase. Under this model, the number of vehicles at one time in the park would be reduced by 36% from the busiest days and reduced by 10% from average days. Since the busy season number of vehicles entering the park throughout the day is decreased when compared to 2015–2019 and increased when compared to 2023, the potential impact on special status species from an increased risk of vehicle strikes is unknown but potentially minor. The overall decrease in vehicles at one time



has the potential to reduce the risk of road mortalities of special status species outside of dawn and dusk hours.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action alternative section. When paired with these impacts and impacts from actions common to all alternatives, including the use of indicators and thresholds to modify reservation system timing when needed to protect special status species, this alternative has the potential to result in adverse cumulative impacts on special status species because of ongoing loss of habitat and other effects that currently exclude California spotted owls and fishers from occupying most developed areas in Yosemite Valley.

### **Effects of Alternative C: Parkwide Reservations – Timed Entry**

Under alternative C, the parkwide timed-entry reservation system would be in effect from April through October from 5:00 a.m. to 6:00 p.m. A number of different pilots and projections influence the anticipated impact of traffic flow patterns on special status species. During the previous pilots (in summer 2022 and spring 2024), traffic counters recorded between 250 and 500 vehicles entering the park between midnight and 5:00 a.m. Similar days in non-reservation years (2019 and 2023) saw considerably less volume (less than 50 cars during the same time window). This approximately 5- to 10-fold increase in vehicle numbers over the no-action alternative between midnight and 5:00 a.m. was greatest on weekends and holidays but occurred to a lesser extent during weekdays. The actions proposed in alternative C have similar timing (i.e., seasons of the year and times of day) to the 2022 and 2024 pilots. However, data collected at other park units with timed-entry systems suggest that the incentive to enter the park before reservations start is lower when compared to a daily reservation system since the total number of reservations available is greater; therefore, visitors have an easier time acquiring a reservation and there is less incentive to arrive very early in the morning, particularly on weekends. Preliminary traffic forecasts project that an additional 100–200 cars (compared to similar time frames in the no-action alternative) would be on the roadways before the reservation window at 5:00 a.m., which is much less than an additional 250–500 vehicles. The baseline number of cars for the preliminary traffic forecasts is unknown, and, therefore, the potential magnitude of change is unclear. The overall increase in vehicle traffic under this alternative is, therefore, anticipated to be approximately less than a 5 to 10 times increase in magnitude between midnight and 5:00 a.m. over the no-action alternative. The anticipated weekend predawn increase in vehicles on road corridors would likely raise the risk of collisions with special status species. This time period (from midnight to 5:00 a.m.) overlaps with fisher, California spotted owl, and great gray owl peak activity periods, indicating that an overall increase in vehicle traffic could substantially increase the risk of predawn road mortalities.

Preliminary traffic forecasts also project approximately 200–300 additional cars on weekend days in vehicular traffic from 4:00 p.m. to 6:00 p.m. when compared to the no-action alternative. The traffic projection under alternative C does not begin to track closely with that of the no-action alternative until around 9:00 p.m. The reservation end time of 6:00 p.m. under alternative C can result in increased traffic on the roadways during dusk hours, thereby potentially increasing the risk of road collisions with special status species during that time. The reservation end time of 4:00 p.m. is not anticipated to significantly contribute to an increased

risk for special status species road collisions during dusk. The number of permits during the 4:00 p.m. to 6:00 p.m. time block could be adjusted if needed, as well as the start and end time of the reservation system overall, to reduce resource impacts as part of responsive management actions based on indicators and thresholds.

Outside of pre- and post-reservation windows, the number of vehicles entering the park could increase by up to 5% during peak summer season visitation (June–August) compared to average vehicle volumes for the same months in the five years preceding reservation pilots (2015–2019). When compared to the same months in 2023, this is more than a 15% increase. Under this model, the number of vehicles at one time in the park would be reduced by 31% on the busiest days and reduced by 2% on average days. The overall busy season increase in vehicles entering the park throughout the day would increase the risk for road mortalities of special status species, and the decrease in vehicles at one time has the potential to reduce the risk of road mortalities of special status species outside of dawn and dusk hours.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action alternative section. When paired with these impacts and impacts from actions common to all alternatives, including the use of indicators and thresholds to modify reservation system timing when needed to protect special status species, this alternative has the potential to result in adverse cumulative impacts on special status species because of ongoing loss of habitat and other effects that currently exclude California spotted owls and fishers from occupying most developed areas in Yosemite Valley.

### **Effects of Alternative D: Yosemite Valley Reservations – Timed Entry**

Under alternative D, the timed-entry reservation system to enter Yosemite Valley would be in effect from April through October from 5:00 a.m. to 6:00 p.m. Requiring visitors to arrive during their designated two-hour window of time to enter Yosemite Valley results in a parkwide traffic forecast with a very similar pattern to that of the no-action alternative. However, the traffic model does not explicitly predict traffic patterns in Yosemite Valley, which comprises a small amount of the park's total roadway network. Park staff observations of visitor use patterns under time-limited reservations suggest that pre-reservation system entry would occur. The incentive to enter Yosemite Valley without a reservation, together with reservation windows beginning as early as 5:00 a.m., would likely increase predawn park entry in Yosemite Valley relative to the no-action alternative. Additionally, the time constraint may encourage speeding through special status species habitat to reach Yosemite Valley on time. Conversely, traffic may even out while the reservation system is in place because visitors would redistribute throughout the park upon learning they cannot enter Yosemite Valley. Due to a combination of increased vehicular risk from changes to traffic patterns during dawn and dusk (even if mitigated by responsive management strategies) and the lack of a proactive tool to responsively manage vehicle numbers on roadways, special status species have the potential for adverse impacts resulting from an increased risk for vehicle strikes.

Under alternative D, infrastructure improvements would have a limited amount of ground disturbance totaling less than 0.5 acre. The separate reservation checkpoint station on Southside Drive would result in minor road widening, with an approximate ground disturbance of approximately 0.25 acre. In addition, updating the intersection of Southside Drive and Wawona

Road to a roundabout would result in approximately 0.22 acre of ground disturbance. The two groundbreaking areas would occur in an area with no known sightings or datapoints of the fisher and great gray owl or within proposed fisher critical habitat. This area occurs in modeled nesting habitat for the California spotted owl and about a mile from a known territory, with GPS transmitter points from a tagged owl within the action area. The area is also within modeled fisher denning habitat and within a mile of the GPS points from a collared fisher. Direct impacts on special status species from construction would be minimized if construction work could be completed outside of the March 1 to August 31 limited operating period, although that could be difficult to achieve, as construction windows are limited due to harsh wintertime conditions in the park. If the limited operating period could not be avoided, additional mitigation measures, such as restrictive construction hours, would be taken to reduce short-term impacts associated with construction to protect special status species. Additional compliance would need to occur as well. However, minor but long-term disturbance would likely occur as a result of the new traffic patterns and infrastructure, which may impact the ability for California spotted owls or fishers to use these areas in the West Valley into the future. This alternative may also cause additional and unforeseeable effects on special status species if visitation patterns shift into new areas of important habitat.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action alternative section. When paired with these impacts and impacts from actions common to all alternatives, including the use of indicators and thresholds to modify reservation system timing when needed to protect special status species, this alternative has the potential to result in adverse cumulative impacts on special status species because of ongoing loss of habitat and other effects that currently exclude California spotted owls and fishers from occupying most developed areas in Yosemite Valley.

### **Comparative Conclusion across Alternatives**

The no-action alternative would result in some risk to special status species being analyzed. While there would be no changes to the ground disturbance and no changes to traffic patterns during dawn and dusk, there would also be no restrictions on the number of vehicles entering the park. If visitation trends continued upwards, the risk of special status species vehicular deaths would increase in kind.

Alternative B would likely result in an increased potential (approximately 5- to 10-fold magnitude) for vehicular strikes to special status species during weekend predawn hours when compared to the no-action alternative, and no changes during dusk hours. Outside of pre- and post-reservation windows during the busy season, the 5% decrease in vehicles entering the park throughout the day (when compared to average vehicle volumes for the same months from 2015 to 2019) and 5% increase in vehicles entering the park throughout the day (when compared to 2023) would result in unknown but likely minor impacts on special status species. Outside of pre- and post-reservation windows during the busy season, the 36% decrease in vehicles at one time on busiest days and 10% decrease in vehicles at one time on average days has the potential to reduce road mortalities of special status species when compared to the no-action alternative. Risks under alternative B are mitigated by (1) responsive management strategies that use indicators and thresholds to modify reservation periods when needed to reduce risk and (2) a

decreased daily number of vehicles compared to high-use days in the no-action alternative and a decreased number of vehicles in the park during the summer season at peak times and/or on peak days. The overall risk under alternative B is likely similar to that of the no-action alternative.

Alternative C would likely result in an increased risk (approximately less than 5- to 10-fold magnitude) for vehicular strikes to special status species during weekend predawn hours when compared to the no-action alternative and a moderate increase in potential for vehicular strikes during dusk hours when compared to the no-action alternative. Outside of pre- and post-reservation windows during the busy season, the 5% increase in vehicles entering the park throughout the day (when compared to average vehicle volumes for the same months from 2015 to 2019) and 15% increase in vehicles entering the park throughout the day (when compared to 2023) would result in potentially greater impacts on special status species when compared to the no-action alternative and alternative B. Outside of pre- and post-reservation windows during the busy season, the 31% decrease in vehicles at one time on busiest days and 2% decrease in vehicles at one time on average days has the potential to reduce the risk of road mortalities of special status species, in a magnitude that is similar to that of alternative B. Risks under alternative C are mitigated by (1) responsive management strategies that use indicators and thresholds to modify reservation periods when needed to reduce risk and (2) decreased daily number of vehicles compared to the busiest days in the no-action alternative and decreased number of vehicles in the park during the summer season at peak times. The overall risk is likely similar to the no-action alternative.

Alternative D would likely result in increased predawn park entry in Yosemite Valley and, therefore, an increased potential for vehicular strikes to special status species in Yosemite Valley when compared to the no-action alternative and alternative C. Alternative D would also likely result in increased potential speeding within special status species habitat inside and outside of Yosemite Valley when compared to the no-action alternative and alternative C. While the quantities of these increases are unknown and limited by model projections, anticipated impacts are informed by park expertise. For example, this alternative may also impact special status species habitat in ways not currently observed if visitation patterns shift disturbances to new areas. Alternative D would also result in less than 0.5 acres of ground disturbance in areas modeled as fisher denning and California spotted owl nesting habitat. Lastly, this alternative adds additional negative cumulative effects on Yosemite Valley relative to the other alternatives. Risks under alternative D are mitigated by responsive management strategies that use indicators and thresholds to modify reservation periods when needed to reduce risk. Overall, alternative D is anticipated to result in a larger impact on special status species than any of the other alternatives.

## **WILDERNESS CHARACTER: OPPORTUNITIES FOR SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION**

Wilderness character is defined by both the tangible and intangible values that distinguish wilderness from all other lands. To analyze the impacts of potential actions on wilderness under the National Environmental Policy Act (NEPA), the National Park Service considers the five tangible qualities of wilderness: untrammeled quality, natural quality, undeveloped quality,

solitude or primitive and unconfined recreation quality, and other features of value quality. Definitions and details on all of these qualities can be found at <https://www.fs.usda.gov/research/treesearch/49721>.

In this plan, only one quality is carried forward for analysis: solitude or primitive and unconfined recreation quality. This quality was analyzed in detail because the strategies included in the alternatives include management actions that affect both solitude and unconfined recreation. The other four tangible qualities—untrammelled, natural, undeveloped, and other features of value—would not be impacted and, therefore, are not analyzed.

There are three parts to this quality: solitude, primitive recreation, and unconfined type of recreation. “Solitude” includes concepts of separation from other visitors, remoteness from the sights and sounds of modern civilization, and a sense of timeless inspiration when experiencing wilderness in a comprehensive way. “Primitive recreation” encompasses reliance on personal skills to experience wilderness such as traveling by nonmotorized and/or mechanized means and no reliance on facilities or outside help. “Unconfined type of recreation” encompasses attributes such as self-direction and the physical and mental challenges and personal growth associated with experiencing elements, including weather, wind patterns, and other aspects of the natural world with minimal assistance from the devices of modern civilization.

This quality is preserved or improved by management actions that reduce encounters with other people, minimize signs of modern civilization inside the wilderness, and provide outstanding opportunities for recreation in an environment that is relatively free from the encumbrances of modern society. In contrast, this quality is negatively impacted by NPS-provided recreation facilities, management restrictions on visitor behavior, and actions that increase encounters with other humans.

### **Current and Expected Future Condition of the Solitude or Primitive and Unconfined Recreation Quality If No Action Is Taken**

#### **Solitude**

Over 94% of the park is wilderness, providing visitors with many opportunities to hike, backpack, and horseback ride on more than 750 miles of trails or rock climb the big walls of Yosemite. Most visitors who embark on wilderness trails are day users, traveling only a few miles into wilderness before turning back for the day.

While the developed areas of the park, such as Yosemite Valley, roadways, parking areas, and lookouts, are not in wilderness, the boundary begins only a short distance from these areas.

Popular wilderness trails, such as the Yosemite Falls, John Muir, and the Mist Trails, start in Yosemite Valley, which has some of the most concentrated use in the park. Yosemite Valley and the adjacent wilderness is also home to some of the most popular climbing routes in the park.

Both trails and climbing routes can experience high levels of use into the wilderness boundary throughout the spring to fall season, adversely impacting opportunities for wilderness day users to experience solitude. While trails have group size limits to address solitude, wilderness trails currently do not have day-use quotas or capacities except for Half Dome, where the 2012 *Half Dome Trail Stewardship Plan and Environmental Assessment* outlined reservation and quota

requirements for visitors wanting to hike Half Dome. Popular wilderness trails, such as the Yosemite Falls, John Muir, and the Mist Trails, start in Yosemite Valley, which has some of the most concentrated use in the park. Yosemite Valley and the adjacent wilderness is also home to some of the most popular climbing routes in the park.

For many areas of the park, especially along Glacier Point and Tioga Roads, the park intentionally designed wilderness trailhead parking lot sizes to support the preservation of opportunities for solitude within wilderness. Park staff monitor encounter rates between visitors along trail corridors and have found that most encounters occur within the first mile or two of trails, adversely affecting opportunities for solitude within those areas. Opportunities still exist for visitors to experience solitude, but they might occur less often, or visitors may need to venture further into the wilderness to access them.

Overnight wilderness use includes quotas that manage the number of visitors per day in certain areas of the wilderness. These quotas were developed in the 1989 *Wilderness Management Plan* to support the preservation of outstanding opportunities for solitude, as required by the Wilderness Act. The quotas have been slightly adjusted over the years, as monitoring has found areas can accommodate more or less use, depending on monitoring results. These quotas benefit the preservation of providing outstanding opportunities for solitude in Yosemite's wilderness for overnight users.

Almost all the rock climbing in the park occurs in wilderness, including routes in Yosemite Valley, where the wilderness boundary starts at 4,200 vertical feet. The skillset and equipment required for this experience has kept use within manageable numbers and preserved the sense of solitude for climbers. Day climbing in Yosemite wilderness is by nature a less self-limiting activity. As such, crowding can be observed during peak climbing seasons of spring and fall in Yosemite Valley and summer in high country at popular climbs, which adversely impacts opportunities for solitude for climbers.

Four rehabilitation projects for water distribution or wastewater treatment areas are future foreseeable actions that could have temporary adverse impacts on opportunities for solitude due to the sights and sounds of modern development outside of wilderness during construction. While these projects occur outside of wilderness, their proximity to the wilderness boundary could impact the sense of solitude and separation from the modern world within wilderness if construction noises (e.g., engines, horns, beeping) are heard by those in wilderness. These actions would be planned and managed to minimize these impacts. Additionally, the Mist Trail Corridor Rehabilitation project would improve conditions along the Mist Trail to address visitor safety, resource management, and wilderness education concerns along the most heavily used trail in Yosemite. Portions of this trail are within wilderness, so improvements would preserve of opportunities for solitude.

### **Primitive and Unconfined Recreation**

Under current management, visitors do not need to obtain a reservation or permit for day use in wilderness except to hike the Half Dome Trail, where a permit system was piloted in 2010 and finalized in 2012 due to environmental wilderness character and safety concerns. Visitors can come and go to the park to access wilderness as they choose, unconfined from additional park management restrictions at entry gates. Visitors can plan ahead or decide last-minute to travel to

Yosemite to visit the wilderness, which beneficially impacts opportunities for primitive and unconfined recreation. However, because there are no management restrictions on the numbers of vehicles and people in the park, roadway traffic and full parking lots, which fill up early and stay full throughout the day, can make it difficult for users to get to trailheads and into the wilderness, adversely affecting opportunities for unconfined recreation. This has been reported by backpackers who have missed planned start times for their permitted trips.

While there are no formal restrictions (e.g., required permits) on day-use in wilderness, there are indirect management strategies implemented on an as-needed basis that can add temporary restrictions to wilderness access, including closures like when the Yosemite Valley shunt is in effect. These activities are only implemented when parking areas or roadways are so congested, they cannot accommodate additional use. These actions adversely, while temporary, affect unconfined recreation within the Yosemite wilderness. Further, popular wilderness trailhead lots fill early and stay full for most of the day, which limits access to the wilderness for those arriving later in the day or unable to find a spot, adversely affecting their opportunities for unconfined recreation.

Overnight use in wilderness requires wilderness permits year-round from the daily quota for each trailhead. Permit holders must go to a wilderness office to obtain their permit, which requires they plan ahead to get to the office during open hours and before they are planning to start their trip. These requirements adversely impact opportunities for primitive and unconfined recreation, as visitors must plan for and obtain a reservation to access overnight experiences in wilderness from spring to fall.

Permits are required for all overnight big wall climbs, though there are no quotas for numbers of permits available. The climbing permits provide NPS staff with a better understanding of use patterns and also give them the opportunity to engage with visitors to inform them of regulations regarding human waste, camping, and Leave No Trace principles. While there is no limitation on the number of permits, the requirement to obtain a permit and comply with park regulations are adverse impacts on opportunities for unconfined recreation in Yosemite's wilderness. Day-use climbing does not require a permit, though there are still guidelines and regulations that climbers are expected to follow.

The Yosemite wilderness has very minimal recreation facilities that impact primitive recreation, including some trail signs, bridges, a few railings, and restroom facilities. The action alternatives in this plan would not impact overnight use or recreation facilities in wilderness. However, the ongoing Mist Trail Corridor Rehabilitation project may include updates to the trail, including portions within wilderness, to improve experience, safety, and the primitive and unconfined experience.

## **Effects of Actions Common to All Action Alternatives**

### **Solitude**

Updated management zoning would define the distinction between wilderness and nonwilderness areas and the differences in management goals to better preserve opportunities of solitude and primitive and unconfined recreation in wilderness. Visitor capacities identified in this plan, while not identified for wilderness, considered the preservation of wilderness

quality as a key limiting attribute for the amounts and types of use the project area could accommodate, which would benefit this quality under all action alternatives.

### **Primitive and Unconfined Recreation**

Actions common to all action alternatives could adversely and beneficially impact opportunities for primitive and unconfined recreation. Temporary closures, implemented as needed, would add adverse impacts on access for the duration of the closure. If the reservation season or period is shortened, this would improve opportunities for unconfined recreation, but if it were to be expanded, this would adversely impact access to the wilderness.

### **Effects of Alternative B: Parkwide Reservations – Peak Hours, Daily**

#### **Solitude**

Under this alternative, opportunities for solitude in wilderness would be benefited by managing the amounts of use in the park during peak times, lowering the amount of people in wilderness and subsequently, encounters among them. However, the implementation of the reservation system would disperse more use to historically less-busy times in the wilderness, including the hours before and after the reservation period or days and seasons without reservations. This dispersal would decrease existing opportunities for solitude at those times and be an adverse impact.

### **Primitive and Unconfined Recreation**

Under alternative B, visitors to Yosemite would have more confinements to recreation in wilderness. The parkwide reservation system would add a management restriction for access to Yosemite's wilderness areas during peak times, which would adversely impact opportunities for primitive and unconfined recreation in the wilderness. For those with a daily entrance and who could arrive at any time, this adverse impact would be less than for those who have a reservation where they can only enter the park after 12:00 p.m.

Recreation would be confined for all areas of the wilderness from 5:00 a.m. to 4:00 p.m. on days when the reservation system is implemented. Only visitors with a reservation would be able to enter and access wilderness. Visitors who do not get a reservation or wilderness permit would be confined to arrive before 5:00 a.m. or after 4:00 p.m. or visit during a time when reservations are not required. This limitation is an overall adverse impact on primitive and unconfined recreation. However, managing the number of visitors in the park during peak times would remove existing barriers to accessing the wilderness due to overcrowding and full parking areas because visitors with reservations would be more likely to find parking at trailheads and be able to enter the wilderness, which would lessen the adverse impact of the requirement to have a reservation.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions, when paired with the impacts from alternative B, would have additional short-term adverse effects on opportunities for solitude while mechanized uses occur proximate to wilderness areas. There would be no additional effects on the primitive or unconfined recreation portion of this quality.



## **Effects of Alternative C: Parkwide Reservations – Timed Entry**

### **Solitude**

The impacts on opportunities for solitude under alternative C are the same as described under alternative B.

### **Primitive and Unconfined Recreation**

The impacts on primitive and unconfined recreation under alternative C are similar to those described under alternative B but would be more adverse when compared to alternative A. Timed entry during the reservation period, which would be a requirement for all reservations, would further confine access to a specific time of the day when visitors could begin a wilderness experiences.

Additionally, the reservation period is longer under alternative C, increasing the adverse impacts of the reservation system's confinement to recreation in wilderness. Visitors without reservations would have fewer hours available for unconfined recreation in wilderness.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions, when paired with the impacts from alternative C, would have additional short-term adverse effects on opportunities for solitude while mechanized uses occur proximate to wilderness areas. There would be no additional effects on the primitive or unconfined recreation portion of this quality.

## **Effects of Alternative D: Yosemite Valley Reservations – Timed Entry**

### **Solitude**

For wilderness areas accessed through Yosemite Valley, there could be some beneficial impacts on opportunities for solitude under alternative D by managing the amounts of use in Yosemite Valley during peak times to lower the number of people and encounters in wilderness. However, the number of visitors departing from trails in Yosemite Valley is not expected to be significantly less than under current management, and in fact, the reservation requirement for Yosemite Valley could increase use on trails that lead *into* Yosemite Valley, increasing encounters and negatively affecting opportunities for solitude.

For wilderness areas accessed outside of Yosemite Valley, adverse impacts on opportunities for solitude would be the same as described under alternative A or could be worse if more use is dispersed into wilderness areas from visitors who do not have a Yosemite Valley reservation.

### **Primitive and Unconfined Recreation**

Alternative D would have adverse impacts on opportunities for primitive and unconfined recreation in wilderness during reservation hours, but this confinement would be geographically constrained to Yosemite Valley. This impact would be lessened for hikers because they would still be able to access many of these areas via trailheads outside of Yosemite Valley, but this would not be the case of rock climbers seeking to climb routes that start within Yosemite Valley. These climbers would need to obtain a reservation or use public transportation or a commercial operator to access Yosemite Valley, which could be difficult if they are carrying heavy gear into

the park. Further, the timed-entry aspect of Yosemite Valley reservation and the 6:00 p.m. post-reservation period would further constrain access for climbers because they may not have enough time or daylight to complete the routes they had planned to, which is an adverse impact on this quality.

Outside of Yosemite Valley, access to primitive and unconfined recreation would be the same as described under alternative A, and the volume of use would continue to be high—if not higher—than current management, so visitors would continue to have difficulty accessing the wilderness even if they are inside the park.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions, when paired with the impacts from alternative D, would not have additional effects on opportunities for solitude. The Mist Trail Corridor Rehabilitation project would benefit this quality by improve opportunities for solitude and primitive and unconfined recreation.

### **Comparative Conclusion across Alternatives**

Across all action alternatives, visitors would continue to have opportunities for solitude or primitive and unconfined recreation, but the seasons, days, and hours would be different than under alternative A. Each alternative would have both beneficial and adverse impacts on this quality. Alternative A would most adversely impact opportunities for solitude while most benefiting opportunities for primitive and unconfined recreation because there is no reservation requirement. Both alternatives B and C would benefit opportunities for solitude parkwide by managing volumes of use and improve access to the wilderness once inside the park, but this would be accomplished by additional confinement to recreation during peak hours when a parkwide reservation is required. Timed entry and the longer reservation period, until 6:00 p.m. in alternative C, would have additional adverse impacts on this quality compared to alternative B.

Alternative D would have the most adverse impacts on this quality when compared to the other action alternatives. While there would be some beneficial impacts on opportunities for solitude in wilderness areas surrounding Yosemite Valley, areas outside of Yosemite Valley would continue to experience high levels of use, which adversely impact opportunities for solitude. Additionally, alternative D would most adversely affect rock climbing access to wilderness areas in Yosemite Valley. The timed-entry component of access to Yosemite Valley would mean that climbers would not be able to start their climbs when they want or when conditions are best.

### **YOSEMITE VALLEY HISTORIC DISTRICT**

Under the no-action alternative, the condition of the cultural landscape and Yosemite Valley Historic District would remain the same or similar to existing conditions, including trends and impacts from past, present, and reasonably foreseeable planned actions. Therefore, the affected environment and impacts of no action are the same and presented in the following section.

## **Current and Expected Future Condition of the Yosemite Valley Historic District If No Action Is Taken**

The Yosemite Valley Historic District is dominated by the surrounding vertical granite cliffs, meandering Merced River, meadows, and forested areas. The built environment responds to the natural features and includes the roads, buildings, and infrastructure within and around the geographic constraints. Past actions within the last 10 years relevant to the current project include various road, circulation, campground expansion, and parking changes, which individually have had some adverse effects on the historic district (e.g., Welcome Center and Plaza development, Concessioner General Office removal). Together, these changes have improved the flow of traffic through Yosemite Valley, though navigation is less intuitive via circuitous routes. The changes succeed in eliminating the pedestrian crossings and improving efficiency at intersections, which were both pinch points to traffic flow. Natural and scenic attributes of the historic district have been enhanced through large-scale restoration actions and fuel management programs. Ongoing condition assessments monitor the impacts on individual contributing buildings and structures in the historic district. Future actions in the 2014 Merced River Plan that will be implemented by 2034 include an overall increase in overnight campsites and the construction of permanent employee housing.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action section. There would be no additional direct, indirect, or cumulative impacts on the Yosemite Valley Historic District under alternatives B and C beyond what is described in that section. Overall, cumulative impacts are expected to be not adverse on the Yosemite Valley Historic District

### **Effects of Actions under Alternatives B and C**

The actions described in alternatives B (peak hours) and C (timed entry) would not alter, either beneficially or adversely, the current impacts on the historic spatial organization, circulation patterns, or natural features associated with the Yosemite Valley Historic District.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the current and expected future conditions section. There would be no additional direct or indirect, or cumulative impacts on the Yosemite Valley Historic District under alternatives B and C beyond what is described in that section. Overall, cumulative impacts are expected to be adverse on the Yosemite Valley Historic District. While no impacts from alternatives B and C would take place, the adverse impacts caused by current trends are expected to continue.

### **Effects of Alternative D Yosemite Valley Reservations – Timed Entry**

Under alternative D, changes to both the roadway and circulation in the southwestern portion of Yosemite Valley would be made to allow for traffic to travel along Southside Drive without needing to travel to the El Capitan Crossover. These changes to Southside Drive and the intersection of Wawona Road and Southside Drive are described in chapter 2.

Changes to the historic district's circulation patterns and road alignments are required under alternative D. Road-widening work would be required to accommodate the footprint of the new

checkpoint, resulting in adverse impacts on the historic arrival experience and the view from Southside Drive to El Capitan. At the intersection of Southside Drive and Wawona Road, a roundabout or three-way intersection would be installed to allow visitors to travel from Wawona Road to El Portal Road and Big Oak Flat Road (and vice versa) without requiring travel through Yosemite Valley.

While the Wawona Road alignment at the intersection is not included as a contributing feature of the Yosemite Valley Historic District, the changes to the circulation patterns and road alignments along Southside Drive would represent an adverse effect on the cultural landscape.

**Cumulative Impacts.** Existing trends, including climate-related impacts, would continue. In addition, changes in the historic arrival experience and viewsheds, as well as modifications to historic circulation patterns and road alignments, would be implemented. Taken in total, actions under alternative D would result in adverse cumulative impacts on the Yosemite Valley Historic District.

### **Comparative Conclusion across Alternatives**

The no-action alternative would result in continued adverse impacts on the Yosemite Valley Historic District, including climate-related impacts. These impacts would be expected to continue under alternatives B, C, and D. Alternatives B and C would not have any direct impacts on the historic qualities of the district.

While the impacts associated with the no-action alternative would be expected to be adverse, they would be less severe than the impacts associated with alternative D. Under this alternative, the construction of new infrastructure that changes both the footprint and circulation of the Yosemite Valley roadways would introduce multiple adverse impacts on the Yosemite Valley Historic District, including impacts on the district's historic arrival experience and views and changes to historic road alignments and circulation patterns. These impacts, when combined with the impacts already taking place, would result in the most substantial changes to the Yosemite Valley Historic District and the most adverse impacts in this area.

## **ARCHEOLOGICAL RESOURCES**

### **Current and Expected Future Condition of Archeological Resources If No Action Is Taken**

Past actions include strategies to address localized concerns on archeological resources from heavily used formal and informal trails, as well as illegal campfires, graffiti, trampling, stock trail use, parking, and rock climbing. The *Merced River Plan* (2014) proposed improving resource condition by diverting foot traffic around archeological sites, removing informal trails, and formalizing river and meadow access points, using noninvasive restoration techniques wherever possible. The plan went on to note that many of the plan's actions related to ecological restoration, such as delineating roadside parking, would also help protect archeological resources by diverting foot traffic away from known sites and toward less sensitive areas. In addition, site management guidelines would be developed for larger, more complex

archeological sites to avoid resource loss through administrative actions such as development, repair, and maintenance of facilities.

Reasonably foreseeable future park actions that could result in impacts on archeological resources include ground disturbance impacts associated with restoration, vegetation management, and deferred maintenance actions on failing subsurface infrastructure.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the no-action section. There would be no additional direct or indirect or cumulative impacts on archeological resources under alternatives B and C beyond what is described in that section. Overall, cumulative impacts on archeological resources are expected to not be adverse. While no impacts from alternatives B and C would take place, the potential for adverse impacts caused by current off-pavement parking trends are expected to continue.

### **Effects of Actions under Alternatives B and C**

The actions described in alternatives B and C would not alter, either beneficially or adversely, the current impacts on these resources. Additional signs would be needed in some locations under alternatives B and C. While the installation of signs generally causes ground disturbance impacts, any new signs would be installed in areas where archeological surveys have previously been completed.

**Cumulative Impacts.** The impacts of past, present, and reasonably foreseeable future actions are discussed above in the current and expected future conditions section. There would be no additional direct or indirect, or cumulative impacts on archeological resources under alternatives B and C beyond what is described in that section. Overall, cumulative impacts on archeological resources are expected to be adverse. While no impacts from alternatives B and C would take place, the adverse impacts caused by current trends are expected to continue.

### **Effects of Alternative D Yosemite Valley Reservations – Timed Entry**

Under alternative D, changes in the southwestern portion of Yosemite Valley would be made to allow for traffic to travel along Southside Drive without needing to travel to the El Cap Cross. These changes to Southside Drive and the intersection of Wawona Rd and Southside Drive are described in chapter 2.

Modifying the intersection of Wawona Road and Southside Drive and widening Southside Drive would lead to ground disturbance in these areas. While designs would strive to avoid known archeological resources, ground disturbance from these activities has the potential to adversely impact unknown archeological resources.

**Cumulative Impacts.** As parkwide vehicle volumes are not proactively managed, existing trends related to increased visitation, including instances of off-road parking, the creation of social trails, and looting impacts would continue. The intersection of Wawona Rd and Southside Drive would be modified, and Southside Drive would be widened. Climate-related impacts would also continue under alternative D. Collectively, actions under alternative D would result in adverse cumulative impacts on archeological resources.

## **Comparative Conclusion across Alternatives**

The no-action alternative would result in continued adverse impacts on archeological resources, including continued instances of off-road parking, the creation of social trails, and looting impacts. Climate-related impacts would also continue to be felt. All of these impacts would be expected to continue under alternatives B, C, and D. Neither alternative B nor alternative C would have any direct impacts on archeological resources.

While the impacts associated with the no-action alternative would be expected to be adverse, they would be less severe than the impacts associated with alternative D. Under this alternative, the construction of new NPS infrastructure in the Yosemite Valley roadways would introduce adverse impacts on archeological resources, including impacts related to ground disturbance. These impacts, when combined with the impacts already taking place, would result in the most adverse impacts on archeological resources.

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CHAPTER FOUR:  
Consultation and  
Coordination

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## **CHAPTER 4: CONSULTATION AND COORDINATION**

### **COORDINATION WITH OTHER AGENCIES AND GROUPS**

The National Park Service consulted with and received comments from various agencies, organizations, and interested persons in preparing this document. The process of consultation and coordination is an important part of this project. Following are the federal and state agencies, nongovernmental organizations, businesses, and local governmental organizations that provided comments during this process.

#### **Traditionally Associated Tribes**

- American Indian Council of Mariposa County, Inc. (Southern Sierra Miwuk Nation)
- Bishop Paiute Tribe
- Bridgeport Indian Colony
- Mono Lake Kootzaduka'a
- North Fork Rancheria of Mono Indians of California
- Picayune Rancheria of the Chukchansi Indians
- Tuolumne Band of Me-Wuk Indians

#### **Government Agencies and Representatives**

- California Office of Historic Preservation
- US Fish and Wildlife Service (USFWS)
- County of Tuolumne – Board of Supervisors
- Lee Vining Chamber of Commerce
- Mono County Board of Supervisors
- Yosemite Mariposa County Tourism Bureau

#### **Other Organizations**

- 5 Bay Area Horse Clubs
- A Climbing Meetup
- Access Fund
- American Alpine Club
- American Mountain Guides Association
- American Whitewater
- Ansel Adams Gallery
- Around the Horn Brewing Company

- Audley Travel
- Best Bay Area Tours
- Beta Breakers Climbing Meetup Group
- BlackBerry Inn
- California Hotel and Lodging Association
- Californians for Western Wilderness
- CalWild
- Camp Tawonga
- CANUSA TOURISTIK GmbH & Co. KG
- Central Sierra Audubon
- Central Sierra Environmental Resource Center
- Coalition to Protect America's National Parks
- Concierge Real Estate Services
- CRD Touristik GmbH
- Destination America
- Discover Yosemite, Inc
- Elegant Ears Mule Association
- Extranomical Tours
- Fish Camp Fire Association
- FTI Group
- Frontier Hill
- Gate 1 Travel
- Good Trip Adventures
- Grayline of San Francisco
- Gregory Campbell LLC
- Gregory Nespor Fly Fishing
- Hammett Installers
- Hazel Green Ranch
- Incredible Adventures
- Insight
- Integrated Land Stewardship LLC
- June Lake Trails Committee
- Lasting Adventures
- Marketing Services Intl.
- Music of Tom Hoffmann – West Coast Jazz
- National Parks Conservation Association
- National Trust for Historic Preservation
- Natural Heritage Institute
- Natural Resources Defense Council
- NatureBridge
- Nature Outings
- OTO Development
- Phil Hawkins Photography
- Recreational Equipment, Inc (REI)
- Relay Protection Consultants
- Richard Davis Photography
- SD-SEQUEL
- Summit Riders Horseman's Association
- Sierra Club – Blue Oak Group

- Sierra Club of California
- Sierra Forest Legacy
- Sierra Freepackers Unit - Back Country Horsemen of California
- Sierra Nevada Alliance
- Sierra Rec Magazine
- Sierra Vista Scenic Byway Association
- Spring Gulch Farm
- Tenaya at Yosemite
- Teton Editorial Services
- Tioga Gas Mart
- Trafalgar
- TrekAmerica
- Tuolumne River Trust
- UniHexagon LLC
- Upper Merced River Watershed Council
- Wild Heritage
- Yokuts Sierra Club
- Yosemite Guide2Go
- Yosemite Mountain Sugar Pine Railroad
- Yosemite Photo Workshop

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APPENDIXES

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## APPENDIX A: PILOT HISTORY FOR YOSEMITE NATIONAL PARK

Yosemite National Park has invested decades of interest and effort in visitor use management strategies. One of the five goals of the park’s 1980 general management plan is to “markedly reduce traffic congestion.” The *Merced River Plan* and the *Tuolumne River Plan* (both finalized in 2014) address congestion and crowding in Yosemite Valley and Tuolumne Meadows, respectively. Since that time, park staff have managed visitors directly and indirectly by closing gates when the park or areas of park were full, improving traffic circulation, improving communications with visitors, and using reservation systems. This appendix and the table below focus on strategies for the last 10 years.

**Table A-1. Annual Summer Strategies Comparison**

Details	2014–2019	2020	2021	2022	2023	2024
<b>Reasoning</b>	No reservation system	Response to COVID-19 pandemic	Response to COVID-19 pandemic	Response to major construction activity throughout park	No reservation system	Pilot for visitor access management plan
<b>Reservation Type</b>	No reservation system	Parkwide 24 hours	Parkwide 24 hours	Parkwide peak hours	No reservation system	Parkwide peak hours
<b>Hours</b>	No reservation system	24 hours	24 hours	6:00 a.m.–4:00 p.m.	No reservation system	5:00 a.m.–4:00 p.m.
<b>Timed Entry</b>	No reservation system	No	No	No	No reservation system	All day entry or afternoon entry only
<b>Dates</b>	No reservation system	June 11–October 31 7 days/ week	May 21–September 30 7 days/ week	May 20–September 30 7 days/ week	No reservation system	April 13–July 1, weekends and holidays  July 1–August 16 7 days/week  August 17–October 27, weekends and holidays
<b>Annual Reservation Days</b>	No reservation system	143 days (39% of the year)	133 days (36% of the year)	134 days (37% of the year)	No reservation system	97 days (26% of the year)

Details	2014–2019	2020	2021	2022	2023	2024
<b>Sales/Release</b>	No reservation system	Staggered primary release Second release 2 days in advance	Staggered primary release Second release 7 days in advance	Single primary release Second release 7 days in advance	No reservation system	Single primary release (60%) Second release 7 days in advance
<b>Reservation Length</b>	No reservation system	7 days	3 days	3 days	No reservation system	3 days
<b>Cost</b>		Entrance fee only	\$2 + entrance fee	\$2 + entrance fee	No reservation system	\$2 + entrance fee
<b>Other</b>		No reservation for Hetch Hetchy Entrance	No reservation for Hetch Hetchy Entrance	No reservation for Hetch Hetchy Entrance	No reservation system	No reservation for Hetch Hetchy Entrance

As shown in Table A-1, the reasoning for the pilots has varied across the years, and as a result, the use levels and number of reservations also varied. For example, on the Sunday nearest the Fourth of July in 2021, 3,150 reservations were available. On a similar day in 2022, the number of reservations was lower (2,600) since that system was constrained by construction. In 2024, that same date had 3,490 reservations, higher than previous years since the system was constrained by available parking and levels associated with maintaining vehicle flow.

## IMPROVEMENTS FROM OTHER ENVIRONMENTAL IMPACT STATEMENTS

The *Merced River Plan*, the *Tuolumne River Plan*, and the *Mariposa Grove Plan* included goals to better manage increasing numbers of visitor vehicles and to accommodate existing use levels at the time, using data from 2010 to 2012. The National Park Service and the Federal Highway Administration completed the following improvement projects to build new or to improve existing parking areas:

- 2010: added an entry lane and fee collection kiosk at Big Oak Flat station
- 2013: relocated the South entrance station, widened the Wawona Road approach to three incoming lanes, and added two additional fee collection kiosks
- 2015–2017: added roundabouts to facilitate continuous traffic movement at Northside Drive and Village Drive and at Wawona Road and the Mariposa Grove Road intersections



- 2015: created Yosemite Falls parking area, adding 325 parking spaces at a previously disturbed site west of Yosemite Valley Lodge; approximately 60 parking spaces were added to the Camp 4 parking area at the same time
- 2018–2023: vacated and demolished the concessioner’s general office and opened a new welcome center, adding 88 parking spaces; paved the village parking area to make the surface more resilient to visitor use and to clarify individual parking spaces
- 2019–2021: improved existing parking lots and installed new parking areas and curbing to eliminate unsanctioned parking along road shoulders along Tioga Road at Tuolumne Meadows and Tenaya Lake
- 2021–2023: piloted, and then constructed, raised medians to separate travel lanes at intersections in East Yosemite Valley; removed stop signs to allow continuous visitor vehicle movement; converted Southside Drive to one-way outbound from Village Drive to Camp 4 and Wahhoga, making the entire Yosemite Valley loop a one-way road

## **2014–2019 (NON-RESERVATION SYSTEMS)**

From 2014 to 2019, Yosemite National Park experienced record levels of visitation. From 2015 to 2019, the park welcomed over four million visitors annually. In 2016, visitation peaked at five million due to the NPS Centennial Celebration, the Find Your Park campaign, and the release of the *National Parks: America’s Best Idea* documentary. This exceptionally high visitation forced park managers to implement various reactive strategies to manage congestion, enhance visitor and occupational safety, and protect resources. Some of these strategies had been implemented earlier, while others were newly introduced. The reactive management strategies outlined below frequently involved reallocating law enforcement staff from their standard duties to manage traffic and parking, which hindered their ability to perform other vital tasks such as active patrol, enforcing park regulations, and emergency response.

### **Staffing Intersections**

The most-implemented strategy to reduce congestion, support traffic flow, aid emergency vehicle access, and increase visitor safety involved actively staffing intersections for traffic control. The most frequently staffed locations were as follows:

- Lower Yosemite Fall pedestrian crossing at east intersection with Yosemite Lodge Drive
- Yosemite Village parking, pedestrian crossing of Northside Drive
- Curry Village, Southside Drive intersection
- Southside Drive at Sentinel Drive (prior to continuous flow pilot beginning in 2020)
- Bridalveil Fall Parking

## Area Closures

Park staff implemented various area-specific closures to alleviate overcrowding in target areas and redistribute vehicles to other park areas. Reactive area closures were implemented on a case-by-case basis when certain triggers were met. Various strategies were implemented at specific areas, including the following:

- When congestion built up in the East Valley, park staff closed inbound traffic on Southside Drive and diverted vehicles at El Capitan Crossover toward Northside Drive and park exits. This strategy, known as “the shunt,” reduced the flow of new vehicles into the East Valley and allowed traffic to subside as other vehicles exited. Implementing the shunt required dedicated staff members to manage the closure and permit administrative traffic into the East Valley. While the strategy supported traffic management in the East Valley, it contributed to congestion in other areas of the park, including the West Valley.
- When the wilderness permit parking lot filled, park staff added closure signs at the intersection of Southside Drive and Happy Isles Loop.
- As parking reached capacity in the Mariposa Grove, park staff closed vehicular access to the grove. Before 2015, a shuttle service transported visitors from the Wawona parking area to the Mariposa Grove, adding to congestion in Wawona. Since the restoration project was completed in 2018, the South Entrance parking area at Mariposa Grove often closed for periods of 30–45 minutes until sufficient numbers of visitor vehicles exited the visitor parking area and parking spaces were available.
- The Glacier Point parking area often filled from mid-morning until sunset, resulting in lengthy queues on approach to entry. Visitor vehicles were frequently diverted by park staff into the Badger Pass ski area. As visitors departed from Glacier Point, vehicles were released from the ski area parking to resume travel to Glacier Point.

## Entrance Gate Modifications

Long wait times at entrance gates were common on days with heavy visitation. To improve visitor and staff safety, ensure efficient operations, and provide emergency vehicle access, various modifications were made to both the physical entrance stations and gate operations. The following strategies were among those implemented:

- Gate closures were implemented in the 1990s, including temporarily closing specific entrance stations and redirecting visitors to alternate gates, and closing all entrance gates to prohibit new entries for a designated period. These measures allowed congestion to subside before gates were reopened by staff.
- Gate staff flushed traffic through the gates, effectively reducing the long line of traffic. While this strategy reduced wait times and eliminated congestion at the gates, it pushed congestion to other parts of the park. Additionally, the park lost revenue during these periods because entrance fees were not collected.

- Physical alterations to some gates in 2010 and 2013 improved the flow of traffic and increased capacity. Other modifications require the use of temporary systems and more staffing to manage. The Arch Rock and Tioga Pass entrance stations both have one fee collection kiosk. At the Arch Rock entrance station, temporary cones are used to switch one of two outbound lanes to an inbound lane, allowing the one kiosk at this station to act as two. At the Tioga Pass entrance station, park staff hold the outbound traffic and permit incoming traffic through the outbound lane.

### **Emergency Vehicle and Bus Lane**

Prior to implementing an emergency vehicle and bus lane, both lanes of traffic in Yosemite Valley were subject to gridlock during peak visitation days. To enable emergency vehicle and transit and shuttle bus access, an emergency vehicle and bus lane was first established on Northside Drive from Curry Village Drive to Yosemite Village. After the success of the Northside Drive emergency vehicle and bus lane, park staff expanded the lane to include Southside Drive, from El Capitan Crossover to Curry Village Drive.

The bus lane improved access for shuttle buses and administrative and emergency vehicles but sometimes increased passenger vehicle congestion length, as vehicles could use only one lane. However, the park also saw a reduction in passenger vehicle congestion time due to less merging at intersections and lane transitions.

The bus lane was preferable to other traffic management strategies, such as “the shunt,” because it required fewer staff to manage. Nevertheless, staff were still necessary for proper implementation, including ranger vehicles and bike patrols. While the bus lane was primarily successful, challenges included public confusion between bus, emergency, and high-occupancy vehicle lanes.

When the Yosemite Valley-wide continuous flow intersection project was implemented, the bus lanes were eliminated. The project required the use of both lanes by visitors at critical East Valley intersections.

### **El Portal (Foresta Road) Bypass**

The El Portal bypass operated in April and May 2018. The primary goal was to reduce the number of vehicles queuing in a recently active rockfall zone while waiting for entry via Arch Rock and to allow for an administrative vehicle bypass via Foresta Road. This pilot was proposed for a duration of three weeks and authorized by a state permit issued by Caltrans with participation by the California Highway Patrol. Ultimately, the bypass was determined to yield marginal benefits with excessive operating costs incurred by all three agencies.

### **Parking Management**

Vehicles consistently parked in no-parking areas, causing vehicles to get stuck and obstruct traffic. Additionally, vehicles backed up in undesirable areas while waiting for parking spaces. To manage these issues, staff tried various strategies, including the following:

- The National Park Service placed boulders, curbs, and logs along various roadsides to prevent out of bounds parking.
- After pavement rehabilitation in 2015, parking was removed from the south edge of Northside Drive in Cook's Meadow. This change eliminated eastbound traffic congestion, as visitors no longer obstructed traffic while waiting for roadside parking spaces. Additionally, there were fewer pedestrians crossing the road outside of crosswalks.
- Yosemite Conservancy and the National Park Service introduced the Yosemite Bike Share program, which provided free bikes in Yosemite Valley to encourage vehicles to remain parked once in Yosemite Valley.
- In 2017, parking reservations were tested at the Yosemite Falls parking area. The program was not extended beyond that year because many reserved parking spaces were unused by those who made a reservation. Visitors who made the reservations presumably found other parking spaces to be accessible or more convenient.
- Parking area supervision and enforcement efforts were focused at Four Mile Trailhead, Swinging Bridge, and between the Village Store and medical clinic.
- To reduce out-of-bounds camping and increase available parking, the National Park Service added signs at parking lots to try to prevent visitors from sleeping in vehicles overnight.

## **Communications**

Park staff used messaging to communicate traffic issues with the public. These strategies included the following:

- Suggesting early arrivals for parking access and gate queues
- Traffic forecasting
- Web/social media campaigns
- Communication with gateway communities
- Use of Caltrans signs
- Changeable message signs inside the park
- Park website updates, including public information maps with trail and road closures

## **Summary**

The short-term, reactive strategies implemented in response to record visitation levels at Yosemite National Park from 2014 to 2019 were marginally effective at improving congestion, safety, and resource protection. They were not proactive or holistic solutions and did not address the root causes of the issues facing the park. The strategies placed a heavy reliance on

front-line staff, such as entrance gate employees, law enforcement staff, and traffic rangers, and detracted from simultaneous park priorities and needs. In times of low staff retention and decreased staffing levels, these strategies were often less effective in managing high visitation. Therefore, the challenges faced between 2014 and 2019 underscore the need for a comprehensive, proactive, and adaptive approach to visitor management to address congestion and ensure sustainable solutions.

## **2020 24-HOUR PARKWIDE RESERVATIONS**

### **Summary**

- Reasoning: Response to COVID-19 pandemic
- Type: 24-hour, day-use, parkwide reservations
- Dates: June 11–October 31 (143 days)
- Quota: 50% of the average June vehicle rate
- Length of reservation: 7 days

### **Details**

Yosemite National Park implemented its first vehicle reservation system in response to the COVID-19 pandemic. Between March 11, 2020, and June 10, 2020, the park remained closed, and an interdisciplinary team developed a proactive strategy to welcome visitors back to the park while also maintaining public and occupational health and safety. This 2020 pilot operated from June 11, 2020, through October 31, 2020, and regulated visitation for 24 hours a day. Park staff developed the pilot in coordination with the Yosemite Gateway Area Coordination Team (YoGACT), a consortium of elected officials, emergency services professionals, public health officials, agency representatives from the park, US Forest Service staff, Bureau of Land Management staff, and the four gateway county governments.

Parkwide day-use reservations were sold through Recreation.gov in two release windows—the first of each month (80%) and two days in advance of each entry date (20%). To meet public and occupational health and safety requirements, the park admitted 50% of the June 2019 vehicle rate—each reservation lasted for seven days. With the implementation of the reservation system, other visitor use systems changed—all campgrounds and wilderness permits required reservations (first-come, first-served options were eliminated) and Yosemite Valley and Mariposa Grove shuttles were suspended. Campgrounds and in-park lodging operated on reduced capacity, per COVID-19 mitigation. Reservations were required for all park entrances, except Hetch Hetchy due to poor connectivity and operational flexibility to close the gates at this dead-end entrance station.

The day-use reservation permitted entrance into the park from 5:00 a.m. to 11:00 p.m. Only visitors with in-park overnight accommodations, including wilderness permits, vacation rentals, and park lodging, were permitted to be inside the park from 11:00 p.m. to 5:00 a.m.

To support tracking and monitoring of reservations, park staff developed a beta version of the current reservation database, which consolidated all reservations from multiple systems for entrance station staff to use. Upon entrance, all nongovernment vehicles were provided a windshield permit, which defined their entrance type: day use, overnight, or administrative. As visitor entrance stations could not be staffed for 24 hours, visitors could use a self-registration system to check in after hours. Rangers patrolled the park to identify vehicles that did not have a permit and were in violation of the reservation system.

Wilderness permits were delivered via e-mail following attendance of a daily online wilderness permit talk. Big Wall climbers were not, however, included in this system. As such, they were the only user group that did not have a valid way to visit the park: they were not included in any other overnight reservation quota, and if they came in under day-use reservations, the vehicle was in violation if they went up on a wall for multiple days. This remained an issue in 2021.

A 24-hour system proved to be an effective strategy for providing adequate spacing for COVID-19 precautions and for promoting safer conditions throughout the park. Traffic was free flowing throughout the season and parking was readily available. However, the system was operationally challenging for entrance station staff and law enforcement staff. There were difficulties managing pass-through traffic, which was not accommodated under this system, and enforcing the requirement of arrival on the first day of the seven-day reservation. The system allowed park staff to test certain operational strategies, including enforcement, database development, and more, yet it was not a good pressure test of the system due to heavily reduced vehicle numbers due to COVID-19 restrictions.

## **2021 24-HOUR PARKWIDE RESERVATIONS**

### **Summary**

- Reasoning: Response to COVID-19 pandemic
- Type: 24-hour, day-use, parkwide reservations
- Dates: May 21–September 30 (133 days)
- Quota: Tiered approach based on COVID-19 rates in Mariposa County
- Length of reservation: 3 days

### **Details**

Due to ongoing COVID-19 impacts in 2021, the National Park Service, in partnership with YOGACT, reimplemented the previous year's parkwide reservation system with modifications. The day-use reservation continued to permit entrance into the park from 5:00 a.m. to 11:00 p.m. Only visitors with in-park overnight accommodations, including wilderness permits, vacation rentals, and park lodging, were permitted to be inside the park from the 11:00 p.m. to 5:00 a.m. Pass throughs were permitted to drive through the park with a time-restricted pass. Day-use visitors bought reservations through Recreation.gov, with a shortened reservation season from

2020, reservations were only required from May 21 through September 30 based on low demand for fall reservations. Reservations were not required at the Hetch Hetchy Entrance.

To accommodate more visitors and reservations, the length of the reservation switched from a seven-day pass to a three-day pass. Visitors could purchase passes in a staggered advanced release or seven days before entrance. The staggered advanced releases occurred on April 21 for May 21–June 30 entrances, on April 28 for July entrances, on May 5 for August entrances, and May 21 for September entrances. These two release strategies supported visitors who planned in advance and those who required last-minute planning. With better county and nationwide COVID-19 tracking, park staff created a tiered system to determine the number of vehicles passes sold during the week before release. The system was based on Center for Disease Control tiers for Mariposa County COVID-19 rates. Under this system, the strictest tier admitted 50% of the average June vehicle rate (the rate used throughout the 2020 pilot) and the most lenient was 90% of the average.

Park staff continued to use the previously developed reservation database, self-registration system, and enforcement strategies. The wilderness permits and campground remained reservation only, and the shuttles continued to be suspended.

In addition to the reservation system, park staff implemented a valley traffic pilot to determine whether congestion could be minimized by changing some travel patterns in East Yosemite Valley, particularly at intersections. As the traffic pilot was nested inside the reservation pilot, all effects of the reservation pilot must consider the traffic pilot as well. The pilot tested the following:

- converting Northside Drive to one-way westbound from the Yosemite Village parking area to Yosemite Valley Lodge so that both travel lanes could be used to exit Yosemite Valley
- closing the eastern entrance to Yosemite Valley Lodge to minimize conflict between vehicle turning movements and pedestrians at the Yosemite Falls crosswalk
- removing stop signs at three intersections, with barriers that sorted vehicles according to direction of travel
- changing the four-way intersection near Curry Village to a three-way intersection so that vehicles may pass through the intersection without stopping
- reconfiguring the two Sentinel Drive T-intersections at Northside and Southside Drives to establish through travel lanes and to allow unrestricted turning movement so that vehicles may pass through the intersections without stopping
- implementing contraflow on Sentinel Drive to facilitate unrestricted turning movements at both intersections so that motorists may proceed without yielding to other vehicles

The 24-hour parkwide reservation system continued to be an effective strategy for limiting overcrowding and achieving safe conditions throughout the park. Twenty-four-hour parkwide reservations put additional pressure on visitors and staff, as there were no times for access without permits. Under the pilot permit, it continued to be challenging to educate all potential

visitors about a new system. The rigidity of 24-hour reservations caused challenges for many visitor and staff interactions.

Under this pilot, various strategies increased the number of available reservations and visitors. Return rates on weekdays were much lower than weekends, so park staff increased the availability of weekday permits. Three-day permits allowed for more reservations (as compared to seven-day permits) under the same return rate observations. The tiered quota approach, along with 126 % increased occupancy at campgrounds and 64% increase in park lodging compared to 2020, permitted more visitors to access Yosemite.

## **2022 PEAK HOURS PARKWIDE RESERVATIONS**

### **Summary**

- Reasoning: Heavy construction activity throughout the park reduced parking and increased congestion potential
- Type: Peak hours, day-use parkwide reservations
- Reservation hours: 6:00 a.m.–4:00 p.m.
- Dates: May 20–September 30 (134 days)
- Quota: Based the number of available reservations on parking spaces available (as determined by the *Merced River Plan*) and seasonal access but reduced due to parking loss with 2022 construction activity
- Length of reservation: 3 days

### **Details**

The National Park Service instituted a reservation system in 2022 from May 20 through September 30 in response to multiple projects in Yosemite that significantly impacted visitor access and parking availability. Projects included the Glacier Point Road and Tioga Road rehabilitation; the construction of a new welcome center and restrooms in Yosemite Village and at Bridalveil Fall; the reconfiguration of parking areas; and the construction closures of the following campgrounds: Tuolumne Meadows, Crane Flat, Porcupine Flat, and Bridalveil Creek. Rather than use the 24-hour system from 2020 and 2021, reservations were required only during peak hours (6:00 a.m.–4:00 p.m.). The peak hours system was less operationally taxing, permitted pass-throughs during nonpeak hours, and created opportunities for visitor spontaneity. Additionally, the need for heavy COVID-19 restrictions dwindled in 2022. Reservations were not required at the Hetch Hetchy Entrance.

Visitors could purchase reservations for all dates during the primary release on March 23. A secondary release of reservations was sold seven days in advance of each arrival date. These two release strategies continued to support visitors with long- and short-term planning preferences. Each reservation lasted for three days, the same length as the 2021 reservations. Park staff based the number of available reservations on parking spaces in Yosemite Valley (as determined by the



*Merced River Plan*) and seasonal closures and adjusted to accommodate 2022 construction activities.

The self-certification process required during the 2020 and 2021 systems was eliminated with peak hours, as reservations were required only during the hours gates were staffed. To assist with enforcement, all vehicles had windshield tags identifying their access type. As reservations were not required at all times, nonlocal pass throughs were only permitted during non-reservation hours (4:00 a.m. to 6:00 p.m.).

Peak hours reservations provided for greater visitor freedom, with a larger quota available under the three-day window, and provided opportunities for visitation outside of the reservation window. Introducing the peak hour concept gave visitors the option to enter the park after reservation hours. This system improved the visitor experience for those who were unaware of system requirements or unable to secure reservation. In terms of vehicle accumulation, the peak hour system resulted in three entry peaks. The earliest was visitors coming in before 6:00 a.m., with a much lower peak in the middle of the day and another peak at the end of the day after 4:00 p.m. Traffic counters and parking lot data showed a push to arrive before 6:00 a.m. in Yosemite Valley throughout the reservation window, reducing parking availability for reservation holders. More outreach was needed to reach a wider range of visitors, including English as a second language speakers.

Compared to the 24-hour system, a peak hours reservation system allowed more visitors to access the park but not all at once, which helped to moderate visitation while allowing greater access.

## **2023 REACTIVE VISITOR USE MANAGEMENT**

After three consecutive years of summer day-use reservation programs, park staff did not implement a day-use reservation system in summer 2023. By allowing for an unconstrained level of visitors to access, park staff were able to observe and test the efficacy of implementing the recent infrastructure updates, including parking lot improvements, circulation changes, and roadway updates.

While no reservation system was tested, other strategies were implemented to improve visitor communication, reduce congestion, and support park operations. Many of the methods described in the 2014–2019 section were used, including staffing intersections, traffic management, and entrance gate modifications. Additionally, a new text alert system was developed to inform visitors of parking lot capacities and wait times at gates.

Extreme snowpack in the Sierra Nevada, at 220% of average, caused significant delays in opening Glacier Point Road and Tioga Road. A road closure in the spring on Big Oak Flat Road redirected traffic from the Big Oak Flat entrance to the Arch Rock Entrance, creating longer lines and wait periods. While some infrastructure updates were complete, various construction projects in Yosemite Valley were still underway, including the continuous flow intersection improvements, the Welcome Center, and Bridalveil Fall project.

While the summer of 2023 had unique challenges related to snow loads, road closures, and construction projects, future seasons will have their own challenges as well. Visitor use

concentrations and traffic congestion are sensitive to the ability to access roadways and areas of the park due to varying travel conditions. The previously completed infrastructure improvements were not enough to reduce congestion, improve visitor safety, and meet the purpose and need of this plan. The 2023 season highlighted the need for a long-term solution that is clear, effective, and responsive to changing conditions.

## 2024 PEAK HOURS PARKWIDE RESERVATIONS

### Summary

- Reasoning: To test various modifications from the 2022 reservation system to inform the visitor access management plan
- Type: Peak hours, day-use, parkwide reservations
- Reservation hours: 5:00 a.m.–4:00 p.m., two entrance blocks: all day or afternoon only
- Dates: April 13–October 27 (97 days), weekends only April 13–June 30 and August 17–October 27, 7 days/week July 1–August 16
- Quota: Based the number of available reservations on parking spaces in Yosemite Valley (as determined by the *Merced River Plan*) and seasonal closures and calibrated for return rates (use of permits) for weekends versus weekdays
- Length of reservation: 3 days

### Details

To gather additional information that would inform the visitor use management plan, park staff instituted a day-use peak hours reservation system pilot in 2024—this pilot tested a system during a time without pandemic restrictions or major construction. Modifications from the 2022 reservation system included weekend-only periods (Saturday, Sunday, and holiday Mondays) during the early and late peak seasons, afternoon entries, and an overall increase the number of reservations available. In response to shifting use patterns during the 2022 day-use peak hours system, peak hours shifted from 6:00 a.m.–4:00 p.m. in 2022 to 5:00 a.m.–4:00 p.m. in 2024. Reservations were required for 95 days of the year, April 13–June 30 (weekends only), July 1–August 16 (seven days a week), and August 17–October 27 (weekends only).

To provide additional reservations compared to the 2022 pilot, the 2024 pilot included two entrance windows: all day and afternoon only (12:00 p.m.–4:00 p.m.). Sixty percent of reservations were sold during a primary release starting on January 5, and 40% were available during the secondary release, seven days in advance of the entrance date. Park staff based the number of available reservations on parking spaces in Yosemite Valley (as determined by the *Merced River Plan*) plus seasonally accessed areas and calibrated for return rates (use of permits) for weekends versus weekdays. These numbers are adjusted to account for seasonal variances in access. For example, overall entry numbers are lower when Tioga Road is closed in the spring. During the summer, weekend numbers are lower than weekdays numbers because more vehicles enter before peak hours begin and more people use the second or third day of their

reservation. Reservations continued to last for three days, and entrance windows were applied across the three days. Reservations were required for all park entrances except Hetch Hetchy.

## **SPECIAL EVENTS**

### **Horsetail Fall**

Historically, the sunset backlight on Horsetail Fall was little known. However, in recent years, visitation around this event has increased dramatically. For example, on February 19, 2022, 2,433 visitors viewing Horsetail Fall gathered in areas mostly lacking adequate parking and other facilities. In prior years, visitors spilled onto riverbanks, increasing erosion and trampling vegetation. As riverbanks filled, visitors moved into the Merced River, trampling sensitive vegetation, and putting themselves in unsafe conditions. Some undeveloped areas became littered with trash, and the lack of restrooms resulted in unsanitary conditions.

Various restrictions have been in effect during mid- to late February each year daily to protect visitors and park resources. Non-reservation-based park management of the Horsetail Fall event evolved over years of experimentation. Iterations included the following:

- The north lane of Southside Drive was closed to traffic and parking was allowed. This action allowed visitors to gather at the Ferry Bend and other viewpoints.
- Due to resource damage in viewing areas, overcrowding, and the tendency of visitors to obstruct travel lanes or to park in ecologically sensitive and protected areas, park staff closed Northside Drive to parking.
- Driven by construction during the 2015 Horsetail Fall event, park staff closed Northside Drive to through traffic and implemented two-way traffic on Southside Drive.
- A no-stopping zone and a temporary pedestrian lane were created on Northside Drive and Southside Drive in recent years.
- Pedestrian access and parking along Southside Drive and the south side of the river was prohibited.

Park staff implemented a pilot vehicle permit system for Horsetail Fall in 2018, which included the following:

- Northside Drive between Yosemite Valley Lodge and El Capitan Crossover was closed to vehicles without permits February 12–26.
- Access was provided via guided tours with Yosemite Hospitality, or visitors could obtain a parking permit for this portion of Northside Drive. Reservations for 250 daily parking permits were available through The Ansel Adams Gallery.

In 2020, reservations and permits were not required. To view Horsetail Fall, visitors could park at Yosemite Falls (just west of Yosemite Valley Lodge) and walk 1.5 miles (each way) to the viewing area near the El Capitan Picnic Area. Vault toilets, along with trash and recycling dumpsters, were available at the picnic area. Northside Drive had one lane closed to vehicles so

pedestrians could walk on the road between the viewing area and Yosemite Falls parking. Parking, stopping, or unloading passengers were prohibited between Camp 4 and El Capitan Crossover. Vehicles displaying a disability placard were allowed to drive to El Capitan Picnic Area and park in pullouts on the north side of Northside Drive.

Southside Drive was open to vehicles, but parking, stopping, and unloading passengers were prohibited between El Capitan Crossover to the Swinging Bridge Picnic Area. Pedestrians were also prohibited from traveling on or adjacent to the road in this area. From the Cathedral Beach Picnic Area to the Sentinel Beach Picnic Area, the area between the road and the Merced River (including the river) was also closed to all entry.

El Capitan Crossover (the road connecting Northside and Southside Drives near El Capitan) was open to vehicles, but parking, stopping, and unloading passengers were prohibited.

In 2021, day-use reservations were required beginning February 8th, which was also tied to local health conditions related to COVID-19. Eighty percent of reservations were released February 1, and 20% were released two days prior. During February 12–24, the road and parking restrictions were also in place, like 2020.

In 2022, reservations were not required. The same road restrictions were in place as 2020 and 2021.

In 2023, reservations were required to drive into Yosemite 24 hours per day on February 10–12, 17–19, and 24–26. Additionally, parking was restricted in same capacity as previous years. All-day visitors were required to have reservations to enter the park, with exceptions for winter activities, including Badger Pass lift tickets and visitors with in-park overnight accommodations.

In 2024, reservations were required to drive into Yosemite 24 hours per day on event weekends. Additionally, parking was restricted in the same capacity as previous years. All-day visitors were required reservations to enter the park, with exceptions for winter activities, including Badger Pass lift tickets and visitors with in-park overnight accommodations.

## APPENDIX B: ZONING AND DESIRED CONDITIONS

Park zoning, as defined in the 1980 general management plan, needed **minor updates and clarification** in some areas. In the more than 40 years since the general management plan was developed, visitor activities and experiences have changed, the Yosemite Wilderness was designated, land has been added to the park, and in some cases, NPS policy has changed. Some of the existing zoning does not provide sufficient detail to inform the decisions of park managers regarding appropriate visitor uses and resource conditions. Therefore, this amendment updates the zones and descriptions to clarify the context and direction for these areas of the park and to reduce some of the redundancy found in the 1980 general management plan. The 1980 special use zone remains the same and, therefore, is not included in the zoning table.

### PARKWIDE DESIRED CONDITIONS

#### Visitor Use and Experience

- Visitors of all backgrounds and abilities feel welcomed and included upon entering the park.
- Visitors can trip plan and make informed decisions about their visit before entering the park. They can access basic information and orientation related to current conditions, available recreational opportunities, and responsible behaviors. They are informed about their transportation options and know what to expect for their visit. Information is up-to-date, reflective of current conditions and operations. Additional on-site trip planning and transportation information is provided at major points of entry into the park through various means.
- Interpretive and enforcement efforts provide opportunities for visitors to develop a sense of shared stewardship for park resources, leading to increased compliance with rules and regulations.
- Diverse user groups have reasonable access to various recreational opportunities with minimal crowding and less competition for opportunities.
- A range of visitor opportunities is offered, from more developed, social settings with facilitated experiences to more undeveloped, wild settings with opportunities for solitude. Visitors have information about these opportunities, conditions, and needed skills to engage with them.
- Visitors have the opportunity to understand importance of resources and feel inspired to be stewards and to their preservation.
- Visitors have a reasonable opportunity to visit their primary destination in the park.
- Visitors are provided with safe, convenient, conflict-free, and sustainable access to park resources and experiences using various means, including by private automobile,

commercial transportation, or transit service or on foot, stock, or bicycle. Visitors can access transportation systems that allow for the exploration of and connections to other locations in the park and region on a predictable basis.

- Reliable multimodal transportation system and bike/pedestrian opportunities provide access to key park resources and enhance the overall experience.
- Changes to and impacts on systems to enter and move within the park are clearly communicated to visitors in a timely manner.

## **Natural Resources**

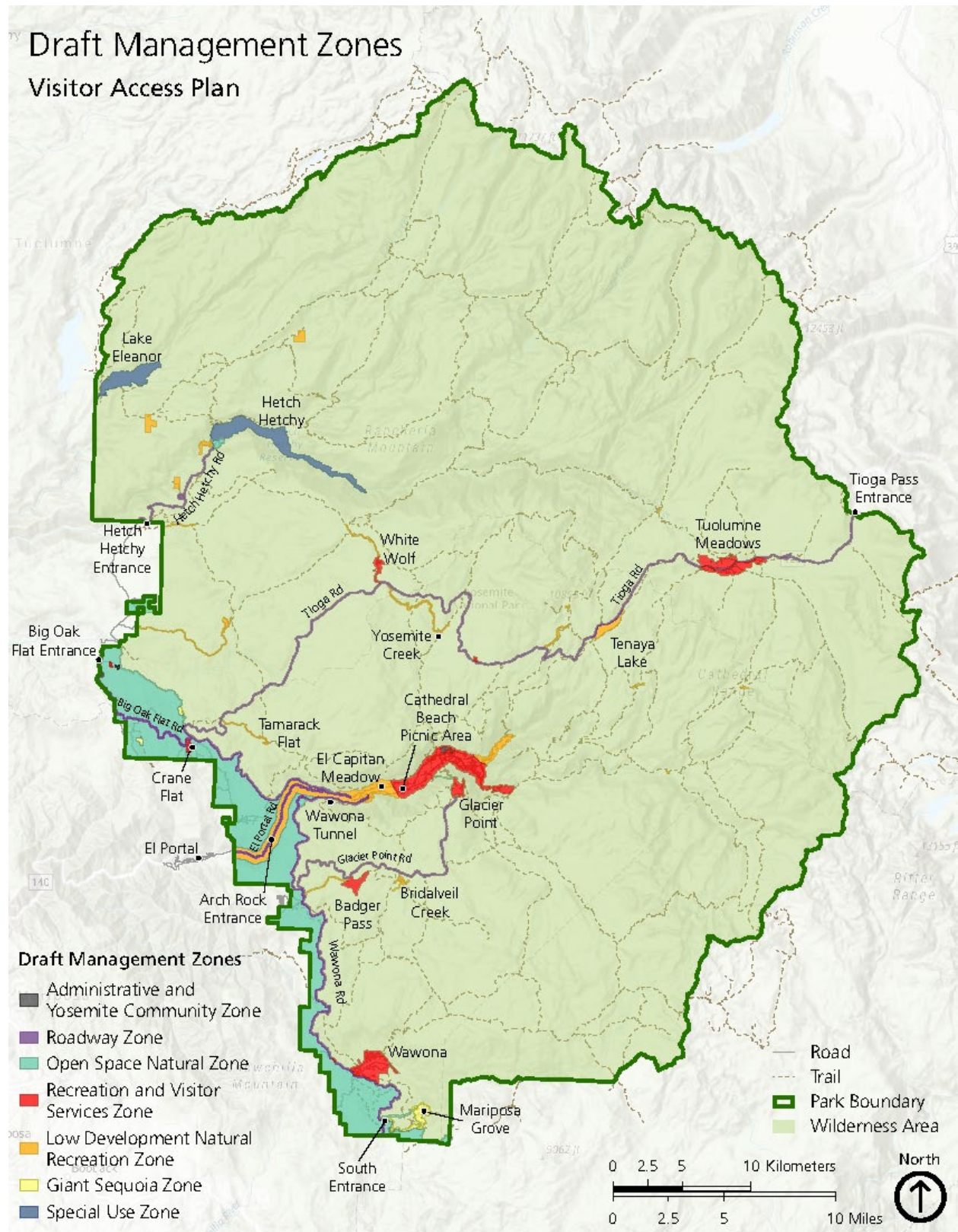
- Visitors understand and appreciate the natural resources, including rare and sensitive species protected in the park.
- Natural resources are regularly inventoried and monitored, and actions are taken to protect them.
- Watersheds in the park are monitored and protected.
- Traditional knowledge is incorporated into resource protection and restoration.
- Native wildlife populations thrive and freely use their habitats with minimal human influence or conflicts.
- Ecosystems retain natural integrity, and alpine tundra vegetation thrives in its natural environment. Ecosystems are increasingly resilient to stressors through science-based adaptive management.
- Trails in the sensitive areas remain minimal and as designed with surrounding vegetation remaining intact. Vegetation and soil trampling along lakeshores and stream banks is minimized.
- Water quality is within the range of natural conditions and supports native plant and animal communities in the park's vast ecosystems. Human sources of water pollution in the park that adversely affect conservation are mitigated or minimized.
- Resources in the park are protected, and affiliated Tribes and members maintain access to those resources used for traditional purposes.
- Emissions from idling vehicles along roadways and in parking lots are minimized to reduce deposits and air pollution and protect wildlife and ecosystem functions.
- Stressors from visitor use, such as habitat fragmentation, do not impede species' ability to adapt to climate change.

## **Cultural Resources**

- Visitors understand and connect with Yosemite's cultural heritage. Cultural resources are identified, evaluated, managed, interpreted, and experienced. Yosemite protects ethnographic, archeological, and historic resources that represent a diversity of people

and histories. The integrity of these resources is intact to convey broad patterns of history, connections to people and communities, and characteristic design elements, as well as to inform future research. Their conditions are monitored for impact thresholds and prescribed interventions/management actions.

- The stories of Yosemite's past are authentically told, connecting all who come to Yosemite to diverse stories and the experiences of the people who comprise Yosemite's cultural heritage. Stories are shared from the perspectives and voices of those most connected to them.
- Tribes can access their homeland, continuing traditional and spiritual connection to the lands, air, waters, and history preserved in Yosemite, as they have held for generations. Areas of significance are protected and set aside for their use.
- Resource stewardship decisions and actions take place in collaboration with traditionally associated Tribes.



**FIGURE B-1. YOSEMITE NATIONAL PARK MANAGEMENT ZONES**



**Desired Conditions by Zone**

<b>Updated Zone Name</b>	<b>Administrative and Yosemite Community Zone</b>	<b>Roadway Zone</b>	<b>Open Space Natural Zone</b>	<b>Recreation and Visitor Services Zone</b>	<b>Low Development Natural Recreation Zone</b>	<b>Giant Sequoia Zone</b>	<b>Wilderness Zone</b>
<b>GMP Zone(s) Being Updated</b>	<b>Development</b>	<b>Natural</b>	<b>Natural</b>	<b>Natural &amp; Development</b>	<b>Natural &amp; Development</b>	<b>Outstanding Natural Features</b>	<b>Natural</b>
Locations (include key locations listed in this table but are not limited to those locations)	Administrative areas throughout the park where visitor use does not occur  Includes Park and concessioner housing, ranger stations, and other non-visitor locations.	All entrances and roadways in the park  Pullouts and their associated amenities and services  Does not include parking areas	Non-wilderness lands adjacent to wilderness from the park boundary near Big Oak Flat Road and Evergreen Road to Wawona Road, just south of Alder Creek  All trails in this zone  Foresta	East Valley  Access to Vernal and Nevada Fall (beyond Happy Isles) to the wilderness boundary  Wawona  Area around Tuolumne Meadows  Glacier Point  East Valley campgrounds, White Wolf Campground, Crane Flat Campground, Tuolumne Meadows Campground, Wawona Campground  Includes associated parking areas	Tenaya Lake  East Valley from the Mirror Lake Trailheads to the wilderness boundary  West Valley  Hetch Hetchy  More remote campgrounds (Yosemite Creek, Tamarack Flat, Bridalveil Creek, Porcupine Flat)  Mirror Lake and Happy Isles  Includes associated parking areas  High Sierra Camps	Mariposa, Merced, and Tuolumne Groves of Giant Sequoias	Yosemite Wilderness
Description	This zone contains developments required for park operations and to support staff accommodations and daily life. The zone will occupy the least amount of space necessary to achieve park objectives (1980 general management plan).  This zone includes lands that will be managed to provide and maintain facilities serving park managers. This zone encompasses the facilities themselves and all associated lands directly modified because of their continuing management and use.	This zone recognizes the critical role that park roads and associated infrastructure have played and continue to play in supporting memorable and meaningful park experiences for visitors. Viewsheds and vistas will be managed to preserve historic views, where appropriate, and provide for visitor safety.	This zone includes lands and waters that will be managed to conserve natural resources and ecological processes.	This zone provides the highest levels of visitor services, commercial services, overnight accommodations, parking, and other facilities that support visitor use and experiences. The zone accommodates the highest visitor use levels.	Facilities and services are limited in this zone to those necessary to facilitate visitor access, address basic visitor needs, and protect park resources, and the natural environment is emphasized. The primary management objective in this zone is protecting natural resources and values while providing for activities that ensure their availability for future generations. While use levels are high, visitors can still feel a sense of separation from the crowds and chaos of the modern world and begin to feel more connected to the natural environment. This zone allows visitors who are new to vast, natural or	This subzone contains natural features of outstanding significance, which are not within proposed wilderness areas.	This zone updates the 1980 wilderness subzone. It includes all the land designated as wilderness in the 1984 California Wilderness Act.

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
					wilderness landscapes a first step toward a more immersive experience in a remote environment, while still having amenities present. Accessible parking is available in all parking areas, in this zone and barriers to accessibility are removed where possible.		
Levels of management for visitor use	N/A	Actively managing parking, traffic flow, and speed in this zone will focus on the protection of adjacent natural and cultural resources, creating opportunities for visitors to connect with fundamental resources and values along the corridor and visitor safety	This area has minimal NPS presence.	This zone has the highest levels of management, and visitors expect to see park staff and regular maintenance operations. Management operations occur frequently in this zone and are focused on maintaining facilities, providing quality visitor experiences, and mitigating impacts from human use.	This area has some management, mostly to maintain minimal infrastructure, trash removal, supplies for toilets, and a law enforcement presence	Grove dependent	Natural systems and processes will be permitted to follow their courses with minimum intrusion, and visitors will be limited at levels that do not significantly affect natural environments.
Levels of development to support visitor use for facilities and services	Facilities and services support park operations. The sights and sounds of these facilities are minimized to decrease the impact on visitor use areas.	Facilities and amenities along road corridors provide orientation, information, interpretation, and other services to meet various needs and desired experiences. These may include visitor centers, restrooms, and food service consistent with the surrounding landscape and proximity to wilderness and other fundamental resources. Development in the zone will include pullouts, parking areas designed for short-term parking (e.g., overlook viewing), waysides and other visitor information signs, kiosks, and appropriately scaled covered areas if necessary. Transportation facilities support key visitor experiences related to	This area has no visitor services or facilities.	Visitors can access modern conveniences and infrastructure. Restrooms are available, clean, stocked, and serviced to support visitor health and comfort. Clean water is available throughout the area. Pathways and sidewalks are hardened to accommodate high levels of visitor use.	This area is less developed than the high-density zone, and visitors expect fewer services, arriving prepared for their experiences. Facilities and services are minimal and provide only basic amenities such as pit toilets and picnic tables. Water fill stations may be available. Trails are moderately developed and provide opportunities for freedom, exploration, and discovery.	See "grove dependent" above	This zone includes the minimal development necessary under the provisions of the Wilderness Act.

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
		fundamental resources or values.					
Orientation circulation information	N/A	Visitors arrive prepared for their experience at Yosemite. Entrance stations welcome them into the park and represent entry into an area set aside for the preservation of its unique character and values. Entrance stations are designed to accommodate easy entry for both visitors and staff, contribute to a strong park identity, and allow for reasonable emergency and other administrative access. While visitors may have to wait before they can enter the park, the experience is safe, sustainable, and does not diminish the overall quality of the visitor experience. Entrance station operations function efficiently.	Visitors who choose to recreate in this area arrive prepared for their experience, knowing what trails and opportunities are available.	This zone functions as the primary orientation area for visitors and includes visitor centers, museums, and information kiosks.  Communication focuses on trip planning, education and interpretation, safety and preparedness, and resource protection messaging.	Visitors can find the information they need to make the most of their visit. Current conditions, key notifications, and resource considerations are communicated at trailheads.  Visitors understand how to access and move throughout the zone.	Visitors understand the types of opportunities and experiences available at each grove and how to access and enjoy them.	Minimal signage may be required in certain locations in wilderness and is limited to small directional signs.
Contacts with NPS staff/ interpretation and education	N/A	Visitors can learn about the historic roadways in the park and their significance to regional and national transportation, development, and wilderness preservation. Information and orientation serve both day and overnight users.  Interpretation focuses on natural and cultural resources visible from the road corridor, as well as the history of the roads and other historic and prehistoric pathways that may have followed similar footprints of existing roadways.	Encounters with other visitors or NPS staff would be very rare in this zone.	Encounters with NPS staff and other visitors is highest in this zone. Visitors have opportunities to ask NPS staff questions and participate in a diverse selection of programming.	Encounters with NPS staff are less likely in this zone but do occur. Interactions focus on education and interpretation, resource protection, and safety messaging.	Interpretation occurs to varying degrees at each grove to help visitors connect with the significance of the groves and understand threats to the groves, including the impacts of climate change. Visitors can learn about and understand critical issues tied to the groves and why the National Park Service takes certain actions that benefit the ecosystem, including prescribed fire.	Encounters with NPS staff are minimal.

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
Amounts of use/ encounters with others	Visitor use does not occur in this area.	This area accommodates a high volume of visitor use. Traffic is predominantly free flowing, though levels vary across the park and congestion and delays can occur, but do not compromise safety or emergency response.	Encounters with other visitors or NPS staff would be minimal.	Visitor experience is highly social with frequent encounters with other visitors and park staff. While congestion occurs and some wait may be involved, visitors can access their desired services and destinations in a reasonable time. Traffic conditions reflect the busy, social, developed landscape, and visitors expect more congestion, encounters, and longer waits to park and travel than in other areas.	While use levels are high, visitors can still feel a sense of separation from the crowds and chaos of the modern world and begin to feel more connected to the natural environment.	Amounts of use are managed to emphasize visitors' connections with the trees and their habitats.	Amounts and types of visitations will not significantly affect natural environments and wilderness character.
Preparedness/risk awareness	N/A	Visitors know what to expect as they travel through the park. Congestion levels do not compromise safety or emergency response. To ensure visitor safety and avoid conflicts, the number and size of all vehicles accessing key areas does not exceed the road's design or parking capacity.	Visitors have sufficient knowledge about the available opportunities in this zone and how to experience them safely.	While visitors are close to facilities and services, they are still prepared for various conditions they could encounter.	Visitors have sufficient knowledge about the available opportunities in this zone and how to experience them safely. This zone allows visitors who are new to vast, natural or wilderness landscapes a first step toward a more immersive experience in a remote environment, while still having most of the comforts of civilization present. This zone is a gateway into the Yosemite wilderness. Visitors can find guidance on wilderness recreation, and information on wilderness conditions and Leave No Trace principles to prepare them for their visit if they choose to enter the wilderness.	Visitors have sufficient knowledge about the available opportunities at each grove and how to experience them safely.	Visitors have sufficient knowledge about the available opportunities in this zone and how to experience them safely.
Range of activities	N/A	Well-maintained roads provide ready access to visitors' primary destinations and access to a wide variety of recreational opportunities.	This zone primarily provides day-use hiking experiences. Visitors can use one of the trails or make their own routes, traveling cross-country.	Visitors can participate in a wide variety of highly structured and facility-dependent recreational activities. These activities mainly revolved around going to visitor centers, museums, stores, restaurants, paved walkways,	Visitors can access recreational experiences such as hiking, climbing, swimming, birdwatching, and fishing, which promote	The Sequoia Groves provide visitors with a range of experiences, from more accessible services and interpretation opportunities at the Mariposa Grove to undeveloped and relatively	This zone primarily provides day-use and overnight hiking and other nonmotorized experiences. Visitors can use one of the trails or make their own

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
		<p>Visitors are provided with safe, convenient, and sustainable access to and around the park using various means, including private automobile, commercial or regional transportation services, and in-park shuttles or by foot or by bicycle. Visitors in private vehicles can plan ahead to find parking in the park, but they expect to travel via the park's shuttle system, by bicycle, or on foot to get to their desired locations and understand how to do so. Shuttles run regularly, providing dependable access for visitors, though visitors expect some wait to board.</p> <p>Historic scenic vistas and recreational opportunities are available and enhance the visitor experiences for those traveling along the roadways.</p>		<p>and camping in developed campgrounds or staying overnight in a lodge.</p> <p>Visitors participate in various activities, such as hiking, biking, swimming, floating, climbing, camping, and fishing. Visitors also engage in ranger-led programs, camping, and picnicking.</p>	<p>connection to natural and cultural resources.</p>	<p>remote experiences at the Merced Grove.</p> <p>At each grove, visitors can wander through the forest and stand beneath the trees, gazing all the way up through their high branches to the sky above, feeling a sense smallness next to these ancient giants.</p>	<p>routes, traveling cross-country.</p>
Accessibility	N/A	<p>Vehicle travel provides visitors of all abilities opportunities to experience the vast Yosemite landscapes and see the beautiful views available throughout the park.</p>	<p>Accessible parking is available in all parking areas, and barriers to accessibility are removed where possible.</p>	<p>This zone provides the most accessible opportunities for visitors with a range of skills, abilities, and goals for their visits.</p> <p>Accessible parking is available in all parking areas, and facilities and services align with ADA requirements.</p> <p>Visitors of all skills and abilities can access comprehensive trail and site information to aid in decision-making and access.</p>	<p>Accessible parking is available in all parking areas, and barriers to accessibility are removed where possible.</p> <p>Visitors of all skills and abilities can access comprehensive trail and site information to aid in decision-making and access.</p>		<p>Accessible parking is available in all parking areas, and barriers to accessibility are removed where possible.</p> <p>Visitors of all skills and abilities can access comprehensive trail and site information to aid in decision-making and access.</p>
Commercial services	N/A	<p>Commercial services are a key provider of visitor use opportunities in the park. Road-based tours provide visitors opportunities to</p>	<p>Commercial uses do not occur in this zone.</p>	<p>Commercial services are a primary management component. Visitors can access various lodging, food, and souvenir options, as well as</p>	<p>Fewer commercial services are present. The primary role of any commercial service is transportation or guided hiking.</p>	<p>Fewer commercial services are present. The primary role of any commercial service is transportation or guided hiking.</p>	<p>Commercial services use will be consistent with NPS <i>Management Policies 2006</i> 6.6.4 and will "contribute to public education and</p>

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
		<p>move throughout the park without having to rely on their personal vehicles.</p> <p>Visitors have options to experience the beauty of the park via different types of road tours, including park-provided shuttles, concession operated tours, tour buses, or other guided options.</p>		<p>commercial guided and educational opportunities.</p> <p>Concession staff provide visitor services and contribute to an overall positive visitor experience.</p>			<p>visitor enjoyment of wilderness and visitor enjoyment of wilderness values or provide opportunities for primitive and unconfined types of recreation...”</p>
Sensory experiences	N/A	<p>Travel along the park’s roadways is a remarkable park experience in and of itself, as visitors are surrounded by the sights and sounds of Yosemite’s natural world.</p> <p>All transportation infrastructure contributes to a positive visitor experience and does not overpower the sights, sounds, and smells of the park’s natural and historic environment but complement the surrounding landscape. The design and maintenance of transportation infrastructure aligns with the cultural and natural landscape, is sustainable, and considers increasing the intensity and frequency of storms, wildland fires, flooding events, and other climate-related future conditions.</p>	<p>Natural sights and sounds dominate the landscape in the foothills zones, though the sights, smells, and sounds of vehicles may be heard proximate to roadways.</p>	<p>Modern developments dominate the landscape, but they are designed and maintained in such a way as to blend with the historical context and natural environment.</p> <p>Visitors can experience the roar of early season waterfalls, the feel of the mist, and the sound of rivers and creeks. Visitors also have the opportunity to experience historic viewsheds and dark night skies.</p> <p>Wildlife viewing is abundant during certain times of day and night, and visitors have the opportunity to experience the natural sounds of bird calls and songs and other wildlife sounds.</p>	<p>Visitors are further away from highly developed areas and begin to feel more immersed in the natural resources. Visitors would begin to experience more of the natural sights, sounds, and smells of the Yosemite ecosystem.</p> <p>Visitors can experience the roar of early season waterfalls, the feel of the mist, and the sound of rivers and creeks. Visitors also have the opportunity to experience historic viewsheds and dark night skies.</p> <p>Wildlife viewing is abundant during certain times of day and night, and visitors have the opportunity to experience natural sounds of bird calls and songs and other wildlife sounds.</p>	<p>The <b>Mariposa<sup>25</sup> Grove</b> provides a spectrum of opportunities between the lower and upper groves. The lower grove is the primary location for visitor enjoyment and the interpretation of the giant sequoia, providing the most accessible experience and accommodating the highest levels of use among the three groves. Visitor facilities are consistent with the preservation of the unique ecosystem, and any facilities not necessary for visitor enjoyment of the resource are removed. (1980 general management plan). The upper grove is much less developed, providing a more rustic type of experience. The Mariposa Grove is a “park within a park” and an important historic district distinguished for its natural resource values.</p> <p>Visitors of all skill levels and abilities have the opportunity to connect with the giant sequoia trees and</p>	<p>Natural sights and sounds dominate the landscape in the foothills zones, though the sights, smells, and sounds of vehicles may be heard proximate to roadways.</p>

25. The Mariposa Grove national register nomination will be updated and integrated. These desired conditions will be updated once more details are known.

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
						<p>the cultural and natural history of the grove through personal and nonpersonal interpretation and a range of trail types and experiences.</p> <p>Visitors to the <b>Tuolumne Grove</b> can experience relative quiet and levels of low-to-moderate visitation while having access to basic amenities such as restrooms, paved parking, and a walking trail to and through the grove. Visitors can learn about the grove through interpretive signage and basic orientation panels in the parking area and throughout the walk into the grove.</p> <p><b>The Merced Grove</b> is the least-developed grove and provides enhanced opportunities for quiet where natural sounds dominate, and visitors can hear the breeze rustling through the foliage or the sound of a woodpecker calling or tapping against a tree. Minimal facilities are available.</p>	
Seasonal	N/A	During the winter, the Tioga Road corridor and Glacier Point Road past Badger Pass are managed as wilderness, accommodating lower amounts of visitation, and emphasizing solitude and unconfined recreation.		<p>Visitors have the opportunity for year-round recreation, with more opportunities to experience fewer crowds during the winter months.</p> <p>Visitors will experience quickly changing conditions in the winter months, with feet of snow not being uncommon. Visitors can ski, snowshoe, and</p>	<p>Visitors have the opportunity for year-round recreation, with more opportunities to experience fewer crowds during the winter months.</p> <p>Visitors will experience quickly changing conditions in the winter months, with feet of snow not being uncommon. Visitors can ski, snowshoe, and participate in</p>	Visitors have the opportunity for year-round access to the Sequoia Groves.	

Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
				participate in other winter sports, weather permitting.	other winter sports, weather permitting.		
Overnight use	N/A	N/A	N/A	<p>Overnight experiences in this zone are characterized by higher levels of development. Visitors have the opportunity for a range of experiences from tent camping in large, developed campgrounds to full-service lodges.</p> <p>Campgrounds in this zone tend to be larger, highly developed, and easily accommodate large recreational vehicles.</p> <p>Overnight visitors have easy access to amenities including flush toilets, and potable water.</p> <p>Visitors may experience high levels and density of visitor use in campgrounds, overnight parking areas, and other overnight accommodations.</p> <p>Despite higher densities of visitors and amenities, visitors have the opportunity to experience dark night skies, wildlife viewing, and other resource-based experiences facilitated by overnight accommodations in the park.</p>	<p>Overnight experiences in this zone are characterized by lower densities of visitors, fewer and more rustic amenities, and limited development.</p> <p>Visitors should expect to need a higher degree of self-reliance and limited support from park staff. Visitors will see fewer signs, limited interpretation, and generally a less developed experience than in other high use areas.</p> <p>Opportunities to experience dark night skies, nocturnal wildlife species, and other park resources connected to overnight use may be higher in this zone.</p>	N/A	<p>Overnight experiences in this zone are characterized by lower densities of visitors, fewer and more rustic amenities, and limited development.</p> <p>Visitors should expect to need a higher degree of self-reliance and limited support from park staff. Visitors will see limited signs, limited interpretation, and generally a less developed experience than in other areas.</p> <p>Opportunities to experience dark night skies, nocturnal wildlife species, and other park resources connected to overnight use may be higher in this zone.</p>
Natural resources	<p>Development and intensive use may substantially alter the natural environment or the setting.</p> <p>Impacts associated with this development will be mitigated to the greatest extent possible.</p>	<p>Natural resources are protected from the road and impacts from vehicle presence and traffic patterns. Vegetation bordering roads and parking areas is not trampled or otherwise damaged. Wildlife moves safely throughout the area, and there are no collisions or vehicle strikes. Visitors learn about and understand human and vehicular impacts on the park's flora and fauna and</p>	<p>Development is limited to dispersed recreational and essential management facilities that have no adverse effect on scenic quality and natural processes and that are essential for management, use, and the appreciation of natural resources.</p>	<p>Natural resources are highly altered in this zone to accommodate the built environment and large numbers of visitors. However, the National Park Service seeks to mitigate impacts, as possible, particularly on wildlife and vegetation bordering the area. Wildlife can move throughout the area, but park staff may take a more direct management approach to their presence in this area</p>	<p>Visitors could begin to hear more of the natural sounds of the Yosemite ecosystem.</p> <p>Some alterations to natural resources would occur in this area, but the National Park Service would prioritize resource health. Wildlife can move freely throughout the area, accessing their habitats and food sources with minimal human intervention.</p>	<p>The massive giant sequoias in the Mariposa, Tuolumne, and Merced Groves and their surrounding habitats are protected from harmful impacts and disturbances outside the natural range of variability. The groves are managed to ensure the long-term health of the trees, restoring hydrologic functions, and removing stresses to the iconic trees. The sequoias are an</p>	<p>Natural resources are prioritized in this zone, in addition to wilderness character. Natural systems and processes are permitted to follow their courses with minimum intervention.</p>



Updated Zone Name	Administrative and Yosemite Community Zone	Roadway Zone	Open Space Natural Zone	Recreation and Visitor Services Zone	Low Development Natural Recreation Zone	Giant Sequoia Zone	Wilderness Zone
		understand how to minimize them.				example of a healthy grove ecosystem.	
Cultural resources	Cultural sites are avoided, or if disturbance is inevitable, all construction and mitigation prescribed to prevent any adverse effect will be accomplished. (1994 river management plan).	The historic character of roadways, scenic vistas, and other associated features are preserved or rehabilitated, conveying a different feeling than areas outside of the park. Development beyond the existing footprint is minimized, and any design changes are consistent with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> .	Cultural resources are highlighted, where appropriate, and managed for the protection of the resource, while providing some visitor access and light interpretation where appropriate. Intentional management may be needed in this zone to provide protection for particularly sensitive cultural or archeological resources.	Development blends with and supports the character, integrity, and historic significance embodied in the park's cultural landscapes, including the historic motor road system, structures, and campgrounds.	Development blends with and supports the character, integrity, and historic significance embodied in the park's cultural landscapes, including the historic motor road system, structures, and campgrounds.	Development blends with and supports the character, integrity, and historic significance embodied in the park's cultural landscapes.	A range of options for historic structures will be considered historical values will be considered in the management of wilderness consistent with NPS management policies.

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## **Additional Management Direction**

**Designated wild and scenic river corridors:** Within Yosemite National Park are two designated wild and scenic rivers. The *Merced Wild and Scenic River Comprehensive Management Plan* (2014) and *Tuolumne Wild and Scenic River Comprehensive Management Plan* (2014) include management direction for the areas in these river corridors. Desired conditions (management goals) for river values, as well as appropriate activities and facilities and series in these corridors, are in chapters 5 and 6 of these plans. For details on where this guidance applies, see chapter 2 of the comprehensive river management plans for a description of the river corridor boundaries.

- “Wild” segments, such as those segments of the Merced and Tuolumne Rivers in designated wilderness, are free of impoundment and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and water unpolluted.
- “Scenic” river segments, such as the Tuolumne River in Tuolumne Meadows and the Merced Gorge from the junction of El Portal Road and Big Oak Flat Roads to the park boundary, may contain discernible development. A scenic segment retains its overall natural character but may have structures or concentrations of structures in short reaches of the total area. Scenic segments may be accessible in places by roads.
- “Recreational” segments, such as the Merced River in East Yosemite Valley and the South Fork of the Merced River at Wawona and the Wawona Impoundment, are defined as being readily accessible by road and may have roads paralleling the river on one or both banks, as well as bridge crossings. Recreational segments may also have some residential, commercial, or similar development and may have evidence of impoundment or diversion.

**Yosemite Wilderness:** Officially designated by the California Wilderness Act in 1984, the Yosemite Wilderness area encompasses more than 94% of Yosemite National Park and is currently managed under the 1989 wilderness management plan. Areas in the Yosemite Wilderness are managed consistent with the guidance in the 1964 Wilderness Act and its associated implementing policies (e.g., Director’s Order 41: *Wilderness Stewardship* and the associated Reference Manual 41).

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# APPENDIX C: INDICATORS AND THRESHOLDS FOR VISITOR USE MANAGEMENT MONITORING

## INTRODUCTION

As part of the proposed action described in chapter 2, the National Park Service would implement indicators, thresholds, monitoring protocols, and management strategies specific to visitor use at Yosemite National Park to assist in achieving and maintaining desired conditions. The development of these components follows the guidance of the Interagency Visitor Use Management Council’s Visitor Use Management Framework (IVUMC 2016). Indicators translate the desired conditions identified in “Appendix B: Zoning and Desired Conditions” into measurable attributes (e.g., linear extent of visitor-created trails) that, when tracked over time, evaluate changes in resource or experiential conditions from visitor use. These are critical components of monitoring the success of management actions and strategies. Thresholds represent the minimum acceptable condition for each indicator and were established by considering the desired conditions, data on existing conditions, relevant research studies, and the professional judgment of staff from management experience. An additional monitoring tool is the use of triggers, which identify indicator conditions that are concerning enough to prompt a management response before the relevant threshold is crossed (see Figure C-1).

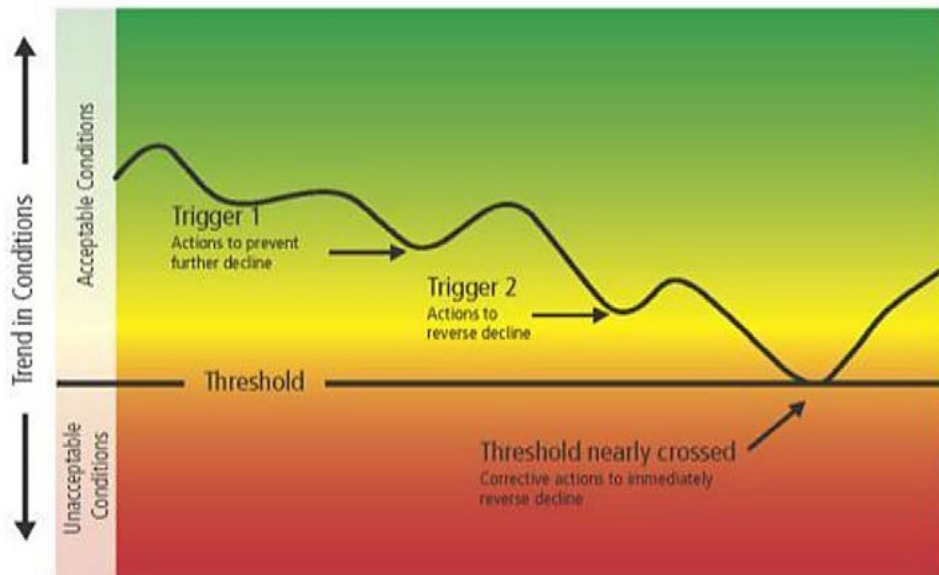


FIGURE C-1. MANAGEMENT TRIGGERS AND THRESHOLDS IN RELATION TO TREND IN CONDITIONS

The indicators identified in this document do not represent an exhaustive list of all monitoring that is currently and will continue to be conducted at Yosemite. Because of its mandate to preserve the resources within the park, the National Park Service already has a robust monitoring program for its cultural and natural resources that has been ongoing and will continue. The indicators identified in this plan were selected to evaluate changes in conditions related to visitor use levels and behaviors. They consider which changes in resource conditions would prompt a different management response and what changes would cause the most

concern. Additionally, the indicators are meaningful to the purpose of the park, sensitive to change so they can be monitored, and directly connected to visitor use.

For each indicator, management strategies have been identified to keep conditions within acceptable thresholds or to assist the National Park Service in achieving certain objectives. Several of these strategies are currently in use but may be increased or altered in frequency and/or intensity in response to changing conditions. These strategies represent a range of potential actions that the National Park Service could take to best meet the purpose and need of this plan and maintain desired conditions.

The strategies identified to keep conditions within thresholds or assist park managers in meeting objectives will be implemented as part of this plan. Adaptive management strategies are also identified, which will be implemented based on feasibility, staff resources, and funding and only if and when conditions warrant action. Thresholds may be approached or exceeded due to many issues, both related to the proposed actions under the alternatives (e.g., the reservation system), but also due to other extenuating circumstances that occur within Yosemite (e.g., rock falls, entry closures, and fires).

The interdisciplinary planning team considered the central issues driving the need for the plan and selected related indicators that would help identify when the level of impact would become cause for concern to the extent management action is needed. The indicators described below were considered the most critical, given the importance and vulnerability of the resource or experience affected by the level and type of visitor use. The indicators were also informed by current and ongoing monitoring.

The indicator topics and associated indicators are as follows:

- Crowding and queuing at entrance gates: wait time to enter Yosemite National Park
- Vehicle congestion in parking areas: vehicles at one time at key parking areas
- Vehicle congestions along roadways: vehicles at one time along road corridors
- Number of vehicles entering before reservations start

Yosemite National Park has a robust monitoring program on myriad topics related to natural and cultural resources represented in the *Merced Comprehensive River Management Plan (2014)* and the *Tuolumne Comprehensive River Management Plan (2014)*. For additional monitoring commitments, see chapter 5 of those respective plans.

## **CROWDING AND QUEUING AT ENTRANCE GATES: WAIT TIME TO ENTER YOSEMITE NATIONAL PARK**

**Indicator:** Length of wait for arriving visitors to pass through an entrance station

### **Rationale**

Effective visitor use management considers more than just a visitor's time in the park itself, but the full experience cycle, including trip planning, travel, arrival and orientation, departure, and

recollection. This indicator is important to provide insight on the arrival experience and to inform park staff if waits to enter the park are trending towards or exceeding thresholds.

Arrival to and movement through any of the park's entry points are key considerations for the visitor experience. As visitation has increased over the last 10 years, so have delays and wait times for visitors to get through the gates. Rangers have had reports of waits over four hours and averaging around two hours regularly during peak hours in the busy summer months. This indicator considers the beginning of the wait to be the point at which vehicles must slow to a stop as they approach an entrance.

Park staff identified a desired condition around arrival at Yosemite that “visitors arrive prepared for their experience at Yosemite. Entrance stations welcome them into the park and represent entry into an area set aside for the preservation of its unique character and values. While visitors may have to wait before they can enter the park, the experience is safe, sustainable, and does not diminish the overall quality of the visitor experience. Entrance station operations function efficiently” (see appendix B for the full list of desired conditions).

Overall, wait time literature has found that an increase in wait time generally leads to a decrease in satisfaction (Davis and Volmann 1990; Davis and Heineke 1998) and that perceived wait time (or estimated wait time) can have a greater impact on satisfaction than the actual measured wait time (Katz et al. 1991; Pruyn and Smidts 1998). The entrance stations represent the arrival at one of the most magnificent natural wonders in the world, and a long wait that may be unexpected and frustrating, can set the wrong tone for a visit. While there is increasing awareness around the high visitation to Yosemite, many visitors do not expect to have a long wait, particularly a two-hour or longer wait, to be able to begin their visit.

Delays at the entrance stations affect everyone: visitors, staff, concessioners, neighbors and gateway communities, and Tribes. If the line is past a certain point, staff cannot get through to do their work. Lines may also impact access for emergency vehicles to address visitor safety. Further, managing operations at the entry gates requires enough staffing to accommodate all the visitors, taking payments, providing information, and—for any sort of managed access system—verifying information and potentially redirecting people who don't have a reservation. Beyond the need for staff presence, working at the entry gates in these conditions can be extremely challenging on staff morale. If managed well, the line and entry gates can be beneficial to management, as they pace cars coming through and welcome visitors to the park.

### **Threshold and Associated Response**

During regular operations, wait times do not exceed 1 hour for more than 3 hours per day.

## Trigger and Associated Response<sup>26</sup>

- Trigger 1 for days/hours outside of the reservation season: Wait times exceed 1 hour for more than 2 hours per day (at any time) on 2 days per week for 4 consecutive weeks at 2 or more entrances.
  - Management response: Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas. Expand days of the year or times of day when reservations are required for entry, focusing on the days when the trigger is reached (e.g., weekends). Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas.
  - If at one entrance station, take management action specific to that area to improve gate processing.
- Trigger 1 for days during the reservation season: Wait times exceed 1 hour for more than 2 hours per day on 2 days per week for 3 consecutive weeks.
  - Management response: Adjust reservation system numbers to reduce wait times, focusing on days when this is happening.
- Trigger 2 for days during of the reservation season: Wait times exceed 1 hour for more than 2 hours per each day more than 2 days per week for more than 6 weeks for 2 consecutive years.
  - Management response: Modify entrance station operations as feasible and technology allows.
  - Management response, alternative C: Adjust reservation numbers.
  - Management response, alternatives B and D: Start the process to transition to alternative C.
  - Management response, alternative D: Start the process to transition to alternative B.

## EARLY MORNING ARRIVALS

**Indicator:** Number of vehicles entering before reservations start

### Rationale

This indicator monitors arrivals of vehicles into the park before a reservation system begins. Under all action alternatives (alternatives B, C, and D), vehicles without reservations are able to enter the park before 5:00 a.m. Park staff have determined that providing this opportunity to all visitors is important, and all alternatives account for a certain number of pre-reservation arrivals

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26. Triggers for this indicator assume that all major roadways and associated entrance stations in the park are open and fully functional. Wait times at entrance stations that are impacted by unforeseen events, such as unplanned road closures, wildland fires, or later than normal road openings due to heavy winter snowpack, would not be counted toward this threshold or associated triggers.



when identifying how many reservations could be available for that day. However, they also acknowledge the importance of monitoring conditions related to these early arrivals and other desired conditions. For example, if the parking areas are filling too early in the day, visitors who do have reservations would not be able to find parking. This conflicts with the desired conditions defined by Yosemite staff stating that “Visitors have a reasonable opportunity to visit their primary destination in the park. While congestion occurs and some wait may be involved, visitors can access their desired services and destinations in a reasonable time” (see appendix B).

The first parking areas to fill up are those within Yosemite Valley, but others can fill up early as well, including at many trailheads. If these parking lots were to be full or even three-fourths full before those with reservations are able to enter and access areas, this would not be consistent with the objectives of a reservation system.

Additionally, there are natural resource concerns about the number of vehicles on the road in the early morning when many wildlife species are most active. Desired conditions for natural resources include that “native wildlife populations thrive and freely use their habitats with minimal human influence or conflicts.” Further, and specific to roadways and developed areas, “the National Park Service seeks to mitigate impacts, as possible, particularly on wildlife and vegetation boarding the area.”

Roadways can be very dangerous for a variety of animals, including threatened and endangered species, that frequent the area. Park staff have monitored wildlife strikes over the years, noting especially the number of bears that are struck along roadways each year. If the non-reservation time period pushes more vehicles earlier in the day and this leads to unacceptable changes related to vehicle strikes of wildlife, responsive management would be taken as discussed below.

## **Thresholds**

Total number of inbound cars cannot exceed 30% of available Yosemite Valley parking within the first 2 hours of the reservation system on more than 25% of days when reservations are in place.

## **Triggers and Associated Responses**

- **Trigger 1:** Total number of inbound cars exceeds 30% of available Yosemite Valley parking within the first 2 hours of the reservation time on more than an average of 2 days per week (average) for the weeks when reservations are in place
  - **Management response:** Adapt reservation systems to start at 12:00 a.m. (midnight) to manage all morning arrivals for areas where reservations apply on days that have reached the trigger.
- **Trigger 2:** Documented excessive vehicle mortality of wildlife species (including bears) beyond historical norms
  - **Management response:** Evaluate the location and cause of the strike and implement site specific action for the roadway corridor of concern or adapt the reservation system to start at 12:00 a.m. (midnight if a discrete area cannot be identified).

- Trigger 3: Wildlife location data indicates increased risk of road mortality to sensitive wildlife species
  - Management response: Evaluate the data source, type, location, and timing to (1) identify and implement site-specific action for the roadway corridor of concern OR (2) if no action is sufficient to acceptably lower the risk, modify the reservation system start time (to 12:00 a.m. or later) at one or more entrance station(s) based on location and temporal wildlife movement information.

## **VEHICLE USE OF PARKING LOTS**

**Indicator:** Vehicles at one time in key parking areas

### **Rationale**

This indicator informs management when parking areas are filled to or have exceeded capacity. Parking lot capacities provide a useful threshold for when conditions are at their minimally acceptable level—at the capacity for which they were designed. Instances in which parking lot capacities are exceeded are indicative of vehicle congestion, potential safety concerns, and possible park resource impacts stemming from vehicles parking in unauthorized areas (Lawson, Newman, and Monz 2017). Further, when visitors cannot find a parking spot, it can lead to frustration and diminish the quality of the visit.

Vehicles at one time in parking lots will be used as an indicator of transportation and access conditions at specific destinations. Parking lots provide visitors with access to important park resources and experiences, including viewing scenery, hiking on trails, visiting historic and cultural sites, and walking or biking. Monitoring vehicles at one time at one or more of these locations provides a reasonable basis for which overall transportation and access conditions at visitor destinations can be inferred.

This indicator includes parking lots in the east valley, where parking generally fills up first, and outside Yosemite Valley, focusing on the locations that are expected to fill next. The key locations that may be monitored for this indicator include, but are not limited to, the Yosemite Falls day-use lot, roadside parking in west Yosemite Valley, Tenaya Lake, Glacier Point, Tuolumne Grove, and Tuolumne Meadows. Locations may vary based on the selected alternative.

This indicator informs NPS management about how visitation levels are impacting the ability for visitors to park. The thresholds are determined such that the permit system in each alternative can be fully used without hitting the thresholds. Minor adjustments to the number and/or timing of reservations may occur over time to maximize use of these areas, while protecting resources and values and to achieve desired conditions.

### **Threshold**

Vehicles at one time does not exceed the design capacity of parking lots at the visitor destination more than 25% of the time (about 2.5 hours per day or 17.5 hours per week) during the peak hours of the day (8:00 a.m.–6:00 p.m.).

## Triggers and Associated Responses

- Trigger 1 (for non-reservation days or times): Vehicles at one time exceeds the design capacity of monitored parking lots for more than 20% of the time during the days or times when reservations are not in place for 2 consecutive years
  - Management response: Expand days of year or times of day when reservations are required.
- Trigger 2 (for alternatives B and C): For parking lots in Yosemite Valley, vehicles at one time exceeds the design capacity of parking lots 2 days per week for 6 consecutive weeks or 4 days per week for 3 consecutive weeks
  - Management responses:
    - Lower the numbers of total reservations.
    - Move to timed entry, shift the time of required reservations (earlier or later), or lower the numbers of total reservations.
- Trigger 3 (for alternative D): Lots outside of Yosemite Valley: Vehicles at one time exceeds the design capacity of parking lots more than 20% of the time per day during peak hours of the day (8:00 a.m.–6:00 p.m.) on 2 days per week for 6 consecutive weeks for 2 years
  - Management response: Move to a parkwide system—alternative B or C.

## VEHICLE CROWDING ON ROADWAYS

**Indicator for alternative D:** Peak hour vehicles at one time within key road corridors

### Rationale

This indicator monitors vehicle accumulation in the park. Crowding, conflicts, and congestion along road corridors lead to natural resource damage, diminished visitor experience, limited access, entrance/egress for emergency vehicles, and impacts on routine facility maintenance. In alternative D, areas outside of Yosemite Valley are not managed with vehicle reservations. Currently during peak times, vehicle levels along some travel corridors can exceed parking capacity, and traffic jams and slowdowns are regularly observed. This condition could continue under this alternative, so monitoring of this indicator is important to help maintain desired conditions for travel and access in these areas of the park.

This indicator will monitor whether vehicle volumes along the four primary road corridors in the park are consistent with management goals and desired conditions. If monitoring this indicator reveals that the desired condition for roadway flows and, therefore, the ability for visitors and staff to safely travel through the park and access their destinations, are not being met, park staff would consider additional strategies, including expanding the reservation season, adjusting timed entry, or adjusting numbers of reservations.

The geographic focus for this indicator includes the four key travel corridors within the park and is a measure of peak hour vehicles at one time within the three corridors major travel corridors: Glacier Point Road, Wawona Road, and Tioga Road.

### **Threshold and Objective**

**Threshold:** Vehicles at one time in each corridor does not exceed the identified vehicle use level of available parking and roadway volumes more than 20% of daylight hours

**Objective:** Vehicles at one time in each corridor remains above 60% of available parking and roadway volumes on weekend days

### **Triggers and Associated Responses**

- Trigger 1 (days outside of the reservation season): Vehicles at one time exceeds the peak hour vehicles at one time of the road corridor more than 2 days per week for 3 consecutive weeks
  - Management response: Increase monitoring for trails and parking areas to ensure that desired conditions are being met in those areas.
- Trigger 2 (days outside of the reservation season): Vehicles at one time exceeds the peak hour vehicles at one time of the road more than 2 days per week for 2 consecutive years on at least 2 corridors
  - Management response: Expand the days of the year or times of day when reservations are required for entry. Start the process to implement alternative B or C.
- Trigger 3 (days during the reservation season): Peak hour vehicles at one time in the corridor exceeds the available parking and roadway volumes 85% of the time during daylight hours
  - Management response: Adjust the number of reservations.

### **OTHER RELATED MONITORING**

These additional indicators have been identified by park staff as important to monitor to understand how strategies and actions proposed in this plan impact resources. Park staff have identified desired conditions related to cultural and natural resources that outline the importance of their continued preservation. Desired conditions state that “natural resources are regularly inventoried, monitored, and actions taken to protect them.” Further, they state that the “integrity of [ethnographic, archeological, and historic resources] are intact.” These indicators could be impacted by changes to visitation patterns or amounts and types of uses and, therefore, are included to help track desired conditions over time.

These additional indicators do not have associated thresholds or triggers and do not independently trigger management responses. Rather, park staff would track changes in trends across this range of indicators and take action as necessary to maintain desired conditions.

## **Visitor Densities and Crowding: Visitor Densities at Key Destinations**

Crowding has been shown to negatively affect the quality of the visitor experience (Whittaker and Shelby 2010). The term “visitor density” refers to the number of people in a given area and is a common descriptive measure often correlated with “perceived crowding,” which is a negative evaluation of the visitor density. This indicator is the same as the people at one time visitor density indicator outlined in the *Merced River Plan* (see pages 5–132 to 5–134), but additional locations have been added to monitor implementation of the visitor access management plan, and these locations are expressed terms of density. The visitor densities assigned to these additional locations correlate to the types of locations established in the *Merced River Plan*, including viewing platforms, trails, and high-use beaches.

These additional sites were selected because they are high-visitation areas and will inform park management if crowding is occurring. The new areas are as follows:

- Tenaya Lake beach area on the northeastern side of Tenaya Lake
- Glacier Point main viewing platform, east of the gift shop
- Wawona Swinging Bridge

## **Visitor Impacts on the Historic Curry Village Orchard: Change in the Cultural Resource Inventory System Condition Assessment for Curry Village Orchard Due to Visitor Use Impacts**

In the 1860s, fruit orchards were planted in Yosemite Valley to provide food for people and livestock. Curry Orchard is part of the Camp Curry Historic District within East Yosemite Valley. The orchard was adapted to a popular, busy parking area where visitors and cars are regularly moving throughout the orchard. The park identified desired conditions that “Yosemite protects ethnographic, archeological, and historic resources that represent a diversity of people and histories. The integrity of these resources is intact to convey broad patterns of history, connections to people and history. . . .”

Concerns around this area include the effects of overgrowth on parking spaces, safety concerns, and issues with the ability to harvest the apples before they attract black bears into the area. Monitoring the condition of the historic area and resources will inform park management about how current visitor use in the area may be affecting the resources (Yosemite Conservancy 2020).

## **Visitor-Created Trails: Linear Extent of Visitor-Created Trails in Sensitive Environments**

This indicator measures visitor-created social trailing that branches from formal trails. The development of these visitor-created trails can lead to erosion, resource concerns, and visitors straying from the formal trail to access sensitive areas such as cultural, vegetative, or wildlife areas. Visitor-created social trails are developed when visitors leave the formal trail network, trampling vegetation and creating a visible path. With time and repeated use, visitor-created social trails can become indistinguishable from formal trails and can appear to be part of the formal network. The development and use of social trails can present safety concerns and

negative impacts on experience, as visitors are no longer supported by wayfinding signage and can get lost. Further, social trails impact resource health, particularly vegetation trampling or loss, also leading to habitat fragmentation. By identifying social trails, park staff can close unsustainable trails impacting sensitive areas. This indicator is specifically related to the Sequoia Groves and unacceptable access to the trees or other sensitive locations (such as alpine and meadow environments).

### **Soundscapes: Change in Percent Time above Sound Level of Concern**

Soundscapes in national park system units offer an array of rich and diverse natural sounds in an environment relatively free of sounds generated by humans. These soundscapes are integral to wildlife and ecological health and are an important component of what makes the park a unique place, set aside for purposes expressed in both the NPS Organic Act and the Wilderness Act. Preserving and restoring natural soundscapes are, therefore, an important part of the NPS mission. Intrusive noise impacting natural sounds are of concern because they can impede ecological functions and diminish the National Park Service's ability to accomplish its resource protection mission. Intrusive sounds are also a matter of concern to park visitors. Visitors at Yosemite directly contribute to the park's soundscape via transit into and within the park, most notably Yosemite Valley.

### **Ravens: Presence of Ravens in Yosemite Valley**

The presence of ravens is important to monitor because it is indicative of negative impacts on the ecosystem and wildlife habituation. Studies show that numerous native wildlife species experience elevated predation rates from ravens, which have not always been present in Yosemite, as raven populations increase (Coates et al. 2021). This is particularly problematic during nesting periods, which can hamper the recovery of species, including those that are state or federally protected (Coates et al. 2021). At Yosemite, the ecological impact of nest predation is problematic for an already declining songbird population. The presence of ravens is also indicative of wildlife habituation, or behavioral changes in wildlife. Ravens flock to areas with high human use and human food waste, resulting in wildlife habituation and potentially aggressive behavior. These changes in behavior detract from positive visitor experiences at the park as ravens increase as a nuisance species. Measuring the presence of ravens at Yosemite can help park staff determine how many ravens can be tolerated while also supporting sensitive species such as songbirds.

## APPENDIX D: VISITOR CAPACITY

### OVERVIEW

This section provides additional information about the visitor capacity identification as it relates to the visitor use management framework for the visitor access management plan. For a full description of the Interagency Visitor Use Management Council (IVUMC) Framework and additional resources, please visit <https://visitorusemanagement.nps.gov>.

Broadly speaking, visitor use management is the proactive and adaptive process of planning for and managing the characteristics of visitor use and its physical and social setting using various strategies and tools to sustain desired resource conditions and visitor experience. Within this framework, desired conditions, indicators and thresholds, and management strategies have been drafted. Another component of this framework is the development of visitor capacities.

The Interagency Visitor Use Management Council defines visitor capacity as the maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established. By managing amounts and types of use, the National Park Service can ensure that resources are protected and that visitors have the opportunity for a range of meaningful and enjoyable experiences. Visitor capacities will be used to inform and implement the management strategies selected as part of this plan.

Through this planning effort, Yosemite managers have an important opportunity to proactively safeguard the highly valued experiences and resources throughout the park unit. This appendix outlines the considerations and process used to determine visitor capacity for areas of the park not adequately addressed by previous planning efforts.

### VISITOR CAPACITIES IDENTIFIED IN PREVIOUS PLANNING EFFORTS

Yosemite's 1980 general management plan identified visitor use levels that could be accommodated by then-current and planned facilities in developed areas in the park. These levels were based on the supply of parking that would be available at destinations and at outlying parking areas, as well as the number of visitors who would likely enter the park on tour buses. Although valuable for guiding ongoing management, these identified use levels were not fully analyzed. Visitor capacities and associated implementation commitments were not identified to satisfy today's legal requirements. More recent planning has provided the necessary analysis, documentation, and implementation strategies that are required for visitor capacities to adequately address requirements. These recent plans supersede the guidance from the general management plan.

Yosemite's two most recent plans, the 2014 *Merced Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement* and the 2014 *Tuolumne Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement*, include the identification of visitor capacities for areas within the respective scopes of these plans that align with legal requirements and current agency and national guidance. The visitor capacities identified in these previous plans are carried forward in this plan and inform the identification

of capacities for other areas in the park, as well as how to best manage the flow of visitors between areas.

The *Merced River Plan* includes capacities for the designated river segments (which includes the river and a 0.25-mile buffer from the ordinary high-water mark onto the adjacent riverbanks). These capacities cover areas within west and East Yosemite Valley, the town of Wawona, and the administrative site at El Portal. These capacities are provided as people at one time within the area for day, overnight, and/or administrative uses.

Similarly, the *Tuolumne River Plan* provides capacities for each designated river segment (which includes the river and a 0.25-mile buffer from the ordinary high-water mark), which covers most of the Tuolumne Meadows area, providing day use, overnight use, and administrative use capacities. These capacities are defined as people at one time within the area for day, overnight, and/or administrative uses.

Yosemite National Park has existing wilderness trailhead quotas for overnight use, informed by the 1989 wilderness plan, that are important to consider in relation to nonwilderness use (i.e., wilderness users pass through the frontcountry areas to get to wilderness destinations). While this plan does not cover decisions within wilderness areas themselves, it does cover transition zones and areas that prepare users for their wilderness experiences. Existing trail quotas are important to consider for trailheads and other areas that connect to the wilderness to ensure that use levels stay within the quotas. These quotas were identified in the 1989 plan and have had some slight adjustments over time, based on lessons learned, but are primarily the same. They were developed considering wilderness character and resource protection needs. These quotas were established for specific trailheads in the different wilderness management zones.

## **PROCESS FOR IDENTIFYING VISITOR CAPACITIES**

Visitor capacities were determined using best practices and examples from other plans and projects across the National Park Service. The process for identifying visitor capacity follows four guidelines: (1) determine the analysis area, (2) review existing direction and knowledge, (3) identify the limiting attribute, and (4) identify visitor capacity and implementation strategies. This section of the plan outlines the considerations and processes used to identify visitor capacity for key destinations.

This analysis uses the best available information to make decisions for the current management of visitor use. Should there be meaningful changes, such as those outlined below, park managers may reevaluate and update the visitor capacity. The criteria that may warrant a reevaluation of capacity or updating strategies to manage to capacity are as follows:

- evidence indicates that thresholds are being approached,
- evidence indicates that park conditions are trending away from desired conditions,
- park managers have meaningful new knowledge or understanding of the relationship between visitor use and impacts on resources or visitor experiences, and
- changes to the desired conditions have occurred.



Following guidance from the Interagency Visitor Use Management Council, the level of analysis that occurs during visitor use management planning and visitor capacity identification is determined on a sliding scale, depending on the complexity and context of the plan. The sliding scale of analysis is used to ensure that the investment of time, money, and other resources for identifying visitor capacity is commensurate with the complexity of the project and the consequences of the decision. The sliding scale focuses on four criteria: issue uncertainty, impact risk, stakeholder involvement, and level of controversy or potential for litigation (IVUMC 2016). A higher level of analysis has been identified as necessary for the key locations due to the visitor use issues present. For the other locations, desired conditions are being met under current use levels. These locations are lower on the sliding scale, and a lower level of analysis is being conducted. Future monitoring of use levels and indicators will inform the National Park Service if use levels are nearing visitor capacities. If so, management strategies, as outlined in this plan, will be implemented.

The sites addressed in the visitor access management plan are divided into two categories: key locations and other areas. Key locations are destinations where high levels of use are causing resource impacts and threatening desired conditions. For these locations, a detailed analysis has been conducted to determine the appropriate level of use. Management strategies have been developed and will be implemented to ensure visitor use at these sites remains at or below the established capacity and desired conditions are achieved. For each key location, an overview of the setting, visitor use issues, current use levels, limiting attributes, and visitor capacity are described. The understanding of current use levels is informed by relevant studies and data. The actions contained in each alternative were considered as part of the capacity identification. Some management actions seek to resolve current visitor-caused impacts and, therefore, allow for higher use levels as part of the capacity.

Relevant desired conditions, for both resources and visitor experiences, were reviewed for each site as part of this process. For descriptions of the desired conditions by management zone, see Chapter 2: Alternatives. Visitor capacities are most frequently expressed as number of people at one time. People at one time refers to the total number of people that are present at a site at any given point in time. Visitor capacities within this document are also expressed as vehicles at one time, which is the total number of vehicles that can be present in the area at any given point in time. Delineations of sites may vary depending on the specific location; monitoring can be done in various ways but should serve to approximate, as best as possible, the total number of people present at a location.

These visitor capacities will be implemented as part of this planning effort. Where applicable, the specific management strategies that will be used to implement visitor capacities in the alternatives have been included. Twelve key locations have been identified as follows:

- Hetch Hetchy
- Tioga Road corridor
- Tenaya Lake
- Sequoia Groves

- Mariposa Grove
- Tuolumne Grove
- Merced Grove
- Glacier Point Road corridor and related trailheads
  - Sentinel Dome Trailhead
  - Glacier Point overlook
  - Badger Pass Road: winter analysis area
- Tunnel View

Other areas of the park (trails, summits, and other destinations) are subject to this legal requirement to define visitor capacity. However, as decisions about the management of these areas are out of scope for this plan, these capacities will be identified in subsequent planning.

## METHODOLOGICAL CONSIDERATIONS

Park managers must understand multiple inputs and use sound professional judgment to identify visitor capacities (IVUMC 2019; Whittaker et al. 2011). Resource inputs include the sensitivity of the surrounding natural and cultural resources such as rare plants, cultural sites, and wildlife. Social inputs include crowding, safety, soundscape, conflict between visitor uses, wildlife-human conflict, trail conditions, and quality of view (IVUMC 2019). Monitoring visitor use to understand if existing use levels and visitation patterns are achieving desired conditions for resource protection and visitor experience is an important component of identifying visitor capacity. Yosemite National Park has visitor use data, social science, and ongoing resource monitoring to inform decision-making for this plan.

To determine the appropriate amount of use at one time at key locations, a variety of data were reviewed to understand current conditions compared to desired conditions. Visitation data are collected annually by NPS staff to track levels of visitor use parkwide.

Where necessary, approximations have been made. For instance, a persons-per-vehicle (PPVh) multiplier has been used to estimate the average number of people (PAOT) who come to a site based on private vehicle use (VAOT). While some vehicles may include more or less than the multiplier used, it represents a reasonable average. The PPVh used at Yosemite National Park is 2.9 persons/vehicle (NPS 1994). Often, these numbers are rounded up to account for the potential error in the assumptions.

$$\text{VAOT} \times \text{PPVh} = \text{PAOT}$$

A threshold for acceptable vehicle density for roadways, as defined in the *Merced River Plan* to support desired conditions, was also taken into consideration in the identification of visitor capacities. The *Merced River Plan* identifies an acceptable vehicle roadway density of 20 vehicles per mile per lane or 1 vehicle per 264 feet of roadway per lane for vehicles on the move (*Merced River Plan*, chapter 6). Above this threshold, “visual crowding” begins to occur where visitors

report that the number of cars in their view is distracting from their experience. The acceptable vehicle roadway density at Yosemite National Park is 20 vehicles/1 mile. These numbers are rounded up to account for the potential error in the assumptions.

$$(\text{Length of Road (miles)} \times 20 \text{ vehicles}) \times \text{Number of Lanes} = \text{Acceptable Vehicles at One Time for Moving Traffic}$$

## **Review of Existing Direction and Knowledge**

During this step, the planning team reviewed existing direction and knowledge, including (1) applicable law and policy; (2) prior applicable planning and guidance; (3) existing conditions in the analysis area; (4) existing indicators, triggers, thresholds, and objectives; (5) applicable existing management strategies and actions; and (6) use patterns for commercial and other allocation categories. An overview of visitor use issues and current use levels for each key area follows under each analysis area.

## **Identify the Limiting Attribute**

Step three requires the identification of the limiting attribute, defined as the specific resource or experiential attribute(s) that most constrains the analysis area's ability to accommodate visitor use. The limiting or constraining attribute(s) may vary across the analysis area and is described under each key area. Step 3 is important since a key area could experience a variety of visitor use challenges.

## **Identify Visitor Capacity**

To determine the appropriate amounts and types of use at key areas, data were reviewed to understand current conditions compared to goals and objectives for the area. Annual visitation data collected by the National Park Service staff include levels of visitor use parkwide and by area. Park managers also collect detailed visitor use data, including traffic counts, trail counts, campground visitation, resource conditions, and other data that show trends in conditions over the years. Where applicable, the person-per-vehicle multiplier is an important input to the capacity analysis; however, the analysis focuses on desired conditions for resources and experiences along trails because the person-per-vehicle multiplier is subject to change.

Visitor capacity includes the consideration of the amounts and types of visitor use, including the timing and distribution of visitor activities and behaviors as they relate to desired conditions. Visitor capacity also takes into consideration management objectives, desired conditions, and other management actions for an area. For Yosemite National Park, visitor capacities are most frequently expressed as people at one time and vehicles at one time. Delineations of sites may vary depending on the specific location, and monitoring can be done in various ways but should serve to approximate as best as possible the total number of people present at a location. The visitor capacities and strategies to manage to capacities would be implemented as part of this planning effort. The strategies to manage to visitor capacities are described in chapter 2 of this document. For all visitor capacity analysis areas, park managers would monitor indicators to ensure desired conditions are being achieved, as described in "Appendix C: Indicators and Thresholds," or use other appropriate monitoring protocols (e.g., tube sensors).

## **VISITOR CAPACITY BY ANALYSIS AREA – KEY LOCATIONS**

### **Hetch Hetchy**

#### **Analysis Area Description**

This analysis area includes Hetch Hetchy Road and its pullouts, the Hetch Hetchy parking areas, and nonwilderness areas adjacent to the reservoir. Parkwide desired conditions, as well as the low development natural recreation zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

#### **Existing Direction and Knowledge**

Located at about 3,900 feet of elevation in the park's northwest quadrant, Hetch Hetchy boasts one of the longest hiking seasons in the park and is an ideal place for experiencing thundering spring waterfalls and wildflower displays. Hetch Hetchy is also home to glacially carved domes, the historic O'Shaughnessy Dam, and Hetch Hetchy Reservoir, which is fed by the Tuolumne Wild and Scenic River and its tributaries. This area provides trail access to Lookout Point, Wapama Falls, Rancheria Falls, Smith Peak, Poopenaut Valley, and beyond. This area is accessible year-round, although winter access is often limited or delayed due to snowfall and plowing needs.

Hetch Hetchy experiences the highest use during the spring due to the earlier snowmelt and associated runoff that feeds Hetch Hetchy's waterfalls. Unlike other areas of Yosemite, the road to Hetch Hetchy is open only during daylight hours and is closed from sunset to sunrise due to security concerns. Additionally, this area may close based on elevated national threat levels due to the presence of critical infrastructure in the area. When the road is closed, there is no access to Hetch Hetchy trailheads. This area has limited amenities, and the campground has no access to potable water. Overnight camping is currently available for backpackers the nights before and after their trip, with no vehicle access to sites. Public transportation to Hetch Hetchy is not currently available. Wayfinding signs and a combination of formal programs and (informal) roving and pop-up interpretive programs provide educational opportunities for visitors.

The primary visitor experiences at Hetch Hetchy are scenic driving, hiking, and viewing the reservoir. The Hetch Hetchy reservoir is 8 miles long and is the largest single body of water in the national park. Trails in the area provide access to Wapama and Tueeulala Falls, both among the tallest waterfalls in North America. The 8-mile-long road from the entrance station to the reservoir was originally constructed as a railroad grade cut into the steep mountainside and was later retrofitted into a two-way road without widening the grade. Because of the narrow, winding road corridor, vehicles over 25 feet in length and 8 feet in width are prohibited, including large commercial tour buses and RVs. Local lodges bring visitors to Hetch Hetchy in small buses and vans. About 150 parking spaces are near the reservoir (115 paved and 38 unpaved), and 400–600 vehicles enter Hetch Hetchy on the busiest weekend days. Additionally, there are approximately 75 parking spaces along the roadway and at trailheads in the Hetch Hetchy area. The busy season in Hetch Hetchy typically runs from late March to late June. According to park staff, visitors typically stay for 3–4 hours if they are hiking or about 30 minutes if they visit to see the reservoir. Though Hetch Hetchy Road, the parking areas, and reservoir access are not within wilderness, the wilderness boundary is within approximately 200

feet of Hetch Hetchy Road and the parking lots in most locations. The Hetch Hetchy area includes eight wilderness trailheads that collectively provide nightly overnight access to 205 people through the wilderness quota system.

During the reservation system implementation in 2021 and in 2022 for all other areas of the park, Hetch Hetchy did not see substantial increases in use. When Big Oak Flat Road was closed during the 2023 season, however, Hetch Hetchy experienced an exceptional increase in visitor use. During this time, entrance station queue waits were sometimes an hour long, which is uncommon at Hetch Hetchy.

Additional information about the Hetch Hetchy Area is available at <https://www.nps.gov/yose/planyourvisit/hh.htm>.

### **Limiting Attributes**

The attribute that most constrains the amounts and types of use that the Hetch Hetchy analysis area can accommodate is the preservation of wilderness character. To preserve the undeveloped quality of wilderness character, the road into Hetch Hetchy cannot be expanded significantly to accommodate higher levels of use due to its proximity to the wilderness boundary, 150 feet of the road edge in places. Further, increased visitor use in the area could begin to impact the area's opportunities for visitors to gain a sense of separation from crowds, unplug, and feel connected to the natural environment.

The most relevant indicator to monitor changes in these conditions is vehicles at one time at key parking areas.

### **Capacity Identification**

While assessing existing conditions and limiting attributes in relation to the desired conditions for the area, park staff identified the need to maintain or increase current visitor use levels in the area to ensure meaningful and enjoyable experiences and protect wilderness character. Visitor use levels under the piloted timed-entry reservation system are about 250 people at one time based on current visitation patterns, typical group size, and the supply of associated opportunities and facilities in the analysis area. This level of use has been assessed to support desired conditions, but future monitoring would help ensure that this capacity aligns with the protection of resources. In summary, the visitor capacity for Hetch Hetchy has been identified as 305 people at one time.

### **Implementation Strategies**

1. Use a “one in, one out” protocol at the entrance station when lots are full. The area has only one location (entrance station) to enter and exit.
2. Provide visitors with the information they need to come prepared for area conditions so that expectations align more closely with experiences. Hetchy status (wait times, closed/open) could be made available to the public through variable message signs on Highway 120 outside the park boundary and through web applications.

## **Tioga Road Corridor**

### **Analysis Area Description**

This analysis area includes the road corridor and associated day-use areas along and near Tioga Road, a federal highway that serves as a trans-Sierra seasonal connection to State Route 120, from the Tioga Pass Entrance at the park's east boundary to the road's intersection with Big Oak Flat Road at Crane Flat. Overnight use visitor capacities for campgrounds along Tioga Road, day-use capacity for Tenaya Lake, and areas analyzed in the *Tuolumne River Plan* are not included in this analysis area and are analyzed separately (see the campground analysis areas below and the *Tuolumne River Plan*, volume 1, chapter 8). Tuolumne Grove day use is identified later in this section under "Sequoia Groves."

Points of interest in this analysis area include Tuolumne Meadows, Tenaya Lake, Olmsted Point, and White Wolf. See Table D-1 for additional trailheads and parking areas included in this analysis area.

Parkwide desired conditions, as well as the roadway zone, recreational and visitor services zone, and low development natural recreation zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

### **Existing Direction and Knowledge**

The Tioga Road corridor in Yosemite National Park is a popular destination for visitors seeking both scenic drives and outdoor activities. The high-elevation road is typically open to vehicles from late May or early June to mid-October or November. The road passes through varied landscapes, including meadows, forests, and alpine lakes. It offers stunning views of landmarks like Half Dome, Tenaya Lake, Cathedral and Mammoth Peaks, Mount Dana, and various domes. Tioga Road is a major access point for numerous hiking trails that range from easy walks to strenuous wilderness treks. Because of this, a significant percentage of the parked vehicles in the corridor are backpackers recreating in wilderness. The nationally significant Pacific Crest Trail and John Muir Trail are accessible from trailheads along the Tioga Road corridor. Along the road, there are several picnic areas and viewpoints and opportunities for wildlife viewing and bird watching. Visitors often stop at Tuolumne Meadows, a large, open subalpine meadow area that serves as a hub for both day hikes and longer backpacking trips. The total parking capacity for the analysis area and the associated destinations is 522 vehicles at one time (Table D-7). Throughout most of the analysis area, the wilderness boundary is within 200 feet of Tioga Road.

Due to its high altitude and heavy winter snow, Tioga Road's opening and closing dates vary each year, and visitor access is seasonal. During peak summer months, the area can become quite busy, and parking at popular trailheads can fill early in the day. Visitors are encouraged to plan ahead and arrive early to secure parking and enjoy quieter trails.

### **Limiting Attribute**

The attributes that most constrain the amounts and types of use that the Tioga Road corridor analysis area can accommodate are geography and the preservation of wilderness character. The area has diverse and sensitive natural features, including steep cliffs, water features, and sensitive

habitat. The necessary protection of these natural features limits opportunities to further expand the road or add additional parking to accommodate higher levels of use. The road is cut into a steep mountainside in some locations, so any effort to expand it would result in substantial new cut and fill and related engineering and further impacts on sensitive natural resources and the protection of wilderness character. Further, greater visitor use in the area could begin to impact the area’s opportunities for visitors to gain a sense of separation from the crowds and feel connected to the natural environment. Tioga Road is adjacent to the wilderness boundary throughout most of the corridor.

The most relevant indicators to monitor changes in these conditions are peak hour vehicles at one time in key road corridors, vehicle crowding in parking lots, and length of wait for arriving visitors to pass through an entrance station.

### Capacity Identification

While assessing existing conditions and limiting attributes in relation to the desired conditions for the area, park staff identified the need to maintain current visitor use levels in the area to ensure the preservation of wilderness character. Visitor use levels under the piloted reservation system were about 5,655 people at one time based on current visitation patterns, typical group size, and the supply of associated opportunities and facilities in the analysis area. This number is derived from the vehicles at one time as described above. This level of use has been assessed to support desired conditions, but future monitoring would help ensure that this capacity aligns with the protection of resources. In summary, the visitor capacity for the Tioga Road corridor has been identified as 2,082 vehicles at one time or 6,040 people at one time.

**Table D-1. Parking Capacity for Locations along Tioga Road Corridor from the Yosemite Parking Capacity Dashboard**

Location or Point of Interest	Parking Capacity: General Spaces	Parking Capacity: ADA*-Accessible Spaces	Parking Capacity: Total Spaces	Shuttle Stop?
Entrance station/Gaylor Lakes Trailhead	9	1	10	Yes
Dana Meadows parking	17	1	18	No
Mono Pass parking	15	1	16	Yes
Pothole Dome Trailhead	70	0	54	Yes
Fairview Dome parking	20	0	20	No
Mariolumne Dome roadside parking	7	0	20	No
Tioga Road roadside parking	36	0	36	No
Olmsted Point	50	3	53	Yes
Tioga Road roadside parking	13	0	13	No
May Lake to Snow Creek Trailhead	11	0	11	No

Location or Point of Interest	Parking Capacity: General Spaces	Parking Capacity: ADA*- Accessible Spaces	Parking Capacity: Total Spaces	Shuttle Stop?
Snow Creek pullout	11	0	11	No
May Lake Trailhead	24	0	24	No
Porcupine Creek Trailhead	20	0	20	No
Cones and Needles Trailhead	18	0	18	No
Porcupine Flat Trailhead	10	0	10	No
Yosemite Creek Picnic Area	8	0	8	No
Yosemite Creek and Ten Lakes Trailheads	56	2	58	No
Yosemite Creek Canyon pullout	20	0	20	No
Yosemite Creek and Lukens Lake Trailhead	44	0	44	No
White Wolf Lodge	17	0	17	No
Siesta Lake parking	11	0	11	No
Walker Party parking	6	0	6	No
Gin Flat pullouts	8	0	8	No
Crane Flat Gas Station	15	1	16	No
<b>Total</b>	513	9	522	–

\* Americans with Disabilities Act

## Tenaya Lake

### Analysis Area Description

This analysis area includes visitor use near and around Tenaya Lake, which is located along Tioga Road a little less than 7 miles west of Tuolumne Meadows. The analysis area includes the section of the road from the Sunrise Lakes Trailhead (western boundary) to the East Beach parking area (eastern boundary) and includes pullouts, viewpoints, trailheads, parking lots, and water access points along this section of the road. Parkwide desired conditions, as well as the low development natural recreation zone desired conditions, will help guide the management and visitor capacity analysis of this area.

### Existing Direction and Knowledge

Tenaya Lake is the largest natural lake in Yosemite's frontcountry. Because of its remarkable scenic qualities, clear blue water, and proximity to Tioga Road, Tenaya Lake is one of the most popular destinations for summer visitors in Yosemite. The area is accessible while Tioga Road is open to vehicles, typically from late May or early June to November. Overnight parking on Tioga Road including Tenaya Lake ends on October 15th.



Points of interest in this analysis area include the Sunrise Lakes Trailhead, Tenaya Lake Picnic Area, Sunrise Lakes Trailhead shuttle stop, Murphy Creek parking, Murphy Creek Picnic Area, Tenaya Lake parking, Murphy Creek Trailhead, Tenaya Lake East End shuttle stop, Tenaya Lake Picnic Area, Tenaya Lake Trail, Snow Creek Trail, and Tenaya Lake East End Parking.

The Sunrise Lakes Trailhead provides access to the high country including High Sierra Camps, and to the west to Sunrise Lakes, Clouds Rest, Half Dome, and Yosemite Valley. The trailhead includes a vault toilet, bear-resistant food storage, and trash receptacles. The trailhead also has a shuttle stop. The Murphy Creek Parking lot provides access to the Sunrise Lakes Trailhead and the Tenaya Lake Trail. The east side of the lake can be accessed from the Tenaya Lake East End Parking lot. Additional parking provides access to the lake and climbing areas on the south side of the road. The area provides access to a diversity of family-friendly activities including picnicking, swimming, and boating. The area also provides access to hiking and climbing (both in and out of wilderness). Unlike many other areas in the park, the picnic areas around the lake can accommodate larger groups and it is a popular area for larger social gatherings. Tenaya Lake is a user-friendly area with clear signage that allows visitors with little knowledge of the park to participate in activities that meet their needs. The east end of Tenaya Lake has designated accessible parking spaces, an accessible vault toilet, and an accessible path that leads to open views of Tenaya Lake.

Yosemite Area Regional Transportation System (YARTS) public transit runs along Tioga Road through the Tenaya Lake area but does not stop at Tenaya Lake. The Tuolumne Meadows shuttle provides service between Tuolumne Meadows and Olmsted Point, typically from mid-June through mid-September (dates and service schedule varies from year to year). When operating, the shuttle runs every half hour between 7:00 a.m. and 7:00 p.m. and stops at the east end of Tenaya Lake. Although an authorized service under the current contract for shuttle service in Yosemite, the Tuolumne Meadows shuttle has not run routinely. Only a small number of visitors ride the shuttle between Tenaya Lake and Tuolumne Meadows. Tenaya Lake is also an approved stop for tour buses to stop and lets passengers visit the area. Park staff estimate that no more than 30 people per day currently visit Tenaya by shuttle.

At Tenaya Lake, time of day greatly impacts visitor experience and crowding. Many visitors show up early to find a spot by the water, and visitor density tends to increase throughout the day. The Tenaya Lake East Beach parking lot provides access to the east side of the lake, which has ample space for visitors to spread out and disperse to find their own space.

During weekends, the Sunrise Lakes Trailhead is often full and overflowing, causing creative parking and resource damage from off-pavement parking. The trail to Clouds Rest is popular, and trail use has increased with the implementation of Half Dome permits. Park staff have installed curbs along Tioga Road to minimize roadside parking, which has lessened but not eliminated some of the impacts between the Sunrise Lakes Trailhead and Murphy Creek. The Snow Creek Trail follows the eastern side of Tenaya Lake and is in this analysis area. The wilderness boundary is within 50–75 feet of the Snow Creek Trail.

The Tenaya Lake area is not frequently patrolled by park staff, and there are issues with improper food storage. Many visitors bring their dogs to the lake, and park staff report issues with visitor-dog conflict and visitors failing to comply with park leash requirements.

The 2010 *Tenaya Lake Area Plan* aimed to improve the visitor experience with upgrades to the picnic area, circulation, and accessibility and resulted in a decrease of parking at Tenaya Lake. The project was focused on removing and reducing unsanctioned roadside parking and improving parking lots and recreation trails. The project called for parking that did not exceed 232 spaces, including 177 spaces within designated lots south of Tioga Road. These 177 spaces are included in this analysis area. The 40 designated roadside spaces north and south of Tioga Road and the 15 undesignated spaces on the northern side of Tioga Road near East Beach in the plan are accounted for in the capacity calculations for the Tioga Road corridor analysis area.

### Limiting Attribute

The limiting attribute that most constrains the amounts and types of use that the Tenaya Lake analysis area can accommodate is geography and the protection of natural resources. The area has diverse and sensitive natural features, including water features, steep cliffs, and sensitive habitat. While this area is very popular, the necessary protection of these natural features limits opportunities to further expand parking to accommodate higher levels of use. Current use levels allow visitors to find quiet spaces, spread out, and experience immersion in a remote environment separated from the crowds and chaos. Current use levels also are consistent with other resource protection needs in this area, particularly the protection of sensitive riparian areas.

The most relevant indicator to monitor changes in these conditions is visitor densities at key destinations.

### Capacity Identification

While assessing existing conditions and limiting attributes in relation to the desired conditions for the area, park staff identified the need to maintain current visitor use levels in the area to ensure meaningful and enjoyable experiences and protect sensitive resources at Tenaya Lake. This level of use has been assessed to support desired conditions, but continuous future monitoring would help ensure that this capacity aligns with the protection of resources. In summary, the visitor capacity for Tenaya Lake has been identified as 177 vehicles at one time (Table D-2) or 543 people at one time, including 30 people at one time arriving via shuttle.

**Table D-2. Parking Capacity Tenaya Lake Locations**

Parking Area	Spaces
Sunrise Trailhead and Old Campground	48
Murphy Creek	41
East Beach	68
Roadside parking	20
<b>Total Parking Spots</b>	<b>177 (8 ADA accessible)</b>

### Sequoia Groves

The Mariposa Grove of Giant Sequoias was the first federally protected natural area in the United States. Designated in 1864 by President Abraham Lincoln, the trees and their habitats

have been protected by either state or federal management since. Since 1864, park boundaries have expanded to include the Tuolumne and Merced Groves. The three small groves in the park contain some of the largest living trees on earth and are ancient relics of what was once a large expansive range of giant sequoia forests that dominated the landscape of the Sierra Nevada. Yosemite's 2016 foundation document identifies preserving the ancient sequoia groves as key to the park's purpose and a "fundamental inspiration and driving force behind the establishment of the park." The groves are fundamental resources that warrant primary consideration in planning and management because they are essential to achieving the purpose of the park and maintaining its significance.

Giant Sequoias grow at middle elevations along the western slope of the Sierra Nevada. They are known to reach ages of up to 3,400 years but face many threats related to climate change and other environmental impacts, including hotter temperatures, drought, years of fire suppression, an increase in high-severity wildfires, and bark beetles. The National Park Service seeks to protect these trees and minimize any additional impacts or stresses from visitor use, such as soil compaction and erosion, which can uncover and threaten root systems and limit access to ground water, and to minimize vandalism and other disturbances.

The groves also provide a critically important habitat for several threatened and endangered species and species of special concern within the park: the Pacific fisher, the great gray owl, and the California spotted owl. Fishers are tree-dwelling carnivores that were once abundant in the area but have been eradicated from more than 50% of their previous range. The fishers in Yosemite represent only one of two native populations remaining in the state of California. Yosemite represents the southernmost range and last sanctuary for almost all of California's great gray owls, which are a genetically distinct population. All of these species are sensitive to decline. Threats to these species include damage to their habitats, disruption from human use and presence, and the introduction of disease.

Park staff also seek to provide for meaningful and enjoyable visitor experiences that inspire and educate visitors about the significance of the groves. Desired conditions, as identified in appendix B, state that "The Sequoia Groves provide visitors with a range of experiences, from more accessible services and interpretation opportunities at the Mariposa Grove to undeveloped and relatively remote experiences at the Merced Grove. At each grove, visitors can wander through the forest and stand beneath the trees, gazing all the way up through their high branches to the sky above, feeling a sense of smallness next to these ancient giants." See chapter 2 for the full desired conditions.

Following are specific descriptions of the characteristics and visitor capacity for each of the three groves.

## **Mariposa Grove**

### **Analysis Area Description**

This analysis area is located in the southern portion of Yosemite and includes the Mariposa Grove of Giant Sequoias, trails within the grove, the Mariposa Grove Road, and the Welcome Plaza facility at the South entrance station. The area covers approximately 4 square miles.

## Existing Direction and Knowledge

In appendix B, park staff identified specific desired conditions for the Mariposa Grove:

*The Mariposa Grove is an important historic district distinguished for its natural resource values. It provides a spectrum of opportunities between the lower and upper groves. The South Entrance parking area and Grove provides the most accessible experience and accommodates higher levels of use. Visitor facilities are consistent with the preservation of the unique ecosystem and any facilities not necessary for visitor enjoyment of the resource are removed. The upper grove is much less developed, providing a quieter, more secluded type of experience.*

The 2013 *Restoration of the Mariposa Grove of Giant Sequoias Final Environmental Impact Statement* aimed to restore ecological processes and increase the resiliency of the Mariposa Grove, while improving the overall experience for visitors. The document included an extensive data collection effort by park staff, contractors, and a university team. Data were collected on parking, shuttles, commercial tram, trail counters, length of stay, hiking routes, and visitor experience. Visitation levels and patterns were analyzed, and appropriate facilities were constructed. A transit service was also established to meet the desired daily use level, which was consistent with the general management plan.

The Mariposa Grove is the most popular of the three groves. The Mariposa Grove Welcome Plaza area serves as a gateway to the grove with parking for cars, RVs, and commercial tour buses next to the grove's shuttle stop. While the shuttles typically run from April to November, the parking lot remains open year-round, and visitors can hike to the grove on the road or a trail. The Welcome Plaza has drinking water and flush restrooms available year-round. The area also includes a bookstore with general information open during peak season. The South Entrance arrival area and trailhead and the Mariposa Grove both have drinking water and restrooms available during the shuttle season and vault toilets available during winter. Bicycles are allowed on the Mariposa Grove Road between the Welcome Plaza and the Grizzly Giant ADA-accessible parking lot when the road is open but not elsewhere.

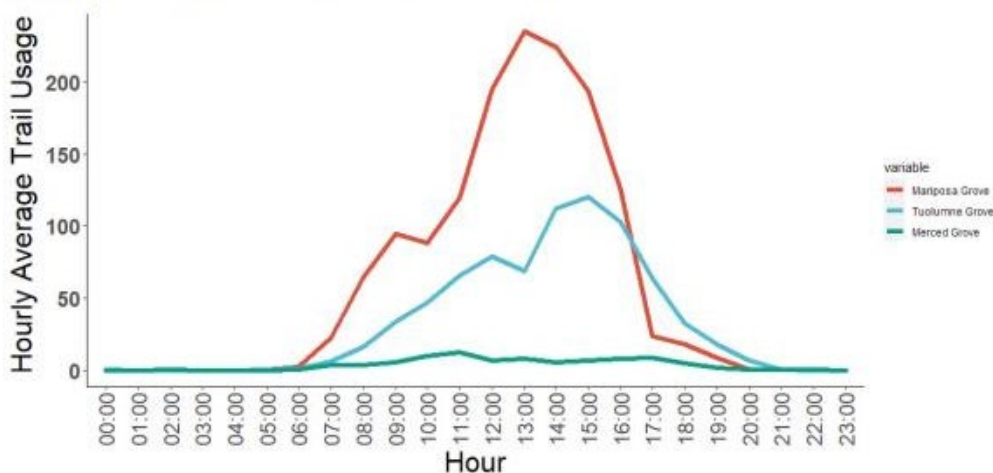
This analysis area has four trails, including the strenuous Guardians Loop and Mariposa Grove Trail, the moderate Grizzly Giant Loop, and the easy Big Trees Loop, offering visitors with options that fit their desired experience. The South Entrance parking area and grove includes the ADA-accessible parking area and accessible trail and shuttle unloading and loading areas. The Big Trees and Grizzly Giant Loops are generally much busier than other trails in the rest of Mariposa Grove, where the more strenuous hikes occur. The majority of visitors hike the Grizzly Giant Loop, with only about 25% of visitors hiking beyond that point. The iconic Grizzly Giant is also accessible on a short trail connecting a small parking lot (ADA accessible only).

Mariposa Grove has a long history of use and significance to multiple groups. Mariposa Grove's landscape is classified as a historic district and a historic designed landscape, and park managers are anticipating an updated National Register of Historic Places nomination that integrates historic, archeological, and Tribal values. The period of significance for Mariposa Grove spans from the original withdrawal of the land from the public domain in 1864 through approximately 1950.

## Shuttle Season

Depending on several factors, including snowpack, shuttle contract start/end dates, and seasonal staff availability, a free shuttle provides service to the grove from the Welcome Plaza. The road and shuttle service may open as early as April 14 and will close on or before November 30 (depending on weather conditions). The operating hours and number of shuttles vary throughout the season.

The Welcome Plaza has about 300 parking spaces and can fill quickly. The *Mariposa Grove Plan* removed visitor parking and structures from the big trees while building a remote parking area to accommodate the desired daily use level, with access moderated by shuttle service operations throughout the day in peak and shoulder seasons. While it presents an operations challenge, the lot was designed to be actively managed. Park staff recommend arriving by mid-morning to increase the chance of finding a spot. When the lot fills, the lot is closed. These closures average about an hour. During the summer, the grove closes at least once per day. Piloted reservation systems reduced closures of the parking lot to almost none. A gate was built to close the parking lot in anticipation that the lot's capacity would be regularly exceeded during high visitation times. The goal was to disperse use throughout a longer day to reduce the number of visits at one time for a better experience in the grove, while providing opportunities for just as many to visit the grove daily. Overnight camping is not permitted at Mariposa Grove during the shuttle season.



**FIGURE D-1. HOURLY AVERAGE TRAIL USAGE AT MARIPOSA, TUOLUMNE, AND MERCED GROVES IN AUGUST 2023**

Trail count data were collected in the Sequoia Groves from June through August of 2023 while shuttles were in service. The trail counter data showed the highest usage in the Mariposa Grove, followed by Tuolumne Grove, and then Merced Grove (Figure D-1). Around 12:30 p.m., usage in the Mariposa Grove peaked at approximately 200 visitors per hour. Data collection from the Restoration Plan for the Mariposa Grove estimates about 5,100 visitors per day at Mariposa Grove during peak season.

The Mariposa Grove is a popular stop for commercial tour buses. Buses must reserve one of four bus parking spots before arriving. During the peak season, a maximum of 12 commercial

buses per day can obtain reservations. During the early and late shuttle bus season, when daylight hours are shorter, a maximum of eight buses are permitted per day. A YARTS stop is located at Mariposa Grove. The northbound YARTS stops twice at Mariposa Grove in the morning and twice southbound in the evening from mid-May to mid-September. The *Merced River Plan* authorized up to 12 buses per day on this route, and the route terminates in Yosemite Valley.

During shuttle season, private vehicles with disability placards may drive the Mariposa Grove Road to the South Entrance parking area and the Grizzly Giant ADA-accessible parking lot.

### **Winter Non-Shuttle Season**

The Mariposa Grove can be reached year-round by foot. The Welcome Plaza parking lot is plowed year-round to provide parking. From the fall closure to the start of shuttle season, the Mariposa Grove Road east of the Welcome Plaza is not plowed, and there is no vehicle access to Mariposa Grove. During this time, access to Mariposa Grove is via a minimum 4-mile round-trip hike, snowshoe, or ski on either the Washburn Trail or Mariposa Grove Road. During the winter, the area is managed as wilderness.

During the winter, trails can be snowy or icy, making recreation challenging. Two vault toilets are available at the South Entrance arrival area and trailhead parking, one vault toilet at the Grizzly Giant ADA-accessible parking lot, one vault toilet at the Mariposa Grove Picnic Area, and two flush restrooms at the Welcome Plaza. The main restroom at the South Entrance arrival area and trailhead parking cannot be serviced to accommodate visitor use in the winter due to a lack of water, a lack of vehicle access, and an inability to operate the septic system. No services are provided in the winter. Mariposa Grove Road is not plowed east of the Welcome Plaza due to staffing limitations and efforts to offer opportunities for solitude and natural conditions.

Overnight camping is allowed in the Mariposa Grove from December 1 through April 15 if the road is closed and there is enough snow for skiing. Camping is only allowed above the Clothespin Tree, and a wilderness permit is required. The winter wilderness quota for overnight use at Mariposa Grove is eight people.

### **Limiting Attributes**

Attributes that most constrain the amounts and types of use that the Mariposa Grove analysis area can accommodate are providing meaningful and enjoyable visitor experiences and the protection of the Giant Sequoia Tree ecosystem, which is habitat for federally or state threatened or endangered wildlife species including Pacific fisher, great gray owl, and California spotted owl.

As stated in the desired conditions, the Sequoia Groves provide visitors with a range of experiences, from more accessible services and interpretation opportunities at the Mariposa Grove to undeveloped and relatively remote experiences at the Merced Grove. This experience is fully realized in the summer months, with a shuttle service that facilitates access to the Mariposa Grove. During this time, visitors can expect to encounter many others on shuttles and trails that have been designed to support a high level of visitor use while protecting natural and cultural resources. The capacities identified will support the continued protection of resources while allowing visitors an opportunity to connect with the trees and their habitats and

experience smallness next to ancient giants. Protecting the trees in the sequoia groves for their natural and cultural significance is also a key management objective at the park.

During the winter, the Mariposa Grove is managed as wilderness for both resource protection and visitor experience goals, so the capacity will vary accordingly, given the different desired conditions and resource and operational constraints.

The most relevant indicator to monitor changes in these conditions is visitor densities at key destinations.

### **Capacity Identification**

**Shuttle Season.** Park staff identified that under current visitor use levels, desired conditions for the Mariposa Grove are being achieved most of the time, and current use levels should be maintained at 3,960 people per day during shuttle season.

**Non-Shuttle Season.** While assessing existing conditions and limiting attributes in relation to the desired conditions for the area during the winter season, park staff identified the need to maintain current visitor use levels in the area to ensure meaningful and enjoyable experiences and protect sensitive resources. Visitor capacity is identified at current use levels of 870 people per day during the non-shuttle season to maintain desired conditions in relation to current access, facilities, and operational support.

### **Tuolumne Grove**

#### **Analysis Area Description**

This analysis area includes the parking area and visitor services, the trail to the grove, and the Tuolumne Grove of Giant Sequoias itself. This grove is located along Tioga Road, just northeast of Crane Flat.

#### **Existing Direction and Knowledge**

Visitor use facilities include a parking area with 38 passenger vehicle spots (two of which are accessible) and 20 oversized vehicle spots; 4 vault toilets, trash and recycling receptacles, picnic tables; and a scenic view/photography spot. In the winter, the number of available parking spaces is generally lower due to accumulated snow.

The Tuolumne Grove Trail follows the historic Big Oak Flat Road roadbed, which is a cultural resource. The trail is a 2.5-mile round trip hike that descends 500 feet from the parking area to the grove. The trail is popular with hikers and with snowshoers in the winter, and there is an easy half-mile nature trail that circles the grove.

Park staff identified specific desired conditions for Tuolumne Grove: “Visitors to the Tuolumne Grove can experience relative quiet and levels of low to moderate visitation while having access to basic amenities such as restrooms, paved parking, and a walking trail to and through the grove. Visitors can learn about the grove through interpretive signage and basic orientation panels located at the parking area and throughout the walk into the grove.”

Due to the nature of the trail and size of the grove, visitor use is typically dispersed throughout the grove, preventing overcrowding. Visitor trail count data were collected July 2023. A maximum of 1,200 data points were counted, which likely represent 600 visitors (the trail counter would have captured visitors on both the trips to and from the grove). The data also showed that visitation was highest on weekends. More average hiker counts were around 300–450 people per day. During the Mariposa Grove restoration and road construction between 2015 and early 2018, when visitors couldn't access that grove, Tuolumne Grove saw a significant increase in use; however, since Mariposa Grove has reopened, visitation to Tuolumne Grove has returned to more moderate levels. There can still be certain times when the area is busier, if Mariposa Grove or other areas are full or closed, or for special events (e.g., Tioga Road bike days).

Some commercial use occurs in the area, including tour groups and lodge-provided trips. Buses can park in one of the 20 oversized spots, making Tuolumne Grove a convenient stop for tours. When tour buses come, they can drop off up to 55 people at one time, which can lead to some lines for restrooms and initial crowding on the trail to the grove, but the use generally disperses over time.

Drinking water is not available, so visitors need to arrive prepared. This is due to the generally limited amounts of water in the area and the National Park Service's desire to conserve all water to support the wildlife, trees, and nearby meadows.

This area includes and abuts sensitive great gray owl habitat. Yosemite is the southernmost range for almost all of California's great gray owls and provides important habitat. Great gray owls have been on the California endangered species list for more than 30 years. Related monitoring for this analysis area is the ongoing natural resource monitoring around sequoia grove health and visitor-created social trail monitoring.

### **Limiting Attributes**

The limiting attributes that most constrain the amounts and types of use that the Tuolumne Grove analysis area can accommodate are meaningful and enjoyable visitor experiences and the protection of the giant sequoia tree ecosystem, which is habitat for federally or state-threatened or endangered wildlife species, including the Pacific fisher, great gray owl, and California spotted owl.

Tuolumne Grove provides a less developed and lower-use experience than Mariposa Grove while still providing general visitor services. The desired conditions emphasize that the amount of use is managed to emphasize visitors' connections with the trees and their habitats and to experience relative quiet. Protecting the trees in the grove for their natural and cultural significance is a key management objective at the park, as discussed in the introduction of this section.

The most relevant indicator to monitor changes in these conditions is visitor densities at key destinations.

### **Capacity Identification**



Park staff identified that under current visitor use levels, desired conditions for Tuolumne Grove are being achieved most of the time, and current use levels should be maintained at 1,550 people per day.

## **Merced Grove**

### **Analysis Area Description**

This analysis area is located near the western boundary of Yosemite, just west of Crane Flat. The area includes the entire Merced Grove, including the trails within the grove, the entire Merced Grove Trail within park boundaries, and the parking area off Big Oak Flat Road.

### **Existing Direction and Knowledge**

The Merced Grove is home to the smallest collection among the three designated grove visitor areas, with approximately 20 mature giant sequoias reachable only on foot. The trail follows a historic road that curves down into the Merced Grove, the smallest and most secluded of Yosemite's three sequoia groves. The trail drops down 1.5 miles, making it a moderate hike on the uphill portion. A historic ranger patrol cabin, the former summer residence of park superintendents, is part of the grove's history.

The park identified specific desired conditions for the Merced Grove in appendix B: “The Merced Grove is the least developed grove and provides enhanced opportunities for quiet where natural sounds dominate, and visitors can hear the breeze rustling through the foliage or the sound of a woodpecker calling or tapping against a tree. Minimal facilities are available.”

The Merced Grove experiences the lowest levels of visitation among the three groves. Some limited data collection over the 2023 summer counted a maximum of about 75 people on the trail in one day, with some days below 25. When the Mariposa Grove was closed in 2015, the grove saw daily visitation rates of 200–300 people per day. During this time, park staff added brush around the trees closest to the trail to discourage trampling near the trunks, reducing impacts on natural resources.

The trailhead has a paved parking lot with 10 marked parking spaces, a vault toilet, picnic tables, trash/litter receptacles, and interpretive signage. Overflow parking also exists, with 6 additional parking spaces but none large enough to accommodate buses. Drinking water is not available at the trailhead and the trail is not ADA accessible. If necessary, emergency vehicles can access the grove using the trail. The trail is open year-round and is used in the winter by snowshoers and cross-country skiers. The trailhead has no wilderness access.

Some of the trees in the Merced Grove are fenced for protection, but not to the extent of those at Tuolumne Grove. A few points on the trail run close to the trees and impacts from trampling are evident. Starting in 2021, the Merced Grove has been a focus for forest restoration treatments since much of the grove has not seen fire for 150 years and is severely departed from a natural fire regime. Actions have included mechanical restoration thinning and the removal of dead or downed trees to minimize fuel for wildfire and facilitate prescribed fire operations, resulting in a more open forest.

Related monitoring for this analysis area is the ongoing natural resource monitoring around sequoia grove health and social trail monitoring related to access to the trees.

### **Limiting Attribute**

Attributes that most constrain the amounts and types of use that the Merced Grove analysis area can accommodate are meaningful and enjoyable visitor experiences and the protection of the giant sequoia tree ecosystem, which is habitat for federally or state-threatened or endangered wildlife species, including the Pacific fisher, great gray owl, and California spotted owl. The Merced Grove is the least-developed grove and has been identified as a place where lower levels of use and minimal facilities are most appropriate in support of desired conditions. The desired conditions for the grove include providing enhanced opportunities for quiet and natural soundscapes. Protecting the trees in the grove for their natural and cultural significance, as discussed in the introduction of this section, is a key management objective at the park. Due to some recent biomass removal projects, there are potentially new risks to the sequoia trees in this grove as access to trees previously inaccessible is now possible.

The most relevant indicator to monitor changes in these conditions is visitor densities at key destinations.

### **Capacity Identification**

Park staff identified that under current visitor use levels, desired conditions for the Merced Grove are being achieved most of the time, and current use levels should be maintained at 200 people per day.

## **Glacier Point Road Corridor and Related Trailheads**

### **Analysis Area Description**

This analysis area includes the approximately 13-mile road corridor from Chinquapin to Pothole Meadow and all trailheads and parking areas west of Sentinel Dome/Taft Point. Parkwide desired conditions, as well as recreation and visitor services zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

### **Existing Direction and Knowledge**

The primary visitor use of this analysis area is as a travel corridor. Many vehicles driving along the road are headed to Washburn Point and Glacier Point, with many others headed to the Sentinel Dome/Taft Point Trailhead. Visitors also access viewpoints, pullouts, and trailheads along the road and can experience a scenic drive as the road climbs in elevation. Throughout the analysis area, the wilderness boundary is approximately 175 feet from Glacier Point Road. A self-guided tour has numbered posts along the road where visitors can stop and learn more about the area's resources. Table D-3 includes these locations with accompanying details.

**Table D-3. Glacier Point Road Corridor Facilities and Parking Capacity**

Location	Restrooms Present?	Number of Parking Spaces
Summit Meadow	Yes – 1 vault	5
Fire and air quality wayside	No	10
McGurk Meadow Trailhead	No	42
Ostrander Lake Trailhead	Yes – 1 vault	18, including 1 accessible space
Mono Meadow Trailhead	No	15
Bridalveil Creek Trailhead (and road to the trailhead)	Yes	5
<b>Total</b>		<b>95</b>

**Limiting Attribute**

Attributes that most constrain the amounts and types of use that the Glacier Point Road corridor analysis area can accommodate are sensitive habitat and the preservation of wilderness character. Glacier Point Road is near the wilderness boundary, within 150 feet of the road edge in some places, so there are no opportunities to expand the road to accommodate higher levels of use. The road corridor is characterized by rugged, steeply sloped mountainside topography and meadows that include habitat for several threatened and endangered species, including the Sierra Nevada red fox, Sierra Nevada yellow-legged frog, wolverine, and fisher. Additionally, other important species for the ecological health of the environment, including American black bears, mule deer, squirrels, gophers, and chipmunks, are seen regularly in the area.

The most relevant indicators to monitor changes in these conditions are the density of visitor use at key locations, vehicle crowding on roadways, and vehicles at one time in key parking areas.

**Capacity Identification**

Park staff identified that current visitor use levels are not achieving and maintaining desired conditions for resources and experiences. Parking areas are frequently full and cause congestion, with significant backups. The visitor capacity is reduced and identified as 615 vehicles at one time or 1,785 people at one time.

## **Sentinel Dome Trailhead**

### **Analysis Area Description**

This analysis area includes the Sentinel Dome/Taft Point Trailhead, parking lots, and nearby roadside parking areas. Parkwide desired conditions, as well as the recreation and visitor services zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

### **Existing Direction and Knowledge**

This area is an access point for both day and overnight access into wilderness areas. A considerable amount of hiking traffic occurs between this analysis area and the Glacier Point analysis area, as visitors park at one location and hike between the two areas.

This area provides visitors with access to Pohono Trail, Sentinel Dome, and Taft Point. These trailheads are only accessible by vehicle when the Glacier Point Road is open, approximately mid-May through mid-November (depending on snowfall). Visitors use this area primarily for day use, with some overnight wilderness use. This area quickly leads into Yosemite's wilderness, is not universally accessible, and is considered of moderate difficulty, providing magnificent views of different areas of the park. These trails can also be combined into a longer loop experience.

The Sentinel Dome/Taft Point Trailhead parking area includes 59 spaces for passenger vehicles, including four accessible spaces. These parking areas fill daily as hikers park to access the trails. Parking often fills early as visitors set out on their hikes and can stay full into the evening, as people access the area to view the sunset. Park staff have observed that there is still demand for these spots and that the area can accommodate this use if appropriate parking is provided.

### **Limiting Attribute**

Attributes that most constrain the amounts and types of use that the Sentinel Dome Trailhead analysis area can accommodate are wilderness character and visitor experience on the Sentinel Dome and Taft Point Trails. To preserve wilderness character and provide outstanding opportunities for solitude within wilderness, use of the trails and encounters with other visitors should be lower than in developed areas of the park.

The most relevant indicator to monitor changes in these conditions is vehicles at one time in key parking areas.

### **Capacity Identification**

Park staff identified that under current visitor use levels, desired conditions for the Sentinel Dome Trailhead are being achieved most of the time, and current use levels should be maintained at 171 people at one time.

### **Glacier Point**

#### **Analysis Area Description**

This analysis areas includes the Glacier Point parking lot, Glacier Point developed area, and the portion of Glacier Point Road from Washburn Point to the Glacier Point parking lot. Parkwide desired conditions, as well as the recreation and visitor services zone) desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

#### **Existing Direction and Knowledge**

Glacier Point is a developed and accessible area of overlooks, trails, and other amenities accessed via the 16-mile Glacier Point Road and is approximately an hour drive from Yosemite Valley. Glacier Point is accessible by car and permitted commercial tour buses (maximum vehicle length of 30 feet) via Glacier Point Road from approximately mid-May to mid-November. Glacier Point is accessible by trail for hikers from Yosemite Valley in late spring, summer, and fall, and during the winter to cross-country skiers and snowshoers. Glacier Point also serves as a wilderness trailhead and provides overnight parking opportunities for backpackers.

In the winter, Glacier Point is a popular destination for cross-country skiing and snowshoeing from Badger Pass. The area is managed to provide maximum ecological benefits and visitor experiences consistent with the surrounding wilderness character during the winter when the road is closed to cars, and therefore, winter use is not included in this analysis area.

Glacier Point's sweeping views make it a popular stop for park visitors. The overlook provides commanding views of Yosemite Valley, Half Dome, Yosemite Falls, and Yosemite's high country. Glacier Point is an especially popular destination for visitors seeking sunset or sunrise views. Visitors can purchase souvenirs and snacks at the Glacier Point gift shop and concessions stand when it is open from May to October. Stargazing and picnicking are also common.

The area includes opportunities for accessible recreation. From the Glacier Point parking lot, a short, paved, wheelchair-accessible trail takes visitors to an exhilarating viewpoint 3,214 feet above Curry Village, on the floor of Yosemite Valley.

The concession-operated Glacier Point Tour operates two to three times a day when the Glacier Point Road is open. One-way tickets are available for visitors interested in taking the bus to Glacier Point and hiking back to Yosemite Valley. No public shuttle service is provided between Glacier Point and Yosemite Valley. The Glacier Point Tour is not considered a shuttle, though day hikers and backpackers may ride one way. Due to tight curves and short turning radii, vehicles longer than 30 feet in length, vehicles with trailers, and buses with more than 26

passengers are not permitted to operate on Glacier Point Road. This area has considerable commercial tour bus traffic that is not associated with the concessioner.

Some visitors stop briefly at Glacier Point to admire the view, while others use the area as a drop-off point or connection point for longer hikes. The average length of stay for visitors is about one hour, and visitors can access views of the high country and amphitheater-style seating near the parking lot. To reach the Glacier Point area, visitors must travel about a quarter of a mile on foot. The area is also a popular wedding location, and wedding groups must receive special use permits for their events. Other visitors use Glacier Point as a starting point for longer hikes and wilderness access. Interpretive programs, including astronomy viewing nights, are offered during peak season.

Due to the area's popularity, the parking lot fills up quickly during the park's peak visitation seasons. The Glacier Point parking area includes 195 parking spaces, including 8 accessible spaces and 6 oversized vehicle spaces. Washburn Point has 43 parking spots, including 2 accessible spaces. As the parking lot fills, congestion increases in the parking lot, and visitor vehicles form a queue that often extends to Washburn Point. Traffic congestion is compounded by the fact that the parking lot is tiered, and vehicles enter on the lower level. Visitors cannot see the upper tier of parking availability and, even when there is parking availability in the upper lot, visitors wait for spots to open at the lower level, causing an unnecessary backup. During these times, unsanctioned roadside parking often occurs, reducing visitor's enjoyment of unhampered views and damaging roadside vegetation. This congestion causes road safety concerns and makes it difficult for emergency responders to access the area for incidents or traffic management.

This area has limited water availability during the shoulder seasons.

### **Limiting Attributes**

The attribute that most constrain the amounts and types of use that the Glacier Point analysis area can accommodate is the preservation of wilderness character. To protect natural resources and allow for unimpaired views and enjoyable visitor experiences, unsanctioned and off-road parking should not occur in the area. Expanding the designated parking areas along Glacier Point Road would have adverse impacts on natural resources, including sensitive habitat for endangered species (orchids and other plants). The Glacier Point area is adjacent to wilderness boundaries. To provide maximum ecological benefits and visitor experiences consistent with the surrounding wilderness character preserve wilderness character and undeveloped quality, structures and permanent improvements should be less common than in developed areas of the park.

The most relevant indicators to monitor changes in these conditions are visitor densities at key destinations, vehicles at one time in key parking areas, and peak hour vehicles at one time within key road corridors.

### **Capacity Identification**

Park staff identified that under current visitor use levels, desired conditions for the Glacier Point area are being achieved most of the time, and current use levels should be maintained at 690 people at one time. On summer weekend days, staff have noted that desired conditions are

exceeded, and additional monitoring may be helpful, especially to better understand parking lot congestion and the number of people at the area.

## **Badger Pass Road: Winter Analysis Area**

### **Analysis Area Description**

This analysis area includes the lower portion of Glacier Point Road that is open to visitor use during the winter season, from approximately mid-December to April 1st. This 6-mile section of road becomes titled “Badger Pass Road” to differentiate between the winter ski route on Glacier Point Road. During this period, Badger Pass Road is plowed and open to use from Chinquapin (the intersection with Wawona Road) to the Badger Pass Ski Area. The portion of Glacier Point Road east of Badger Pass is closed to vehicle use, unplowed but groomed for Nordic ski access, and managed to provide maximum ecological benefit and visitor experiences consistent with the surrounding wilderness character.

Parkwide desired conditions, as well as recreation and visitor services zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

### **Existing Direction and Knowledge**

Badger Pass Ski Area, opened in 1935, is the oldest ski area in California and is an important cultural landscape, with a number of historic structures, including the historic day lodge (NPS 2010a, 2010b). The National Park Service built the ski area to encourage winter recreation at the park, specifically skiing. The long history of the area and the ongoing commercial service is the primary reason park staff plow the road to provide access to this area.

The Badger Pass area provides access to family-friendly winter activities, including downhill skiing, snowshoeing, snowboarding, cross-country skiing, snow tubing, and enjoying the snowy scenery. The ski area includes a large visitor parking area, a chalet with food and beverage service, chairlifts, and groomed trails for snowboarders and skiers. Through the concessioner that operates Badger Pass, visitors can also access equipment rentals, ski lessons, and custom backcountry ski tours.

Per the Superintendent’s Compendium, “Up to 2,300 ski lift tickets may be sold in one day for Badger Pass Ski Area.” This number was determined based on an analysis of the ski slopes to determine optimum capacity without sacrificing skier safety. In 2022, the highest use day was 1,161 passes sold in one day (the number does not include season pass users), but this was an outlier compared to the average, which was 556 people per day. Over the past years, demand for downhill skiing has not been as high as the identified limit, but the area remains popular for other winter activities.

The primary parking location for this analysis area is at Badger Pass Ski Area and can be accessed by private vehicle or a seasonally operated bus from the Yosemite Valley Lodge. Concessioner-operated motor coaches drop off and pick up skiers twice per day. The parking lot provides spaces for approximately 590 vehicles, including approximately 30 reserved spaces for overnight wilderness use for backpackers and visitors of Ostrander Ski Hut.

On weekends and holidays, the lot fills early, with many vehicles staying for most of the day. This pattern can lead to lower turnover rates for parking and general parking lot congestion. Historically, the ski lodge was the primary attraction, but over the years expanded commercial uses have grown in popularity. The Nordic Ski Center and equipment rental buildings have expanded to enhance operations. This area attracts diverse uses and users, and crowding and conflict, particularly in the parking lot, can arise as visitors seek to access recreational opportunities. When the parking lot fills, Badger Pass Road traffic is held at Chinguapin, causing traffic congestion, overfilled parking lots at Chinguapin, and traffic backups on Wawona Road. The peak daily use recorded within the past five years was around 800 vehicles in one day.

Beyond the area, the rest of Glacier Point Road is groomed for use as a snowshoe or cross-country skiing route. Though administrative motorized use occurs to groom the road, this area is otherwise managed similarly to wilderness, including a sense of solitude for visitors. While not included in this analysis areas, some wilderness trailheads near Badger Pass have winter quotas to provide overnight access to 150 people per night for seven different routes.

### **Limiting Attributes**

The attribute that most constrains the amounts and types of use that the Winter Badger Pass analysis area can accommodate is the protection of habitat and sensitive species. Additional concerns are related to the amounts of visitor services available, including additional parking, phone connectivity, electricity, water, and sewage disposal.

Proximate to the parking area is endangered species habitat for both plants and animals. While the natural function of these habitats has primary importance during the spring and summer, the winter months are important for protection, so the habitats are ready for use. Increasing use in this area has already caused the presence of additional trash, vegetation trampling, and other impacts on the habitat. When snow play occurs on a thin snowpack, the ground can be exposed, and trails or recreational routes inflict permanent damage on soil and plant life. Further, when snow accumulation is low, bears are active in the area.

While Badger Pass provides visitors with access to parking, water, food and beverage service, and restrooms, these facilities can only accommodate so much use at their current capacities. National Park Service staff have considered adjustments to these services, but options are limited due to the natural resources, including the area's rugged topography and terrain that makes construction challenging without expanding water supply and wastewater treatments systems, crossing the wilderness boundary, or expanding into sensitive habitat. So that sensitive habitats can be preserved for the use and health of wildlife, park managers do not seek to expand the footprint of existing facilities.

The most relevant indicator to monitor changes in these conditions is visitor densities at key destinations.

### **Capacity Identification**

Park staff identified that under current visitor use levels, desired conditions for Badger Pass are being achieved most of the time during the winter, and current use levels should be maintained at 590 vehicles at one time or 1,711 people at one time.



The National Park Service will monitor the area, and if concessioner transportation service operations increase to four dropoffs/pickups per day, the capacity will be reassessed to understand the impacts of a greater number of people per day accessing the area.

## **Tunnel View**

### **Location Overview**

This analysis area focuses on the Tunnel View scenic overlook area of the park. The area includes approximately 0.25 miles of the Wawona Road (Highway 41) on the east side of the Wawona Tunnel, the tunnel itself, and the viewing area. The viewing area consists of two parking areas—a primary parking lot on the north side of the road, an overflow lot at the Artist Point Trailhead on the south side of the road, and the viewing platform adjacent to the north lot. Parkwide desired conditions, as well as recreation and visitor services zone desired conditions (see appendix B), will help guide the management and visitor capacity analysis of this area.

### **Existing Direction and Knowledge**

Tunnel View provides one of the most iconic views of Yosemite Valley, showcasing the immensity of the granite walls that surround Yosemite Valley, providing classic views of El Capitan, Half Dome, Sentinel Rock, Cathedral Rocks, and Bridalveil Fall.

Two parking areas, one to the north and one to the south of the road, accommodate up to 60 passenger vehicles and up to four oversized vehicles (e.g., tour buses or large RVs). In addition, parallel roadside parking is downhill from the main lot, toward Bridalveil Fall, with established, paved parking for approximately 20 vehicles to access Tunnel View. Visitors who park in the south parking lot must cross the road to access the viewing platform. Visitors are encouraged to use the crosswalk to improve safety. There is a large pullout just past the parking areas on the east side of the tunnel that accommodates approximately 15 vehicles. Tunnel View has no restroom or other facilities. When the lots are full, unsanctioned roadside parking occurs east of the lots, sometimes encroaching on travel lanes, requiring enforcement actions by park rangers.

Tunnel View showcases Yosemite's views, allowing visitors to enjoy the vast landscape, take photos, and read interpretive signage. This activity can vary in duration, with almost all visitors staying for a short time, approximately 15–20 minutes, according to park staff. This is enough time to park, get out, take in the view, and snap a few photos. While visitors stay for a short duration, the area is extremely popular, and during the spring to fall seasons, the parking area is often full. The viewing platform is large, measuring approximately 13,500 square feet, or about the same area of an Olympic-sized swimming pool.

Desired conditions for visitor experience at Tunnel View state that “visitor experience is highly social with frequent encounters with other visitors and park staff. While congestion occurs and there may be some wait involved, visitors can access their desired services and destinations in a reasonable time. Traffic conditions reflect the busy, social, developed landscape, and visitors expect more congestion, encounters, and longer waits to park and travel than in other areas.”

While most visitors stop for the view, trailhead parking is available for Artist Point and the Pohono Trail at Tunnel View. Some rock-climbing activity originates from this area, and

backpackers use the parking for multiday trips. The area has no restrooms, which limits the time that most visitors spend at the site and can lead to issues of human waste management.

Commercial buses and the concession-operated Valley Floor Tour Tram stop at Tunnel View. Buses can have up to 47 people, and the tram can have up to 65 people who arrive at once and can dominate the viewing area. These tours tend to stick together, moving through the area in a group, often following a guide or interpreter and taking photos together.

The area can experience high congestion with through traffic going both directions, cars turning in and out of the lots, and pedestrians throughout the area. The road has limited visibility, both for vehicles exiting the Wawona Tunnel traveling east and for those traveling west as they crest the hill.

### **Limiting Attributes**

Attributes that most constrain the amounts and types of use that the Tunnel View analysis area can accommodate are geography and the quality of visitor experience. The area is small, only about 1 acre, and the area providing the key desirable overlook is even smaller. Adding a larger viewing platform or more parking is infeasible due to these geographic and topographical limitations. Visitors stop at Tunnel View to take in the iconic views and capture photos without obstructions. The viewing platform is the key experience at Tunnel View, and visitors arrive with a reasonable expectation of being able to access the view, unobstructed by other visitors, at some point during the time at the overlook.

The most relevant indicators to monitor changes in these conditions are visitor densities at key destinations and vehicles at one time in key parking areas.

### **Capacity Identification**

Park staff identified that current visitor use levels are achieving and maintaining desired conditions for resources and experiences most of the time. The visitor capacity is identified as 390 people at one time.

## **APPENDIX E: ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS**

The planning team considered other strategies, alternatives, and potential actions, including those identified through civic engagement. The following strategies were analyzed as part of the planning process but were dismissed because they were determined infeasible, are not responsive to the purpose and need for action, and/or because other less impactful alternatives could be considered. These actions and the rationale for not carrying them forward for further analysis are summarized below.

### **DRIVE-THROUGH PERMIT FOR YOSEMITE VALLEY**

#### **Concept Statement**

Offer the opportunity for visitors to purchase a timed “drive-through” permit for Yosemite Valley. This permit would allow visitors to pass through Yosemite Valley in a vehicle but would not allow parking in any of the Yosemite Valley parking lots. The drive-through permit would potentially increase the number of visitors able to experience Yosemite Valley while reducing the impact from foot traffic and parked vehicles.

#### **Reason for Dismissal**

Enforcing this concept in a way that would meet the purpose and need of the plan would be difficult, as some visitors with a drive-through permit might still choose to park their vehicle upon entering Yosemite Valley. Further, restricting visitor access to an experience confined to a personal vehicle without offering alternative means of exploring Yosemite Valley would result in a subpar experience for many visitors and would likely require additional management strategies to address congestion. Thus, this alternative was dismissed because it is both potentially technically infeasible and would have too great adverse effects on the visitor experience.

### **TWO RESERVATIONS: LIMITED YOSEMITE ACCESS (NO YOSEMITE VALLEY) AND PARKWIDE YOSEMITE ACCESS (INCLUDING YOSEMITE VALLEY)**

#### **Concept Statement**

Under this alternative, visitors would have the option to purchase two reservations: a parkwide reservation or a Yosemite Valley reservation. Those holding a parkwide reservation would be able to access all areas of the park except for Yosemite Valley. Those with a parkwide Yosemite access reservation would have unrestricted access to the entire park, including Yosemite Valley. Like the parkwide reservation system (alternatives B and C), all visitors would have their reservations verified by gate staff at the Tioga Pass, Big Oak Flat, Arch Rock, or South Entrance station to gain park entry. Also like the Yosemite Valley reservation system (alternative D), visitors with a parkwide Yosemite access reservation would undergo a second screening at the Bridalveil Straight checkpoint to confirm their eligibility to continue into Yosemite Valley.

Reservations of either type would be valid for one day. Reservations would be required during peak season dates, from approximately April through October. Reservations would be required on weekends only (Saturday and Sunday and federal holidays) in April, May, September, and October, and required seven days a week from the federal holidays Memorial Day and Labor Day. This alternative would provide a less-crowded visitor experience in Yosemite Valley while offering further protections for the rest of the park.

### **Reason for Dismissal**

This concept introduces redundancies with the parkwide peak hours reservation system and would complicate the overall reservation system process by requiring multiple screenings. The parkwide peak hours system (alternative B) serves a similar purpose as the two reservations concept, with both providing a system to allow access and manage visitation in all areas of the park. The Yosemite Valley reservation (alternative D) provides a means to manage access in Yosemite Valley specifically, while still offering both entry to the rest of the park and management of those areas through site specific actions. Further, a system comprising two separate reservations would not provide a meaningful advantage over the other alternatives in terms of providing park access for visitors or minimizing impacts.

## **RESERVATIONS BY ENTRANCE STATION**

### **Concept Statement**

The park staff considered separate reservations for each entrance station. Under this scenario, each entrance station would have a specific number of daily reservations that could be managed at different levels. Park staff also evaluated if all entrances needed reservations to be in place.

### **Reason for Dismissal**

Park staff dismissed separate reservations for entrances because this system will not meet purpose and need of the plan. The road and trail systems are connected during most of the months when reservations would be in place, so separate reservations systems would impact the reservation system's ability to manage for desired conditions at times of year when the roadway systems are connected. Although a separate reservation for the east and west sides may initially spatially distribute visitors, maintaining that distribution throughout the day is not possible. If monitoring of indicators shows that changes to the reservation system are needed, park staff could adaptively manage the seasonality, time of day, and distribution (as described in chapter 2, "Common to All Action Alternatives – Reservation Systems" section). Additionally, if monitoring of indicators shows that reservations are needed during winter months when the major roadway systems are disconnected due to seasonal roadway closures, then separate reservations for eastside and/or westside entrances could be evaluated (and appropriate environmental compliance completed) at that time.

## **TEMPORARY ENTRANCE STATION CLOSURES (NO RESERVATION)**

### **Concept Statement**

Yosemite National Park would be accessed on a first-come, first-served basis, with no reservation requirements. When visitor demand for parking exceeds supply, park staff would initiate temporary closures in specific areas to redirect visitors to areas of the park where capacity is available. Once the total number of vehicles reaches capacity or specific triggers, like Yosemite Valley reaching full capacity, entrance stations would close parkwide access until a predetermined time. The specific number of vehicles permitted to enter the park would vary by season and other factors, such as the number of open parking lots. This would help ensure that all vehicles entering the park would have a legal place to park. This alternative would be in effect year-round, but the number of vehicles allowed in the park would vary seasonally and in response to other situational factors, such as the number of open lots and available spaces.

### **Reason for Dismissal**

This concept would not meet the purpose and need of the plan. While avoiding reservation requirements would increase overall access and allow for spontaneous visits to Yosemite National Park, it would likely lead to the same crowding, congestion, and resource impacts that prompted the park's development of this plan, with the addition of uncertainty related to closures. Temporary entrance station closures would be unpredictable in range and duration, depending on the level of visitation, and would likely last at least two to five hours each day. Timing of these closures would be highly variable. Parking capacity would be reached on an almost daily basis in the summer, with fewer temporary closures during winter months. The use of area closures to protect sensitive resources, such as rare plants or meadow closures for wildlife protection, could also occur due to limitations in park capacity for restoration and the enforcement of those closures.

Based on previous experience with traffic closures at Yosemite National Park, this concept would negatively impact the visitor experience by limiting the ability to plan a visit in advance and introducing uncertainty around which areas of the park would be open.

Further, this concept would be labor and technology intensive, requiring large numbers of trained staff and seamless communication across the park to implement and communicate closures. Park staff would be responsible for managing traffic as congestion spread to new park areas, and new closures would be required, limiting staff interactions with visitors to primarily focus on traffic management activities. Given Yosemite's remote location and staffing and technology constraints, obtaining the necessary resources would likely be challenging.

## **EXPANDED INFRASTRUCTURE AND SHUTTLE SERVICES**

### **Concept Statement**

Parking infrastructure would be expanded and shuttle services into the park would increase to alleviate congestion. Parking facilities would be built and expanded in gateway communities and other underused areas, including existing lots. This concept would aim to reduce the number of

vehicles within Yosemite National Park, while allowing greater numbers of visitors to enter the park. Specifically, the project team analyzed the operations and costs of two new transit routes: a hiker shuttle from El Portal to Yosemite Valley, and a park-and-ride route from the Mono Basin Visitor Center to Olmstead Point Loop, which would provide access to the Tuolumne Meadows Visitor Center.

### **Reason for Dismissal**

The analysis determined that expanding infrastructure would not adequately manage the number of visitors in specific areas and would cause surges of visitors that would likely not be consistent with the visitor capacities determined to achieve desired conditions for visitor experience and resource protection. Increasing the number of shuttles would require decreasing the number of private vehicles in the park to protect resources and provide quality experiences. Reducing the number of private vehicles to allow for more shuttles would limit visitor mobility in the park, as shuttles would not be able to service all trailheads and visitor use sites. Further, allowing private and commercial vehicle use is preferable to constructing and/or contracting and maintaining additional infrastructure and offering new transportation services, given the limitations of the park's annual operating budget. An additional factor is the existing availability of parking opportunities for visitors along the route YARTS travels to enter the park. Ultimately, this concept does not meet the purpose and need of the plan.

The park's remote location presents challenges in contracting shuttle operators capable of servicing adequate locations within the park's large geographic footprint in a frequency that would provide a high-quality visitor experience. Based on experiences with current and past concessioners, park staff have identified the shortages as stemming from various factors, including noncompetitive wages and limited affordable housing near Yosemite National Park. The reality of limited operator availability creates conditions for inconsistent stop frequencies, resulting in bottlenecks of visitors within the park. Crowding at shuttle stops, full shuttles, and long wait times provide shuttle users with a subpar visitor experience due to limited mobility. Visitors would still experience crowding at popular destinations and high encounter rates on trails that are inconsistent with desired conditions.

This concept would also require substantial facility development—a costly solution that would strain Yosemite National Park's limited budget for the duration of each facility's lifecycle. Further, existing facilities, such as bathrooms, would not be equipped to support additional use levels, making it difficult for staff to perform critical custodial duties at peak times. Concentrated use would create resource impacts that would likely exceed established thresholds for resource protection.

A considerable amount of natural and cultural resources is currently affected by the existing infrastructure, which impacts wildlife in numerous ways. Habitat fragmentation, direct mortality, noise and sound pollution, and many other factors impact natural resources, and those impacts would likely be even greater with additional development. Cultural resources could also even be impacted by additional infrastructure, despite mitigations during the planning and implementation process. Impacts on cultural and natural resources would impact the visitor experience if those resources were further impacted by additional infrastructure.

In the future, staff may consider expanding infrastructure and shuttle services when there are regional partners for that service and when those expansions of regional transit service into the park can be provided in a manner that is consistent with managing the park according to identified visitor capacities in the drop-off locations. These proposals would be analyzed under a separate environmental analysis at the time when the proposed routes and other system design characteristics have been identified.

## **PARKING PASS**

### **Concept Statement**

Visitors would be required to purchase a parking reservation rather than a park reservation. Pass-through travel would be allowed for all visitors, with the condition that drivers do not stop and park their vehicle within the park. This concept would allow a greater number of visitors to access the park in private vehicles, while reducing competition for parking spots within the park.

### **Reason for Dismissal**

The parking pass concept does not address the entire purpose and need of the plan. This concept manages for visitor competition over limited parking spaces but does not address roadway congestion or queues at entrance gates. Visitor distribution within the park is difficult to predict, and it's likely that traffic jams would continue to occur at popular visitor destinations, including pullouts, overlooks, and other locations not included in a parking pass system, regardless of the numbers of parked vehicles. This concept is also difficult to enforce and has a high operational cost, as it would require a substantial park staff presence to monitor parking lots and enforce a parking pass system. Reservations would need to be checked at the parking lot level within the park, in addition to the entrance stations to the park. Ticketing vehicles that park without a parking pass could also present fee-determination challenges, as a penalty fee that would need to be substantial enough to deter illicit parking while not disproportionately burdening visitors who are not aware of the likelihood and/or cost of a citation. The current fee structure does not deter this parking now, and the fee schedule is determined nationally and cannot be changed for an individual park unit.

This action would require infrastructure improvements, including curbing and other constructed barriers to prevent the large-scale roadside parking that results in crowded conditions and resource damage to meadows and other environments. Reliance on curbs and other roadside parking barriers would increase overall operations and maintenance expense.

## **ADDITIONAL PARK-AND-RIDE LOCATIONS**

### **Concept Statement**

Develop additional park-and-ride shuttle options for access to Yosemite National Park. Park-and-rides could be on the Wawona Road (for those visitors coming from Highway 41) or on Big Oak Flat Road (for visitors coming from Highway 120) to compliment the (planned) park-and-ride in El Portal (along Highway 140). Facilities for shuttle operations and route connections

could be developed at Badger Pass to help link entrance routes together. This option would allow a greater number of visitors to enter the park without their private vehicle.

### **Reason for Dismissal**

Limited suitable locations exist for developing a park-and-ride facility along these corridors, and the National Park Service also does not have authority to develop facilities outside the park. Further, less impactful options exist, such as using YARTS to encourage the use of the point-to-point CUA service.

The project team evaluated areas within Foresta that could be suitable for an approximately 200-car remote parking lot and determined that this concept would have a substantial adverse impact on the adjacent community. This action would also require widening the current road to a two-lane, reconstructed roadway on a 1-mile stretch of road. Archeological and natural resources exist in the area, presenting potential resource challenges to this necessary development. Given that Yosemite already has sufficient park-and-ride options, either in active use (e.g., visitors using YARTS) or in development (planned park-and-ride for El Portal), an alternative approach to new construction is preferable and has fewer impacts than constructing additional park-and-ride facilities along other roadway corridors.

Furthermore, developing a park-and-ride facility at Badger Pass would necessitate significant infrastructure investments. There are currently no restroom facilities, trash collection services, or wastewater treatment services available at Badger Pass when the Badger Pass Ski Area Lodge is not open in the summer season. However, the facility is concession run under a contract for the winter season, which expires in 2033 and could be opened off-season. The National Park Service would need to mutually agree with the concessioner on an amendment to the current contract to allow expanded facility use during the summer season. Developing a park-and-ride facility at Badger Pass would be more appropriate to discuss during prospectus development of the next concessions contract. This opportunity could be reconsidered in the future if a park-and-ride expansion in El Portal proves to be infeasible.

This concept was dismissed from detailed analysis because there were other less-impactful and less-costly strategies, such as leveraging commercial use authorizations, which could be considered to meet this need.

## **STANDALONE INTELLIGENT TRANSPORTATION SYSTEM**

### **Concept Statement**

This alternative would rely solely on the use of a technology-driven standalone intelligent transportation system to inform visitors about transportation conditions in the park (including roadway and parking conditions). The goal would be to encourage visitors to choose to redistribute where and when they visit the park by letting them know what areas are crowded. Some public comment suggested that visitors may choose to enter the park at another time if they were informed that the park, or an area of the park, was busy, thereby resolving congestion issues.



## **Reason for Dismissal**

Visitor travel information (trip planning, wayfinding, and congestion information) is designed to ensure that visitors have the right information at the right time to make an informed decision. Typically, visitors benefit more from receiving information on what conditions will be when they arrive to a site (i.e., a travel forecast) than what current conditions are. “Real time” travel information is not relevant to many visitors, as they have already made their destination decisions and have a limited ability or interest in making a different decision with the new information.

In 2023, Yosemite National Park pilot tested a messaging system to convey near real-time parking and gate wait time information via text alerts. While these text alerts did help visitors better understand the conditions to expect when entering the park, the alerts did not result in a change in the overall volume of vehicles coming to the park at peak times.

A standalone intelligent transportation system would not meet the purpose and need of the plan, as it would not be an effective enough tool to proactively manage vehicle volumes and is also less economically feasible than other alternatives due to the significant technological infrastructure improvements that would be required. The park is geographically large, and communication to key areas remains limited due to deficiencies in telecommunications infrastructure, remoteness, topography, and line-of-sight requirements for radio and other types of communication. After completing environmental analysis as appropriate, park staff could incorporate intelligent transportation systems as a complement to other alternatives as funding and technology allow.

## **UNIVERSAL RESERVATIONS**

### **Concept Statement**

Require a reservation for all entries to Yosemite National Park—24 hours a day—during high-use days in the summer season. This concept would support clear communication with the public through the consistent message that a reservation is required to enter Yosemite National Park at any time.

### **Reason for Dismissal**

This concept does not meet the purpose and need of the plan and imposes restrictions to visitors that are not consistent with NPS guidance or current direction. First, the National Park Service has recently been developing national guidance on park entry managed access strategies, which encourages providing certain times of the day and/or year when reservations are not required for park entry systems, allowing some opportunity for spontaneous access outside of reservation-required hours. Second, NPS *Management Policies 2006*, section 8.2, also directs that “Restrictions placed on recreational uses that have otherwise been found to be appropriate would be limited to the minimum necessary to protect park resources and values and promote visitor safety and enjoyment.” At this time, the alternatives described in chapter 2 represent the minimum necessary restrictions that provide freedom of access to the public.

This concept could be evaluated in the future if technology to implement it is approved and tested, fee policies have been updated, and/or the alternatives described in chapter 2 no longer represent the minimum necessary restrictions to protect park resources and values while promoting visitor safety and enjoyment.

## **ROADWAY CHANGES TO SOUTHSIDE DRIVE IN ALTERNATIVE D**

### **Concept Statement**

Use construction solutions, including road widening, multiple realignments, and the development of a new roundabout, to create space for two-lane traffic and facilitate visitor turnarounds at the intersection of Southside Drive near the Pohono Bridge.

### **Reason For Dismissal**

The construction actions described above were analyzed and determined as not necessary to implement alternative D. Instead, minor roadway modifications were proposed to accommodate two-way traffic on Southside Drive, such as striping, signage, and curb improvements. Road widening may be considered as a separate project in the future to accommodate larger vehicles, but current road widths are sufficient to accommodate two-way traffic without significant construction.

## APPENDIX F: IMPACT TOPICS CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

The following impact topics were not carried forward for analysis because they do not exist in the project area; they would not be affected by the proposal; the likelihood of impacts is low; or, through the application of mitigations measures, there would be no potential for significant impacts. Additionally, these impact topics were not a subject of contention among the public and other agencies.

### FEDERALLY LISTED SPECIES

The National Park Service accessed the most recent USFWS list of species that are listed and protected under the federal Endangered Species Act that may occur in the park (USFWS 2024) and the Yosemite National Park species list (NPS 2024). The species considered but dismissed in this document are provided in Table F-1.

**Table F-1. Dismissed Federally Endangered, Threatened Species That May Occur in Yosemite National Park (as of April 2024)**

Common Name	Scientific Name	Federal Status	Potential for Species or Habitat in Planning Area	Proposed or Designated Critical Habitat in Planning Area
<b>Mammals</b>				
North American wolverine	<i>Gulo gulo luscus</i>	T	No	No
Sierra Nevada bighorn sheep	<i>Ovis canadensis sierrae</i>	E, FCH	No	Yes
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	E	Yes	No
<b>Birds</b>				
California condor	<i>Gymnogyps californianus</i>	E	Yes	No
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No	No
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	T	No	No
<b>Amphibians</b>				
California red-legged frog	<i>Rana draytonii</i>	T	Yes	No
Foothill yellow-legged frog	<i>Rana boylei</i>	E	Yes	No

Common Name	Scientific Name	Federal Status	Potential for Species or Habitat in Planning Area	Proposed or Designated Critical Habitat in Planning Area
Sierra Nevada yellow-legged frog	<i>Rana sierrae</i>	E, FCH	Yes	Yes
Western spadefoot toad	<i>Spea hammondi</i>	PT	No	No
Yosemite toad	<i>Anaxyrus canorus</i>	T, FCH	Yes	Yes
Northwestern pond turtle	<i>Actinemys marmorata</i>	PT	Yes	N/A
<b>Fishes</b>				
Lahontan cutthroat trout	<i>Oncorhynchus clarkii henshawi</i>	T	No	No
<b>Insects</b>				
Monarch butterfly	<i>Danaus plexippus</i>	C	Yes	No
<b>Conifers and Cycads</b>				
Whitebark pine	<i>Pinus albicaulis</i>	T	Yes	No

C–Candidate Taxon, Ready for Proposal; E–Endangered; FCH–Federal Critical Habitat; PT–Proposed Threatened; T–Threatened

The fisher and California spotted owl have been carried forward for analysis. The following species have been dismissed from detailed analysis for the following reasons (PT–Proposed Threatened; E–Endangered; T–Threatened; C–Candidate Taxon, Ready for Proposal):

- **North American wolverine (T):** The wolverine is not commonly seen in the project area. As a result, the project is anticipated to have no effect on the wolverine.
- **Sierra Nevada bighorn sheep (E):** The bighorn sheep is present in the project area, but any impacts on the species are anticipated to be indirect and minimal. Therefore, the project is anticipated to have no effect on the Sierra Nevada bighorn sheep.
- **Sierra Nevada red fox (E):** The red fox is present in the project area, but any impacts on the species are anticipated to be indirect and minimal. Therefore, the project is anticipated to have no effect on the Sierra Nevada red fox.
- **Southwestern willow flycatcher (E):** The willow flycatcher is not present in the project area or the park. Therefore, the project is anticipated to have no effect on the Southwestern willow flycatcher.
- **California condor (E) and yellow-billed cuckoo (T):** Neither of these species are present in the park nor present in the project area. Therefore, the project is anticipated to have no effect on the condor nor the cuckoo.

- **Amphibians and reptiles (California red-legged frog; Sierra Nevada yellow-legged frog, western spadefoot toad, foothill yellow-legged frog, northwestern pond turtle):** The alternatives evaluated do not include any major alterations to the aquatic environments, terrestrial habitats (when applicable), or principal component elements to critical habitats (when applicable) for aquatic listed species. The foothill yellow-legged frog is extirpated in the park, as evidenced by recent extensive visual and eDNA surveys. While spadefoot toads do occur outside Yosemite National Park, the park is outside of their range (both current and historic), and no observations of the species are known to exist in Yosemite. While Yosemite toads, Sierra Nevada yellow-legged frogs, and northwestern pond turtles occur within Yosemite and are subjected to potential road mortality risks, plan alternatives would not result in differences in road mortality risk when compared with existing conditions. For these reasons, the alternatives evaluated are anticipated to have no effect on these amphibian and reptile species, and they have been removed from further analysis/consideration.
- **Lahontan cutthroat trout (T):** The alternatives evaluated do not include any major alterations to the aquatic habitats and the park. For these reasons, the alternatives evaluated are anticipated to have no effect on Lahontan cutthroat trout, and this species has been removed from further analysis/consideration.
- **Monarch butterfly (C):** Monarch butterflies are known to occur within the project area. The park contains a diversity of milkweed which serves as habitat for the species. Because milkweed is such a common species found in the park, the alternatives evaluated are not anticipated to have an impact on the monarch butterfly at the population level. Therefore, the project is anticipated to have no effect on the monarch butterfly.
- **Whitebark pine (T):** Whitebark pine is not within the project area. While the species is common near Tioga Road at entrance stations, the alternatives evaluated include no ground disturbance at entrance stations. Therefore, the project is anticipated to have no effect on the whitebark pine.

## VEGETATION AND SOILS

Yosemite contains five major vegetation zones, including chaparral/oak woodland, lower montane forest, upper montane forest, subalpine zone, and alpine, with more than 1,400 plant species. The park has suitable habitat for more than 160 rare plants in the park, with rare local geologic formations and unique soils characterizing the restricted range of many of these plants. Yosemite possesses extensive blocks of intact old-growth forests, including three groves of giant sequoia trees, as well as some of the largest known specimens of several tree species.

Periodic high volumes of visitors and traffic congestion can lead to resource trampling and social trailing at popular destinations and damage associated with overflowing parking in undesignated and illegal areas. Each of the action alternatives in this plan proposes options to avoid or alleviate these impacts. In addition, all action alternatives seek to avoid resource damage associated with visitor use by minimizing significant infrastructure, which could variably impact vegetation and soils.

Under any of the action alternatives considered, there would be some adverse impacts on natural resources primarily because of installation of infrastructure needed to support a reservation system and relocate parking and visitor services to more sustainable locations. The adverse impacts are expected to be minimal because most areas where construction would take place are already developed or previously disturbed. For example, the total potential impacts on vegetation and soils where ground disturbance is proposed under the action alternatives is less than 0.5 acre in an area that is already paved, and, therefore, impacts are anticipated to be minimal. No special or unique vegetation or soil would be lost and the abundance and distribution of vegetation and wildlife in the area would not substantially change.

The impacts of the additional facilities on the built environment are analyzed under the archeological resources impact topic. In addition, the potential impacts due to social trailing are not meaningfully different across the action alternatives, and the social trailing indicator would help mitigate this issue. Lastly, roadside parking would be mitigated under alternatives B and C, as there are more opportunities to park in designated locations under these alternatives. Under alternative D, there is a potential for roadside parking to occur, but this is mitigated by installing boulders or other elements to reduce instances of roadside parking in unauthorized locations. As a result, vegetation and soils were dismissed from detailed analysis.

## **HISTORIC ENTRANCE STATIONS**

The Arch Rock entrance station in Yosemite Valley has been determined to be eligible for inclusion in the National Register of Historic Places. This station, as well as the entrance stations at Big Oak Flat and Hetch Hetchy, would be modified under each of the action alternatives to enable easier turnarounds and reservation check stations. (The latter two have been determined to be ineligible for inclusion in the national register.) None of the proposed modifications would detract from or damage the historic features of the Arch Rock entrance station, and the historic building would continue to retain its eligibility for inclusion in the national register. As a result, historic entrance stations were dismissed from further analysis.

## **WETLANDS**

To comply with Executive Order 11990, "Protection of Wetlands," any facilities or construction would be designed to avoid adverse impacts associated with the destruction or modification of wetlands. Park managers are advised to avoid the direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The park contains three major types of wetlands: riverine, lacustrine, and palustrine. The alternatives evaluated do not include any changes in development to wetland habitats. Therefore, wetlands were dismissed from detailed analysis.

## **FLOODPLAINS**

Executive Order 11988, "Floodplain Management" requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid the direct or indirect support of floodplain development wherever there is a practicable alternative. The project area is located within two

floodplains—the Tuolumne Meadows 100-year floodplain and the Yosemite Valley 100-year floodplain. Alternative D includes two major road actions on Southside Drive near Wawona Road, but these actions are outside of the 100-year Yosemite Valley 100-year floodplain. Therefore, a floodplain statement of findings is not required, as there would be no impacts on human health and life or capital investment nor effects on natural beneficial floodplain values, as outlined in the companion procedural manual to Director’s Order 77-2: *Floodplain Management*. Minimization of harm and risks to life and property is accomplished by avoiding any construction within the floodplain. For these reasons, no long-term, adverse impacts on floodplains are anticipated as a result of this project. Therefore, floodplains were dismissed from detailed analysis.

## **AIR QUALITY**

Yosemite National Park is a Clean Air Act Class I area. This designation provides special protection for air quality, sensitive ecosystems, and clean, clear views. Clean air enhances the color and contrast of the park’s landscape features; allows visitors to see great distances; enhances the view of wide-open expanses; enables dark night skies; and contributes directly to ecosystem, visitor, and staff health. National Park Service *Management Policies 2006* directs parks to seek the best possible air quality to “preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas.” Emissions from vehicles in the park affect local air quality. The park is located within Environmental Protection Agency nonattainment areas for ozone and particulate matter, and changes in transportation management could affect local air quality and emissions. Construction activities, including operating equipment and hauling materials, could result in temporary increases in vehicle exhaust and emissions, as well as inhalable particulate matter. In various isolated areas, construction activities would have localized effects on air quality. However, the impact on air quality would be rapidly dissipated through air movement, and the effects would be minimal and localized. Some of the action alternatives may slightly reduce the number of total vehicles entering the park at one time but would likely not impact the overall number of vehicles entering the park. While park managers are interested in pursuing low-carbon or zero-emission shuttle options as operations allow, any changes to air quality as a result of implementing one of the action alternatives are anticipated to be minimal. The development of the visitor access management plan would not contribute to long-term impacts on air quality at the park. Therefore, air quality was dismissed from detailed analysis.

## **ACOUSTIC ENVIRONMENT AND SOUNDSCAPE**

National Park Service *Management Policies 2006* and Director’s Order 47: *Soundscape Preservation and Noise* state that the preservation of natural soundscapes associated with national park units is an important component of the NPS mission. The development of the visitor access management plan would not contribute to long-term impacts on the acoustic environment and soundscapes at the park for several reasons. First, the current soundscape already has numerous human influences in highly visited areas of the park. Second, new construction would likely have temporary impacts on the soundscape while construction activities occur, such as human-caused sounds from equipment and vehicular traffic. Any construction associated with the implementation of the alternatives evaluated could result in

dissonant sounds, but such sounds would be localized and of short duration, typically less than a couple of weeks in any given spot. Third, under action alternatives, the number of vehicles is anticipated to be generally more spread out throughout the day, resulting in an overall positive impact on soundscape. Therefore, acoustic environment and soundscapes was dismissed from detailed analysis.

## **NIGHT SKY**

National Park Service *Management Policies 2006* and Director's Order 41: *Wilderness Stewardship* state that the preservation of natural soundscapes associated with national park units is an important component of the NPS mission. The development of the visitor access management plan would not contribute to long-term impacts on night skies for several reasons. First, the current night sky already has numerous human influences in highly visited areas of the park. Second, under action alternatives, the number of vehicles is anticipated to be generally within daytime hours, resulting in no change to night sky. Therefore, night sky was dismissed from detailed analysis.

## **WILDERNESS NATURAL QUALITY**

Human-caused changes to wilderness ecological systems can be intentional or unintentional. The natural quality of wilderness character is enhanced by preserving native biodiversity; allowing natural processes to continue; and by mitigating, reducing, or eliminating the effects of human civilization on natural processes and communities. Species health contributes to the wilderness quality, and special status species are analyzed in this plan.

The diverse landscapes of Yosemite Wilderness include rolling, forested uplands, extensive networks of unimpeded rivers and streams, and high glaciated peaks of the Clark and Cathedral ranges. The natural quality of the park's designated wilderness is generally in good condition, and human-caused fragmentation is not a major issue. At certain concentrated public use areas, the intensity of visitor use has led to vegetation trampling, the erosion of soils, the proliferation of informal visitor-created trails, and limited water quality impacts (Jenkins et al. 2021; Forrester et al. 2017; NPS 2016). Under all alternatives in the visitor access management plan, these recreation-related impacts are expected to continue at a similar level. Therefore, the development of the visitor access management plan would not contribute to long-term impacts on the natural quality of Yosemite wilderness.



## **APPENDIX G: MITIGATION MEASURES**

The National Park Service places strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. Therefore, the National Park Service would implement mitigation measures and best management practices to protect the natural and cultural resources that plan implementation could affect. Unless otherwise specified below, the authority for these mitigations comes from the NPS Organic Act and NPS *Management Policies 2006*. Under all the alternatives evaluated in this plan/environmental assessment, the following mitigation measures would be applied to avoid and minimize potential adverse impacts on the fundamental resources and values of Yosemite National Park.

### **VISITOR USE AND EXPERIENCE**

- Actions would be implemented to reduce the adverse effects of construction and development on the visitor experience. Measures may include, but would not be limited to, seasonality of projects, noise abatement, visual screening, and signs so that visitors can avoid construction activities.
- Construction work would be conducted at times that avoid peak visitor use (e.g., weekends, holidays) to the extent practicable to minimize inconveniences to visitors.
- Information would be made available to the public about the implementation of projects, including schedule and times.

### **WILDLIFE, SPECIAL STATUS SPECIES**

- Park staff would inform construction personnel of the occurrence and status of special status species within the project area, the potential impacts construction activities may have on the species, and the potential penalties for taking or harming a special status species.
- Qualified biologists would conduct studies to determine if rare, threatened, or endangered state or federally listed species are present before construction projects are implemented to avoid disturbance and ensure appropriate locations and design of facilities.
- Park vegetation staff would be on-site during construction work near whitebark pines to avoid impacts on whitebark pine.
- Contractors are required to report any wildlife collisions they witness or are responsible for to park staff immediately. Construction vehicle speeds would not exceed construction zone posted speed limits to decrease wildlife/vehicular incidents. Speed limits outside the construction zone would default to the posted speed limit.
- All project work would begin at least 30 minutes after dawn and end at least 30 minutes before dusk unless special permission is given by the park biologist. If night work is approved, all lighting would follow NPS lighting guidelines. This would reduce the

likelihood of roadkill and reduce disturbance of fishers that are moving through their habitat.

- If documented excessive vehicle mortality of wildlife species occurs beyond historical norms when the reservation system is implemented, park staff would evaluate the location and cause of the strike and implement site-specific action for the roadway corridor of concern or adapt the reservation system to start at 12:00 a.m. (midnight if a discrete area could not be identified).
- Evaluate wildlife location data that indicate increased risk of road mortality to sensitive wildlife species and analyze the data source, type, location, and timing to (1) identify and implement site-specific action for the roadway corridor of concern, OR (2) if no action is sufficient to acceptably lower the risk, modify reservation system start time (to 12:00 a.m. or later) at one or more entrance station(s) based on location and temporal wildlife movement information.
- To protect fishers, the following measures would be implemented:
  - To the extent feasible, all high-quality habitat trees would be maintained (i.e., trees with broken tops, cavities, large branches, or other deformities that occur in high-quality habitat, especially live hardwoods >20 inches diameter at breast height (dbh), live conifers >30 inches dbh, dead hardwoods >27 inches dbh, and dead conifers >35 inches dbh).
  - Large-diameter snags would be retained and recruited, dense canopy in the vicinity of large trees would be maintained, and large woody debris (down logs, large down branches, root masses, live branches) would be retained and recruited.
  - Food and anthropogenic garbage would be stored in park-approved containers so fishers could not obtain it.
  - Construction fencing would allow for the safe passage of fishers and would not cause entrapment.
  - Work crews would be taught how to identify a fisher and den trees before work begins. They would be instructed to contact the park wildlife biologist immediately if a fisher is seen in or near the project site. If a fisher is spotted within a construction site, work would cease until the animal moves on without harassment. If a fisher is spotted in a potential den tree, work would cease, and the park wildlife biologist would be contacted. The wildlife biologist would contact the US Fish and Wildlife Service for further guidance.
  - Tree work would be avoided in potential denning habitat from March 1 to May 31 or in den clusters from March 1 to June 30. This limited operating period in den clusters can be lifted on June 1 if pre-project surveys document the absence of fisher. This limited operating period in den clusters may otherwise be waived or modified if the park biologist determines that the project is unlikely to result in

breeding disturbance due to the intensity, duration, timing, and specific location of the activity (e.g., activities that would affect no more than 10 acres of denning habitat along a high traffic road for a period of three days after May 1 and would not remove any large trees). When removing large tree hazards (i.e., conifer snags >35 inches dbh and hardwood snags >27 inches dbh), the tree hazard would be cut as high as possible to maintain the habitat structure.

- No new road construction or development of infrastructure would occur in potential or high-quality denning habitat from March 1 to June 30. This limited operating period could be lifted on June 1 if pre-project surveys document the absence of fisher. This limited operating period may otherwise be waived or modified if the park biologist determines that the project is unlikely to result in breeding disturbance due to the intensity, duration, timing, and specific location of the activity (e.g., activities that would affect only 10 acres of denning habitat along a high-traffic road for a period of three days after May 1 and would not remove any large trees).
- To protect special status bird species and migratory birds, the following measures would be implemented. This project will follow Class 1 Conservation Measures for other activities besides vegetation treatment.
- Class 1: Designate activity centers and protected activity centers:
  - NPS biologists will survey areas that may elicit a response from a resident owl or pair of owls (e.g., nesting/roosting, foraging habitat) in advance of any management activities that would affect owls following USFWS-approved survey methods.
  - If surveys are not conducted or do not follow USFWS-approved methods, assume owls are present in suitable nesting/roosting and foraging habitat.
  - The biologist will designate owl activity centers and protected activity centers, where appropriate, based on survey results.
- Class 1: Protect individual owls and active nesting through implementation of a limited operating period:
  - Implement an limited operating period within 0.25 mile of an active nest or roost site (if known) or within a protected activity centers (if active nest/roost site is not known), or in and within 0.25 mile of nesting/roosting habitat (if surveys were not conducted in habitat). For activities that generate noise to levels that could impact an owl, implement a limited operating period from March 1 through July 9.
  - The limited operating period may be discontinued in a given year if protocol-level surveys for determining reproductive status confirm owls are not nesting in that calendar year.

- Outside of the nest stand (or greater than 372 feet from either an active nest, or from unsurveyed nesting/roosting habitat of sufficient patch size to support nesting), transient, short-duration activities that take place over the course of one day or less do not require implementation of a limited operating period (e.g., bucking a few fallen logs from a trail, repairing potholes or clearing debris along a road). The National Park Service may coordinate with the US Fish and Wildlife Service to ensure proposed activities fit within this exception to the limited operating period.
  - Outside or inside the nest stand, or within unsurveyed suitable nesting/roosting habitat, short-duration activities with a small footprint lasting less than two hours (total) in duration do not need to follow the limited operating period (for example, clearing several downed trees in one location or within a 0.25 mile stretch of trail with a chainsaw, repairing potholes or clearing patches of debris along a side road). Nonmotorized equipment may be used if activities occur in less than one day. The National Park Service may coordinate with the US Fish and Wildlife Service to ensure proposed activities fit within this exception to the limiting operating period.
  - Activities that are within high use developed areas (e.g., park “villages,” high-visitation parking lots) or immediately adjacent roadways (i.e., roads within 300 feet of high use developed areas) do not need to implement the limited operating period. The National Park Service may coordinate with the US Fish and Wildlife Service to ensure proposed activities fit within this exception to the limited operating period.
- Class 1: Do not remove suitable habitat nor reduce habitat function in territories.
  - Class 1: Do not use rodenticides in suitable owl habitat.
  - Class 1: Limit the removal of large trees, snags, or logs to only those that are necessary to achieve project goals.
  - If project work involved vegetation modification and occurred during the breeding season (May 1–July 31), park staff would reach out to terrestrial wildlife staff to arrange a survey for nesting migratory birds before removing or trimming to fulfill requirements of the Migratory Bird Treaty Act of 1918. Once surveyed, park staff would have one week to perform project work; if work were not completed within one week, trees must be resurveyed. If an active nest is discovered, project work may not occur within a 100-foot radius buffer of the nest until nestlings fledge.
  - To protect bears:
    - All food, toiletries, and scented items (i.e., bug spray) would be placed in bear boxes at the construction site provided by the workers. Bear boxes must remain closed and latched at all times, unless items are being retrieved. No food, toiletries, or scented items would be stored in vehicles or left out.

- All vehicles would be checked daily to ensure that no items that may attract bears remain inside an unattended vehicle. Items that would not be left in vehicles include canned food, drinks, soap, cosmetics, toiletries, domestic trash, recyclable food containers, ice chests, grocery bags, and unwashed items used for preparing or eating meals.
- All windows and doors in recreational vehicles or trailers used for lodging or office space would be closed and latched when not occupied.
- Workers would walk the job site at the end of each day and check for trash, food, and food-related items remaining at the site and dispose of the items in a bear-proof receptacle.
- Workers would call the Save-a-Bear hotline (209) 372-0322 to report overflowing trash containers, improperly stored food, or bear sightings.

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## APPENDIX H: PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

For the purposes of assessing cumulative impacts of the alternatives, as well as understanding the breadth of the planning portfolio, the National Park Service identified the following projects, plans, or actions that have, are currently, or may in the future potentially affect the resources analyzed in the environmental assessment. The date of each action refers to the planning completion date for past planning efforts or the project creation date for present and future actions. For more information about key planning efforts and projects in Yosemite, visit <https://home.nps.gov/yose/getinvolved/planning.htm>.

### PAST PLANNING EFFORTS

**General Management Plan (1980).** This plan defines the direction for resource preservation and visitor use in Yosemite National Park. It provides a foundation for decision-making and sets long-term goals for the park. The plan was developed with broad public involvement. This plan has been formally amended multiple times, and these amendments are mentioned with their respective plans below.

**Wilderness Management Plan (1989).** Officially designated by the California Wilderness Act in 1984, the Yosemite Wilderness Area encompasses over 94% of Yosemite National Park and is currently managed under the 1989 wilderness management plan. The visitor access management plan does not amend the wilderness management plan.

**Concession Services Plan (1992).** This plan is an amendment to Yosemite's 1980 general management plan and guides the management of concession enterprises such as lodging, food, retail, and other commercial services in Yosemite National Park. This plan serves as the basis for contracts between the National Park Service and the park's primary concessioner.

**Yosemite Valley Loop Road Rehabilitation Project (February 2006).** The Yosemite Valley Loop Road is a historic feature in Yosemite National Park, first built as a stagecoach road in 1872. The initial pavement was laid in 1909, and culverts were first installed a year later beneath stretches of Southside Drive. Spot repairs have been made along the roadway as required over time. However, much-needed, comprehensive maintenance and repair of the roadway and associated drainage structures have not been performed for many decades. The *Rehabilitation of the Yosemite Valley Loop Road Environmental Assessment* guides the resurfacing and improvement of the Yosemite Valley Loop Road and associated drainage facilities. This project was originally intended to address various rehabilitation needs and road surface improvements and fulfill additional drainage needs. However, the previous Merced Wild and Scenic River-related court decision directed the National Park Service to prepare a new, valid comprehensive management plan for the river. In the absence of a user capacity management framework and the river values that such a plan would identify, the full construction planned for this project will be postponed. However, the judge did grant park managers permission to move forward with the culvert and drainage work addressed in this project. Therefore, the construction related to culvert work will continue in stages.

**Reconstruction of Critically Eroded Sections of the El Portal Road (August 2007).** The El Portal Road begins at the western boundary of Yosemite National Park. This road climbs 7.5 miles through the Merced River canyon, gaining almost 2,000 vertical feet before it intersects the Yosemite Valley Loop Road at Pohono Bridge. Along the way, this road parallels the Merced Wild and Scenic River and passes the Arch Rock entrance station. Significant damage occurred during the 1997 flood, necessitating an almost complete reconstruction of the El Portal Road. Since then, the National Park Service has rebuilt the westernmost 6.5 miles of the road—referred to as segments A, B, and C— but before completion, reconstruction of the final 1-mile segment of the project, referred to as segment D, was halted as a result of a successful legal challenge. The *Reconstructing Critically Eroded Sections of the El Portal Road Environmental Assessment* focuses on the area that starts at the Big Oak Flat Road intersection and extended east 1,350 feet; the document focused specifically on those areas in need of emergency repair. The work on this section of road was completed in 2008.

**Glacier Point Road Rehabilitation (October 2007).** The Glacier Point area attracts many park visitors due to its extraordinary views of the Sierra Nevada Mountains and its breathtaking drop to Yosemite Valley 3,000 feet below. It is also the starting point for many backcountry adventures, as well as an area loved by stargazers. This project included the rehabilitation of 5.1 miles of Glacier Point Road between and included improvements to the Chinquapin intersection and the Badger Pass Ski Area parking lot. The original paved roadway was completed in 1936, replacing the original wagon road built in 1882. This area attracts high volumes of traffic year-round because it provides access to Bridalveil Creek Campground, the Glacier Point area, the Badger Pass Ski Area, and numerous trailheads.

**Tunnel View Overlook Rehabilitation Project (December 2007).** The Tunnel View scenic overlook is a historic site located adjacent to Wawona Road. This overlook affords expansive views of Yosemite Valley, El Capitan, Bridalveil Fall, and Half Dome that have captured the awe of visitors for nearly 75 years. The purpose of the Tunnel View Overlook Rehabilitation Project was to remedy long-standing vehicle-to-vehicle and vehicle-to-pedestrian safety issues, correct drainage deficiencies and problems, provide clear circulation patterns for pedestrians and vehicles, enhance and maintain viewing opportunities for visitors, provide accessibility to viewing areas, correct safety problems associated with the Inspiration Point Trailhead, and address sanitation issues, while maintaining the naturalistic, rustic character and integrity of this historic site. Public scoping for this project was initiated in late spring 2007, with an environmental assessment produced in fall 2007. A finding of no significant impact was signed in December 2007. Work to implement this project took place in 2008.

**Hetch Hetchy Communications Systems Upgrade Project (April 2008).** The existing equipment, using existing phone lines, transmits voice and data communications essential to the operation and security of Hetch Hetchy Water and Power's electric and water supply utilities and is also used by Yosemite personnel for park communications. The existing radio and fiber optic equipment was obsolete and no longer supported by their manufacturers; this project updated this infrastructure by replacing or updating components of the communication system throughout Tuolumne County, including potentially adding one new site within Yosemite National Park.



**Tenaya Lake Area Plan (July 2008).** Tenaya is the largest lake in Yosemite’s frontcountry. Because of the lake’s remarkable scenic qualities and proximity to Tioga Road, it is one of the most popular destinations for summer visitors in Yosemite. Problems associated with visitor use, visitor safety, and resource impacts have been occurring for decades. The *Tenaya Lake Area Plan Environmental Assessment* was initiated in 2008 and provides for a formal, public analysis of these long-standing issues and presents a plan to remedy these issues. The assessment addressed public review and implementation requirements of section 106 of the National Historic Preservation Act.

**Invasive Plant Management Plan and Update (September 2008 and August 2011).** In 2008, Yosemite National Park staff created the *Invasive Plant Management Plan* (2008) to provide a comprehensive, prioritized program of invasive plant prevention, early detection, control, systematic monitoring, and research. The 2008 plan uses an integrated pest management approach to detect, control, and prevent priority invasive plants from spreading into uninfested areas. The best available scientific and practical information is considered in planning control efforts. A full range of cultural, manual, mechanical, and chemical control techniques are considered for use, including preventing the introduction of invasive species, hand pulling and mowing, and the judicious use of herbicides to treat established populations. The *Invasive Plant Management Plan Update* gave Yosemite National Park resource managers greater flexibility in responding to present and future threats to park resources from nonnative invasive species. While the 2008 plan provides a foundation for well-developed decision-making and prioritization strategies, the update outlines a protocol for adaptive management techniques that would provide greater flexibility to respond to present and future threats. As new herbicides are developed, tested, and approved for use in the western states, adaptive management would allow park managers to select more effective herbicides that have fewer undesirable effects.

**Yosemite Environmental Education Campus Environmental Impact Statement (January 2010).** NatureBridge, a Yosemite National Park nonprofit partner, aims to promote visitor understanding, stewardship, and appreciation of diverse park environments. NatureBridge operates an environmental education campus at Crane Flat under a cooperative agreement with the park. This campus serves both the park and NatureBridge by fulfilling their shared mission. The campus at Crane Flat has served as an educational facility since 1971. The facilities comprise older buildings and structures that have been assembled over time and were not originally designed for educational purposes. To address this issue, park managers and NatureBridge began planning for a new campus in 2002, including the preparation of a draft environmental impact statement. Public scoping was completed in November 2002. The final plan was completed in 2010 for a new campus to be built near Hennes Ridge south of Yosemite Valley.

**Parkwide Communication Data Network (May 2010).** Effective communications are critical to Yosemite National Park’s success in protecting park resources and delivering a range of services to park visitors. Prior to this project, Yosemite relied on an outdated and unreliable communication system that performed poorly or failed in bad weather and did not share a single “backbone” to transmit telephone, radio, computer, or other information. The purpose of this project was to upgrade Yosemite’s internal communications system with more reliable, efficient technology and create a communications backbone that could support all the park’s

communication needs. The new communication network would employ modern technology to provide a platform for computer LAN data, radio communications, security and safety video systems, telephony, burglar/intrusion and fire alarm systems, traffic collection data, and telemetry. This communication would be handled on one shared system rather than multiple independent systems.

**Tenaya Lake Area Plan (May 2011).** Tenaya Lake is a magnificent High Sierra lake surrounded by granite domes, lodgepole forests, and Yosemite's vast wilderness. The lake is the largest natural lake in Yosemite. Because of its remarkable scenic qualities, inviting blue water, and proximity to Tioga Road, Tenaya Lake is one of the most popular destinations for summer visitors in Yosemite. Problems associated with visitor use, visitor safety, and resource impacts have been occurring for decades. The *Tenaya Lake Area Plan* provided a plan to guide NPS management actions to restore and protect resources while providing opportunities for appropriate high country visitor experiences at Tenaya Lake. The three main goals for the plan were to protect natural and cultural resources, improve visitor enjoyment, and increase visitor safety.

**Badger Pass Ski Lodge Rehabilitation Plan (June 2011).** The Badger Pass Ski Lodge, constructed in 1935, is historically significant as the first alpine ski resort in California and as an example of NPS Rustic architecture with Swiss chalet influences. The lodge's location in a high-elevation alpine meadow has exposed the lodge to temperature extremes, heavy snow loads, snowmelt runoff, and saturated ground conditions. These environmental stresses, coupled with inadequate site drainage and snowmelt management systems, contributed to structural deterioration of the lodge. Repairing and rehabilitating the ski lodge was necessary to protect its historic integrity, assure visitor safety, and maintain ski area visitor services while preserving the natural and cultural resources at the ski area.

**Scenic Vista Management Plan (July 2011).** The *Scenic Vista Management Plan* was needed to reestablish and maintain Yosemite National Park's iconic views, vistas, and discrete lines of sight that are obscured by vegetation growth. When the park was originally set aside, vegetation patterns were much more open, with unblocked views and open meadows. Open oak woodlands allowed for easy viewing of granite walls and waterfalls in Yosemite Valley. The mix of meadows with low- and high-density forests throughout the park was maintained by natural (unplanned ignition) wildfires that burned in mosaic patterns.

**Comprehensive Interpretive Plan (2012).** Yosemite worked on the development of a comprehensive interpretive plan and completed its major component—the long-range interpretive plan. This plan outlines a comprehensive approach to interpreting park natural and cultural resources. The plan is necessary to ensure long-term protection of resources through visitor understanding and enjoyment. The long-range interpretive plan will guide interpretation and education in Yosemite for the next 5–10 years.

**Ahwahnee Comprehensive Rehabilitation Plan (January 2012).** The Ahwahnee, located in Yosemite Valley, includes a national historic landmark hotel, guest cottages, an employee dormitory, and associated grounds and landscaping. Built in 1927, the Ahwahnee Hotel is an iconic landmark and is used year-round by both overnight and day visitors to Yosemite Valley. The purpose of this project was to develop a comprehensive plan for phased, long-term

rehabilitation of the Ahwahnee, along with associated guest cottages, employee dormitory, and landscaped grounds.

**Curry Village Rockfall Hazard Zone Structures Environmental Assessment (February 2012).** Curry Village is located at the base of sheer granite walls below Glacier Point near the eastern end of Yosemite Valley. As a result, portions of Half Dome Village are within the defined rockfall hazard zone established by Yosemite National Park management. The Curry Village area is historically significant and is included in the Camp Curry (Curry Village) and the Yosemite Valley Historic Districts. In response to past rockfall events, the National Park Service has realigned the boundary of the rockfall hazard zone in Curry Village. To reduce health and safety hazards, all of the structures within the updated rockfall hazard zone were closed. The National Park Service developed this environmental assessment to address these structures. The purpose of this project was to mitigate inherent safety risks associated with unauthorized visitor access to the closed rockfall hazard zone, minimize the potential for further loss of historically significant structures and/or features that contribute to the Curry Village Historic District, and identify appropriate mitigation to resolve the potential adverse effect on the Curry Village Historic District.

**Tioga Road Rehabilitation Plan (November 2012).** This plan focused on the rehabilitation of approximately 40 miles of Tioga Road. The primary goal of this project was to make safety improvements while preserving the natural and cultural resources along the road corridor. This road provides access to Tuolumne Meadows, Tioga Pass, US Route 395, and numerous popular trailheads including John Muir, Pacific Crest, Yosemite Creek, Lukens Lake, and others beginning in Tuolumne Meadows.

**Half Dome Trail Stewardship Plan (December 2012).** Half Dome, one of the most popular attractions in Yosemite National Park, lies in designated wilderness. In 2008, up to 1,200 people a day tackled the famous trek up the cables; the high level of use led to both safety and environmental concerns. To address impacts caused by increased visitor use of the Half Dome Trail, the National Park Service developed a management plan. The purpose of the plan was to provide long-term stewardship of the Half Dome route in a manner that is consistent with the Wilderness Act and the NPS Organic Act.

**1997 Flood Recovery Final Report (June 2013).** This document provides a comprehensive record of the completed program that enabled the park to recover from a major natural disaster. Park visitation was significantly impacted in January 1997 by a flood of historic proportions. The flood severely damaged a range of facilities, from miles of roads, bridges and trails, and utility systems to several hundred units of guest lodging, campsites, and employee housing. Initial response to the Yosemite flood was managed under an Incident Command System. A team of engineers, architects, landscape architects, resource specialists, and technical experts completed detailed damage assessments and cost estimates. Based on those findings, the Emergency Supplemental Appropriations Act was passed by the House and Senate and signed by the president on June 12, 1997, to provide Yosemite National Park with \$178 million to cover flood recovery projects. This amount was later supplemented with an additional \$79 million from other funding sources. Today, because of this funding, the park continues to provide quality services to its visitors from across the globe.

**Restoration of Mariposa Grove of Giant Sequoias (December 2013).** The Mariposa Grove restoration project aimed to restore dynamic ecological processes and increase the resiliency of this treasured grove to withstand emerging and future stressors such as climate change and altered fire regimes. The National Park Service developed the *Mariposa Grove Restoration Project Final Environmental Impact Statement* in response to conditions in the Mariposa Grove area (including the South Entrance to Yosemite National Park) that adversely affect the ecological health of the grove and diminish the quality of the visitor experience.

**Merced Wild and Scenic River Comprehensive Management Plan (March 2014).**

The *Merced Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement*, released in February 2014, addresses the renowned Merced Wild and Scenic River's 81 miles within Yosemite National Park and the El Portal Administrative Site and functions as the guiding document to protect and enhance river values and manage use in the river corridor for the next 20 years. The final *Merced River Plan/Environmental Impact Statement* protects the Merced River's free-flowing condition, water quality, and the unique values that has made the celebrated river worthy of special protection under the Wild and Scenic Rivers Act. The final plan represents a rich collaboration among the public, research scientists, park partners, traditionally associated American Indians, and park staff to explore visions for the future of Yosemite Valley and the Merced Wild and Scenic River. The final plan brings forward the best in science, stewardship, and public engagement to ensure the continual protection and enhancement of the rare, unique, and exemplary qualities of the Merced River.

**Tuolumne Wild and Scenic River Comprehensive Management Plan (June 2014).** The Tuolumne Wild and Scenic River, designated in 1984, includes 83 miles of the river on the western side of the Sierra Nevada in California. The National Park Service manages 54 miles of the Tuolumne Wild and Scenic River in Yosemite National Park, beginning at its headwaters on the Dana and Lyell forks at the crest of the Sierra Nevada. The forks then converge, and the river meanders lazily westward through Tuolumne Meadows before cascading down the Grand Canyon of the Tuolumne and then entering the Hetch Hetchy Reservoir (which is not part of the national wild and scenic rivers system). Below O'Shaughnessy Dam, the river continues through Poopenaut Valley to the park boundary. The US Forest Service manages the 29 miles of the Wild and Scenic Tuolumne River downstream of Yosemite National Park before it reaches Don Pedro Reservoir and flows through the Central Valley of California, ultimately converging with the San Joaquin River. The Wild and Scenic River Act requires comprehensive planning for a designated river to provide for the protection of free-flowing condition, water quality, and the outstandingly remarkable values that make the river eligible for inclusion. In addition, a comprehensive management plan (and its recommendations on land use and development) must fulfill the specific direction of the 1984 legislation designating the Tuolumne River as a component of the national wild and scenic rivers system. The *Tuolumne Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement* is the National Park Service's response to these requirements.

***Tuolumne River Plan Implementation: Tuolumne Meadows Parking Relocation Project.***

The project relocated existing parking areas on Tioga Road adjacent to Tuolumne Meadows into expanded parking lots and one new lot in upland forested areas. Parking was formalized in

some areas of Tuolumne Meadows and eliminated the majority of informal parking along Tuolumne Meadows by installing barriers and restoring roadside areas to natural conditions.

**Ansel Adams Gallery Rehabilitation Plan (July 2014).** Best’s Studio was one of several artists’ studios operating in Yosemite Valley at the turn of the 20th century. Harry Best opened his studio in Yosemite Valley in 1902. In 1925, Best relocated the business from Old Yosemite Village (near the Chapel) to its present location (between the visitor center and the Yosemite Post Office). Ansel Adams and his family lived in the gallery through the 1970s. After more than 90 years in service, the buildings needed rehabilitation. This plan outlined the specifics of that rehabilitation.

**Yosemite Foundation Document (December 2016).** This foundational document provides basic guidance for planning and management decisions—a foundation for planning and management. The core components of the foundation document include a brief description of the park, as well as the park’s purpose, significance, fundamental resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed.

**Merced River Plan Implementation: Construct New West of Yosemite Lodge and Camp 4 Parking Areas (June 2016).** This project was selected for implementation in the 2014 Record of Decision for the *Merced River Plan/Environmental Impact Statement* (PEPC 18982). The project constructed a gravel parking area west of the Yosemite Lodge (300 spaces) and expanded and reconfigured the parking area at Camp 4 (41 new spaces). The National Park Service also constructed a shuttle bus stop, bus shelter, and comfort stations in proximity to both parking lots. These projects are part of a comprehensive strategy to reduce traffic congestion and crowding in Yosemite Valley, as described in the *Merced River Plan*.

**Bridalveil Fall Rehabilitation Project (June 2018).** Bridalveil Fall is the first grand waterfall that most visitors encounter upon entering the iconic Yosemite Valley. Bridalveil Fall typically flows throughout the year, impelling year-round visitation and high volumes of use during spring flows. Currently, visitors to the Bridalveil Fall area encounter low-functioning vault toilets, congestion associated with the parking lot, crowded trails and viewing platform, a lack of an accessible path of travel to the primary viewing platform, and unclear wayfinding. The purpose of this plan is to improve conditions at the base of Bridalveil Fall and address these issues. Implementation occurred from 2019 to 2022.

**Merced River Plan Implementation: Repurpose Village Sports Shop to Visitor Welcome Center (October 2018).** This project addressed visitor day-use parking capacity, transit options, and circulation components of the *Merced River Plan* as approved in the June 2014 Record of Decision. This action converted the existing Village Sport Shop (a 2,800-square-foot vacant retail sales space) to a new visitor contact station (remodeled, operated, and maintained by the National Park Service), constructed a new 18-fixture comfort station, and constructed an outdoor plaza with orientation and wayfinding information.

**Merced River Plan Implementation: Yosemite Village Day Use Parking Phases I and II.** The Yosemite Village Day-Use Parking project was completed in two phases. The first phase constructed the Yosemite Village day-use parking at Camp 6. Phase II added additional parking between the day-use parking at Camp 6 and the Village Store parking area. In total, these projects added approximately 700 visitor parking spaces in the Yosemite Village area.

**Merced River Plan Implementation: Construct New West of Yosemite Lodge and Camp 4 Parking Areas.** This project constructed approximately 300 spaces west of Yosemite Lodge and expanded and reconfigured the parking area at Camp 4 (41 new spaces). The project also included the construction of a shuttle bus stop, bus shelter, and comfort stations in proximity to both parking lots. These projects are part of a comprehensive strategy to reduce traffic congestion and crowding in Yosemite Valley, as described in the *Merced River Plan*.

**Tuolumne River Plan Implementation: Restore Wetlands and Reroute Informal Trail in West Tuolumne Meadows Pothole Dome ‘Thumb’ (November 2019).** This restoration project was selected for implementation in the 2014 Record of Decision for the *Tuolumne River Plan Environmental Impact Statement* (PEPC 14043). The “thumb” of wet meadow in western Tuolumne Meadow contains an erosion gully that has lowered the water table, drained former wetlands, and converted to dry-site species, bare soil, and lodgepole pine. The objectives of this project were to (1) restore wetland topography, hydrology, and vegetation to former wetlands (current uplands) on 5 acres of west Tuolumne Meadows; and (2) retain the primitive character of informal trails, provide minor reconstruction and rerouting around the project area to disperse drainage, reduce wetland impacts, and improve the visitor experience; and (3) protect archeological sites by moving trails out of site boundaries as much as possible.

**New Gate Installation at Two Yosemite Entrances (April 2020).** Permanent gates were installed at the park’s south boundary on Highway 41 and at the north boundary on Highway 120. Hard closure of the park was ordered by park management in several situations. The gates did not exist at these locations and were ineffective as closure points.

**Parkwide Programmatic Agreement (August 2020).** The National Park Service developed a parkwide programmatic agreement to guide consultation under section 106 of the National Historic Preservation Act. This agreement replaces the existing parkwide programmatic agreement that expired in May 2017 as amended. Park managers will follow the terms of the new parkwide agreement rather than those of the 2008 NPS nationwide programmatic agreement to streamline section 106 compliance for these routine activities specific to Yosemite. The new parkwide agreement will specify Yosemite’s consultation requirements and procedures with the California State Historic Preservation Office, the Advisory Council for Historic Preservation, Yosemite’s traditionally associated American Indian Tribes and groups, the public, and other interested parties.

**Biomass Removal and Thinning – Yosemite Valley, Wawona, and Yosemite West (August 2021).** This project reduces post-drought and post-fire fuels to protect Yosemite Valley, the communities of Yosemite West and Wawona, significant Pacific fisher and great grey owl habitat, and prehistoric and historic archeological sites and improves safety for the public and first responders. Immediate actions are needed to protect these areas from high-severity fire. The goals are reached by thinning conifers <20 inches in diameter, standing dead trees, and

removing dead and down trees that died after the 2012–2016 drought. Biomass are either removed and hauled off-site or piled and burned.

**Ackerson Meadow Restoration Plan (September 2021).** The Ackerson Meadow complex is the largest mid-elevation meadow in Yosemite National Park. It encompasses important habitat for the state-endangered great grey owl and little willow flycatcher, as well as a suite of additional at-risk wildlife species. Currently, a large erosion gully network, up to 14 feet deep and 100 feet wide, is actively draining 90 acres of former wetlands in the meadow complex and threatening an additional 100 acres of wet meadow habitat. The gully network is a result of over a century of landscape manipulation, including domestic water diversion, farming, ranching, and timber harvest. Yosemite National Park and the Stanislaus National Forest jointly propose to implement actions to reduce erosion and restore wetland functionality at Ackerson and South Ackerson Meadows. The project team analyzed the public comments from the civic engagement period (which occurred in summer 2020), refined alternatives, and performed an impact analysis for the Ackerson Meadow Restoration Environmental Assessment. Yosemite National Park and the Stanislaus National Forest staff released the interagency *Ackerson Meadow Restoration Project Environmental Assessment* on June 1, 2021, for public review and comment through July 8, 2021. A finding of no significant impact and the determination of non-impairment were signed on September 21, 2021. Restoration implementation for this project started in 2023, with final revegetation planned for 2025.

**Relieve Congestion through Circulation Changes on Valley Loop Roads (June 2022).** Roadway modifications were piloted to validate their effectiveness at mitigating congestion during the summer of 2021, which was repeated in 2022. The summer pilot resulted in fewer delays and generally congestion-free roadway network in Yosemite Valley. Throughout the summer, there were several days when all parking areas were full, but the roadway network remained clear of congestion, indicating the effectiveness of the roadway improvements. This project implemented the piloted solutions, including modifying roadway intersections, travel lanes, and signs and constructing roadway improvements and traffic control devices and signs.

## **CURRENT AND FUTURE PLANNING EFFORTS**

**Curry Former Waste Disposal Area CERCLA Response (June 2019).** The Curry Former Waste Disposal Area (the site) is located in Yosemite Valley and southeast of the unincorporated Yosemite Village west of Happy Isle Loop Road in the south-central portion of Yosemite National Park in Mariposa County, California. The site covers approximately 1.8 acres of land and consists of a main waste disposal area of approximately 78,300 square feet, with average waste material thickness of 12.2 feet, and two other smaller areas, totaling approximately 1,900 square feet, with a thin layer (less than 5 feet thick) of waste under cover soils at the periphery of the site. A total of approximately 35,520 cubic yards of waste materials are estimated to be present at the site within the extent of the site. The National Park Service has moved forward with developing a record of decision document that describes the chosen alternative. This option involves removing existing cover material; clearing and grubbing the perimeter of the parking lot; capping the area with subgrade material, geogrid material, reservoir layers, and a final parking lot surface; and constructing drainage controls.

**Replace the Big Oak Flat Welcome Center Complex (August 2019).** The purpose of the action is to replace the existing welcome center complex at the Big Oak Flat entrance to improve the visitor experience and operational efficiency. Action is needed because the existing welcome center does not meet visitor demands, and NPS staff struggle to provide quality public service due to inadequately sized and ineffectively organized facilities.

**Big Oak Flat Road Rehabilitation (May 2020).** Yosemite National Park staff plan to repair aging and deteriorated pavement, pullouts, and parking areas along the Big Oak Flat Road between the El Portal Road junction and the Crane Flat helibase.

**Rehabilitate Tuolumne Meadows Water Distribution System (December 2020).** This project was evaluated and selected for implementation in the 2014 Record of Decision for the *Tuolumne River Plan Environmental Impact Statement* (PEPC 14043). This project will consist of constructing a new water storage tank and a new distribution water line from the storage tank to the existing visitor center and providing new service connections.

**Improve Shuttle and Transit Bus Stops in Yosemite Village and Curry Village (December 2020).** The purpose of this project is to improve the existing Yosemite Village Loop Drive and Curry Village shuttle and transit bus system. Improvements will support daily operation, pedestrian access, and safety. The Yosemite Valley shuttle bus system provides service to lodging facilities and attraction sites throughout Yosemite Valley.

**Rehabilitate Tuolumne Meadows Water Distribution System (December 2020).** This project was evaluated and selected for implementation in the 2014 Record of Decision for the *Tuolumne River Plan Environmental Impact Statement* (PEPC 14043). This project will replace the 4-inch, 91-year-old water distribution system, meet current National Fire Protection Association standards for fire flow during a range of seasonal flow conditions, and will include the construction of a new water storage tank and a new distribution water line and service connections to NPS facilities.

**Rehabilitate the El Portal Wastewater Treatment Plant (March 2021).** The existing El Portal Wastewater Treatment Plant (the site) is located within the Yosemite National Park administrative area in El Portal, California. The facility is the only wastewater service for Yosemite Valley and the administrative area, which contain essential facilities to serve visitors, employees, and businesses. The El Portal community has a population of about 700 permanent employee residents, which increases in the summer with seasonal employees. Yosemite Valley is the largest developed district in the park and receives approximately four million visitors per year. The proposed rehabilitation of the site will involve constructing new structures and rehabilitating existing structures within the fence line of the current facility. Personnel and vehicle access around the site will remain approximately the same as it exists currently. The proposed treatment strategy consists of a new conventional activated sludge secondary treatment process, new aerobic digestion, new screw press dewatering, rehabilitated existing tertiary treatment process, and new ultraviolet disinfection.

***Tuolumne River Plan Implementation: Rehabilitate Obsolete Tuolumne Meadows Wastewater Treatment Plant (April 2021).*** This project was evaluated and selected for implementation in the 2014 Record of Decision for the *Tuolumne River Plan Environmental Impact Statement* (PEPC 14043). The proposed project will upgrade the wastewater treatment



plant and seek technology to allow the removal of the wastewater containment ponds and spraying of fields from the north side of Tioga Road and replacing them with facilities on the south side of the road, to be designed in conjunction with the new wastewater treatment plant.

**Mist Trail Corridor Renaissance (December 2021).** This project will improve visitor experience and safety along one of the most heavily used trails in the national park system, including a signage overhaul, trail improvements, and the rebuilding the Happy Isles footbridge.

**Improve Wawona Transit Bus Facility, Add Electric Vehicle Supply Equipment (September 2022).** An existing bus stop on Wawona Road will be improved to accommodate overnight parking and install electric vehicle supply equipment for four government-owned transit buses. The project consolidates bus parking and equipment overlapping the footprint of the existing parking area, which are located south of the South Fork of the Merced River in the primary visitor area for the Wawona district. The scope of work will include demolishing and removing existing asphalt and concrete bus pullout surfaces, ground disturbance for an extension of the existing drive aisle and bus parking area, restoring previously disturbed portions of the site, constructing reinforced concrete for new flatwork, installing 480-volt charging equipment with a pad-mounted transformer and meter cabinet, and installing new signs.

**Horsetail Fall Event Mitigations (November 2022).** Yosemite managers instituted a reservation system for the Horsetail Fall event, which occurs every February and impacts a little over two weeks of visitation to Yosemite. The reservation system will help the National Park Service protect visitors, relieve congestion, protect the resource, and provide for a better visitor experience.

**Rehabilitate Hodgdon Meadows Water Distribution System (November 2022).** The Hodgdon Meadows district was first developed in the 1960s and included the installation of a water distribution system. Since that time, peak summer usage has increased; the water system now provides service for 70 permanent residents, 440 campers (130 campsites with 2 restrooms), and up to 5,000 visitors per day at the Big Oak Flat entrance station facilities. With that increase in usage, there has been very few improvements to the water system other than spot repairs, a slip-lined section of pipe, and one well improvement project. This project will replace the original aging asbestos cement water line with high-density polyethylene pipe, remove and replace service laterals, install water meters to all facilities, improve storage capacity, and replace antiquated fire hydrants. A booster pump station or a secondary storage tank will be installed to provide adequate pressure to the Big Oak Flat entrance area. A secondary water source will be identified for a new well/water treatment house to be installed.

**Rehabilitate and Upgrade Tioga Pass Entrance Station Kiosk (January 2023).** This project will rehabilitate the entrance station kiosk and replace interior improvements, replace/improve aging building system components, and improve site safety. Interior improvements include replacing the shelving/storage, heater unit, kiosk door/locks, heater, flooring, ergonomic functions, and lighting. The building system components will replace the aging electrical system and incorporate a panic alarm and intrusion detection alarm to the existing security system. Site safety improvements will include increasing the vehicle barrier construction around the kiosk,

improving pedestrian circulation and safety, and improving external lighting to illuminate the entrance station and station parking while maintaining consideration for the park's night sky.

**Remove Abandoned Wastewater Treatment Plant at Bridalveil (February 2023).** The National Park Service abandoned two sewage treatment plants adjacent to the Merced Wild and Scenic River beginning in the early 1930s and one other in the 1950s. The National Park Service intends to remove the majority of the three abandoned sewage treatment plant remains, making the sites safe for visitors and staff, and restoring the sites to a natural condition to the extent possible while not causing additional harm in the process. The level of abandonment and removal varies at the three sites. Each of the three sites has unique challenges, ranging from equipment access at the Bridalveil site to extreme cultural sensitivity at the Old El Portal site, requiring careful planning and awareness. Proposed actions include removing or demolishing buried structures and backfilling with native soil and revegetating with native plants.

**Security Camera Replacement and/or Purchase and Installation for Recreation Fee Operations (July 2023).** This project will fund the replacement or purchase and installation of new network-based security camera equipment and video management system in all fee collection locations. Equipment includes cameras, mounts, servers, communications cabling infrastructure, and accessories. Video management system includes software and licensing costs. Services include installation.

**Hetch Hetchy Connectivity (November 2023).** Improved entrance station connectivity has been a goal of park managers for several years. While the National Park Service has improved connectivity at Arch Rock, the South Entrance, and Tioga, the Hetch Hetchy entrance station presents unique challenges. The Hetch Hetchy entrance station currently uses Hughes Net satellite as an Internet service provider. The current service has limited capabilities and is being phased out bureauwide, leaving few options. The Entrance Connectivity Working Group has evaluated several options and has concluded the best viable option at this time is a Starlink satellite dish located approximately 500 feet north of the entrance station kiosk and a wireless bridge for connectivity to the kiosk. Due to the lack of power at that location, the Starlink and the bridge will use solar power like Arch Rock and the South Entrance. This solution should provide enough bandwidth to facilitate the computer workstations and registers, as well as improved remote access to the security cameras.

***Merced River Plan* Implementation: Redesign and Rehabilitate the Curry Village Orchard and Parking Area (February 2024).** This project addresses the longstanding need to improve the conditions of the Curry Orchard parking lot. Addressing both the historic landscape design and contemporary resource constraints on the site, this project restores the design of the parking lot to a more resilient, organized, and welcoming experience to Curry Village. By incorporating elements like granite barriers and interpretive signage, this augmented gateway to an important cultural landscape would improve the health of the existing orchard trees while also creating a more meaningful entry sequence for visitors and staff.

**Summer 2024 Pilot.** Yosemite staff piloted day-use reservation systems in the summers of 2020 and 2021 as a pandemic mitigation and then a peak-hours reservation system in 2022 to manage for access limitations created by multiple Great American Outdoors Act projects underway. Reservations were not required to enter the park during the summer of 2023. For the summer of

2024, park staff are piloting a reservation system to test strategies that address vehicular crowding, road congestion, parking lot congestion, and quality of visitor experience and protect meadows, wildlife, and other natural resources and culturally significant assets.

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# **APPENDIX I: PUBLIC INVOLVEMENT AND CONSULTATION**

## **INTRODUCTION**

The National Park Service conducted civic engagement during the planning process to provide an opportunity for the public to learn about and contribute to the planning process throughout the project. Consultation and coordination with federal and state agencies, Tribal nations, and other interested parties were also conducted to identify issues and/or concerns related to natural and cultural resources. This section provides a summary of the public involvement and agency consultation and coordination that occurred during planning.

## **PUBLIC INVOLVEMENT**

To ensure that a variety of stakeholders and the public could participate in the planning process, the National Park Service provided multiple phases of civic engagement. Two rounds of civic engagement were completed in winter 2023 and summer 2023 to further explore issues, develop goals, and gather public feedback on potential management strategies. More than 200 attendees engaged in public and interested groups meetings, and there were more than 56,000 views of online materials.

Civic engagement resulted in about 6,000 correspondences from 47 US states and 9 countries. Comments primarily came from unaffiliated individuals; however, correspondence was also received from various types of organizations, including businesses, conservation organizations, nongovernmental agencies, civic groups, NPS employees, non-NPS employees within the park, recreational groups, county governments, the federal government, and town or city governments. Public input during civic engagement was used to identify potential management strategies and inform the range of alternatives carried forward for full analysis in the plan and environmental assessment. Interested groups also provided important insights on identifying issues, developing goals, and providing feedback on potential management strategies. Additional information about civic engagement periods, including comment summaries from each engagement period, are available under “Document List” at <https://parkplanning.nps.gov/projectHome.cfm?parkID=347&projectID=113113>.

## **CONSULTATION WITH TRIBES AND AGENCIES**

Park invited Tribal consultation to help inform the analysis of the proposed action and the alternatives. Agency consultation and coordination began early in the planning process and is ongoing to ensure that all relevant agencies are informed of any NPS planning actions.

### **Tribal Consultation**

The seven traditionally associated Tribes were invited to consult on this planning process. This invitation was sent via formal consultation correspondence and briefings. Park staff also provided informal opportunities to collaborate during NPS monthly meeting with Tribes in February 2023, July 2023, and June 2024.

Traditionally associated Tribes who were sent formal correspondence regarding the project include the following:

American Indian Council of Mariposa County, Inc. (Southern Sierra Miwuk Nation)

Bishop Paiute Tribe

Bridgeport Indian Colony

Mono Lake Kootzaduka'a

North Fork Rancheria of Mono Indians of California

Picayune Rancheria of the Chukchansi Indians

Tuolumne Band of Me-Wuk Indians

### **California Office of Historic Preservation**

Park staff have also initiated consultation under section 106 of the National Historic Preservation Act of 1966 (54 USC 306108), as amended, and its implementing regulations in 36 CFR Part 800.8 (Coordination with the National Environmental Policy Act) with the California Historic Preservation Officer.

During civic engagement, the public did not express concerns related to cultural resources. Park staff initiated consultation with Tribes as described above and have conducted informal conversations with the California State Historic Preservation Office. Based on these efforts and conversations, NPS staff are seeking concurrence on a finding of no historic properties affected in accordance with section 106.

### **US Fish and Wildlife Service**

In April 2024, the National Park Service requested, via the USFWS Information for Planning and Consultation website, the most recent list of species and their designated critical habitat protected under the federal Endangered Species Act that may be impacted by projects in Yosemite National Park. This action served as a record that the National Park Service had initiated informal consultation with the US Fish and Wildlife Service pursuant to the requirements of the Endangered Species Act and NPS management policies. Yosemite National Park staff met with staff from the USFWS Sacramento field office on July 3, 2024, to confirm the species list being used for this project and to confirm the approach to include analysis for species. Consultation with the US Fish and Wildlife Service is ongoing, concurrent with this environmental assessment.

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As the nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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