

## **Park Operations and Facilities**

### ***Affected Environment***

#### **Regulatory Framework**

##### ***Concessions Management Improvement Act of 1998***

The Concessions Management Improvement Act of 1998 instructs the Secretary of the U.S. Department of the Interior to undertake certain actions to ensure the continued operation of the National Park Service (NPS) in a manner that advances the interests of park staff and the visiting public, while ensuring the protection of park resources. With relevance to nearly all aspects of park management, the act includes provisions for employee training, park resource inventory and research, collection of fees and budget development, and expansion of the NPS. In addition, the act provides detailed instruction regarding the award, management, transfer, and duration of concessions contracts.

##### ***Resource Conservation and Recovery Act of 1976***

The Resource Conservation and Recovery Act, as amended, establishes a regulatory structure for the management of solid and hazardous waste from the point of generation to disposal. In particular, applicable provisions include those that address underground storage tanks and sites contaminated with elements identified under Federal and State Resource Conservation and Recovery Act regulations.

##### ***The Architectural Barriers Act of 1968***

The Architectural Barriers Act created a requirement that any building or facility designed, built, altered, or leased with federal funds be accessible to, and usable by, persons with physical disabilities. Official standards for making buildings accessible have been developed and approved over the years, the most current of which is the Architectural Barriers Act Accessibility Standard (ABAAS) (2006). Federal agencies are required to adhere to these standards, and the U.S. Access Board enforces compliance with the law.

##### ***Section 504 of the Rehabilitation Act of 1973, as amended 1978***

Section 504 prohibits discrimination against people with disabilities in all programs, services, and activities conducted by federal agencies or on their behalf.

##### ***Americans with Disabilities Act of 1990***

The Americans with Disabilities Act also sets forth a series of provisions designed to address discrimination against persons with disabilities. The act establishes prohibitions on employer discrimination against those who are or become disabled. Similarly, the act prohibits state and local government agencies and places of public accommodation from discriminating against such persons in their facilities, programs, and activities. It ensures that disabled persons are not denied access to public

accommodations provided by private enterprise, such as hotels, restaurants, and transit systems, and sets forth certain structural accessibility requirements. The act also makes available telecommunications devices and services for the hearing and speech impaired, among numerous other provisions.

### ***National Park Service Management Policies 2006***

The NPS *Management Policies 2006* sets forth the NPS's management principles and establishes a broad policy framework for park management across a wide range of issues, nearly all of which have some connection to park operations and facilities. In addition to providing direction on a diverse range of resource management topics, NPS *Management Policies* also addresses such topics as education and interpretation, law enforcement, park facilities, transportation services, as well as commercial visitor facilities, among many others. This document is updated periodically to reflect changes in NPS policy, new laws and technologies, and improvements in park understanding. These policies supersede those identified in the NPS *Management Policies 2001*.

### **Park Management Divisions and Operations**

Many programs administered by Yosemite National Park are located within or have a direct connection to the Merced River corridor. Park operations are managed under nine basic divisions: Superintendent's Office, Planning, Resources Management and Science, Facility Management, Visitor Protection, Administrative Management, Business and Revenue Management, Project Management, and Interpretation and Education. All of these divisions contribute to making the varied resources of Yosemite available for the public's enjoyment, education, and recreation now and in the future (NPS 2000d). In 2010, these divisions collectively consisted of 1,123 summer employees and 743 winter employees. The park management and operational efforts are complemented by the work of the current primary park concessioner, Delaware North Company (DNC) Parks and Resorts at Yosemite, and several park partners. The following sections outline the roles and responsibilities of the various units that comprise park management and operations.

### ***Management Divisions***

Administrative divisions responsible for park management are described below.

**Superintendent's Office.** The Superintendent's Office is the administrative center of park operations. In addition to overseeing general park business and the work of the various park management divisions, the superintendent's office is also concerned with issues and activities of regional and national public importance that extend beyond the park's boundaries, such as the Hetch Hetchy water and power system, upon which the City of San Francisco depends. Included within the Superintendent's Office are the Superintendent, Deputy Superintendent and Chief of Staff, the Hetch Hetchy Program Manager, Land Resources Program Manager, Public and Legislative Affairs Office, Public Outreach and Engagement Office, and the Safety Office. Facilities necessary to support the Superintendent's operations include office space, meeting space, storage space, vehicle parking, and employee housing.

**Planning.** The Division of Planning interacts with all park management divisions, American Indian tribes, gateway communities, other land management agencies, and the public in comprehensive planning efforts for Yosemite National Park. From wild-and-scenic-rivers planning to transportation and site planning, the division facilitates communication and defines actions that will protect Yosemite's cultural and natural resources while providing quality visitor experiences. Established in 2005, the mission of the division is to ensure that projects are framed and analyzed based on adherence to the laws and statutes guiding the park, as well as those guiding the planning process for environmental and resource protection. The division also seeks to initiate planning efforts that center on transparency and intensive public engagement, where members of the public feel their input is welcomed and valued. Facilities necessary to support the Planning Division operations include office space, meeting space, storage space, and vehicle parking.

**Resources Management and Science.** Resources Management and Science staff is charged with protecting the natural, cultural, and physical resources of the park. They are responsible for resource data collection and monitoring, prescribing natural and cultural resource impacts, mitigation for construction projects, ecological restoration of sensitive areas, and vegetation and wildlife management. The staff in this division has created a monitoring program that tracks the quality of both park resources and visitor experiences. Simply put, the monitoring component serves as a report card to measure how well the park is protecting and enhancing the resource values outlined in the division's User Capacity Management Program. Monitoring results provide park managers with the information they need to make sound, science-based decisions about the impacts associated with human use in the park (NPS 2007f). Facilities necessary to support Resources Management and Science activities and programs include office and storage space, laboratory facilities, vehicle parking, and employee housing.

**Facilities Management.** Facilities Management staff conducts preventive and corrective maintenance on park infrastructure and is responsible for forestry maintenance in conjunction with fire management. The Facilities Management Division is comprised of four branches.

- The Utilities Branch operates and maintains all water and wastewater utility systems – including backcountry utilities (i.e., composting toilets and water systems), operates two wastewater treatment plants within the Merced River corridor, maintains potable water production and the high-voltage electric system parkwide, and performs energy audits on park energy consumption. The Utilities Branch also manages the emergency back-up generators and fuel tanks. Operations are based in El Portal, Yosemite Valley, Wawona, Tuolumne Meadows, and the backcountry.
- The Roads and Trails Branch is responsible for maintaining all park roads, as well as frontcountry and backcountry trails; performing hazard tree removal; operating the Yosemite Valley and Tuolumne Meadows stables; and operating the Sign Shop and the Machine Shop. The Roads and Trails Branch also manages solid waste and explosives. Operations are based in El Portal, Mather, Yosemite Valley, Wawona, and Tuolumne Meadows.
- The Design and Engineering Branch provides engineers, landscape architects, and surveyors and manages project-funding requests.

- The Buildings and Grounds Branch maintains and corrects deficiencies in administrative facilities, employee housing units, and campground facilities. This branch also performs parkwide custodial operations and historic structure preservation. Operations are based in El Portal, Mather, Yosemite Valley, Wawona, and Tuolumne Meadows. In 2000, the park partnered with local agencies to build a composting facility in Mariposa County (NPS 2008g).

Facilities necessary to support Facility Management staff include equipment materials and tools storage, workshop and storage space, warehouse materials storage, office space, archival map storage space, vehicle parking, and employee housing.

**Visitor Protection.** Visitor Protection staff performs various visitor management and resource protection duties, including frontcountry and backcountry wilderness law-enforcement operations, provision of emergency medical services, horse patrol, search and rescue, structural and wildland fire management, transportation and circulation management, and parkwide dispatching services. Protection rangers assist with monitoring natural and cultural resources, perform restoration activities, and provide assistance to park visitors. Facilities necessary to support Visitor Protection activities include the search-and-rescue cache and buildings in Yosemite Valley; wilderness centers and permit kiosks; ranger stations; parking for emergency vehicles and fire engines; incarceration facilities; helicopter landing pads; office, meeting, and storage space; government stock boarding; and employee housing for required occupants. The Little Yosemite Valley Ranger Station and Merced Lake Ranger Station are near the Merced River corridor (Segment 1), and protection rangers regularly travel through these areas to carry out their responsibilities.

**Interpretation and Education.** The purpose of NPS interpretive and education programs is to provide memorable educational and recreational experiences that will (1) help the public understand the meaning and relevance of park resources, and (2) foster development of a sense of stewardship. The programs do this by forging a connection between park resources, visitors, the community, and the NPS (NPS 2006a). Interpretation and education staff is responsible for providing natural, cultural, and physical resource information and interpretive programs throughout the year, consisting of evening programs, ranger-led talks, and open-air tram tours. In addition, staff is responsible for managing the Yosemite Valley and Tuolumne Meadows visitor centers, Pioneer Yosemite History Center, the Indian Village of Ahwahnee, the Yosemite Museum, the Wawona Information Station, and the Nature Center at Happy Isles. The Division of Interpretation and Education includes Curatorial Services, Publications, and the education branch staff. NPS staff recently completed a Comprehensive Interpretive Plan, which outlines a comprehensive approach to interpreting park natural and cultural resources. Facilities necessary to support the Interpretation and Education Division include visitor centers, museums, auditoriums, amphitheaters, office and storage space, vehicle parking, and employee housing.

**Business and Revenue Management.** Business and Revenue Management staff is responsible for overseeing and authorizing special park uses, fee and revenue management, concessions management, the operation and staffing of all park campgrounds and entrance stations, and the Park VIP Program. Additionally, the division manages all contracted concessioner operations, such as lodging, retail, and eating establishments; High Sierra Camp operations; equestrian, rafting, and bicycle rental operations; Badger Pass; the Wawona Golf Course; galleries; and the Yosemite Medical Clinic. The division manages the Incidental Business Permit program, which consists of the regulation of tour buses,

backcountry stock use, commercial tour and recreational guiding services, television and film productions, and weddings. Facilities necessary to support Business and Revenue Management operations include administrative office and storage space, entrance stations, and vehicle parking.

**Administrative Management.** Administrative Management staff is responsible for managing the park's finances and budget, information technology systems, human resources, employee housing, and procurement and contracting. Facilities necessary to support Administrative Management include office and storage space, warehouse facilities, computer operations systems, and vehicle parking.

**Project Management.** Project Management staff is responsible for major land-use planning efforts and facility improvement projects for the park. The division is responsible for estimating design and construction costs, obtaining and managing park project funding, and implementing projects. The Office of Environmental Planning and Compliance branch of Project Management Division completes appropriate NEPA and National Historic Preservation Act compliance for all park projects. Planning facilities necessary to support Project Management include office and storage space and vehicle parking.

### ***Park Partner Operational Areas***

The following paragraphs summarize the various types of operational activities performed by park partners, including the primary park concessioner, throughout the park.

**Primary Park Concessioner.** The current primary park concessioner, DNC Parks and Resorts at Yosemite, provides a variety of support services that complement the work of NPS staff. DNC operates and manages numerous visitor-servicing facilities and operations within the park. These generally include overnight accommodations, food and beverage services, merchandising services, automotive services, visitor activities and other services, and the visitor transportation system. The primary park concessioner operates approximately 386 buildings parkwide (NPS 2012a). As described more fully in the "Visitor Experience" section of this chapter, all of the park lodging is also managed by the primary park concessioner, including The Ahwahnee, Yosemite Lodge, Curry Village, Housekeeping Camp, Wawona Hotel, and the Merced Lake High Sierra Camp. As of 2010, the concessioner-operated Yosemite Valley visitor lodging could accommodate 4,800 people, which is roughly 62% of the valley's total overnight visitor capacity (NPS 2012a). The primary park concessioner is also responsible for the set-up and tear-down of all seasonal concessioner-operated visitor services and seasonal concessioner employee housing in Yosemite Valley and Merced Lake High Sierra Camp. In 2010, the current primary park concessioner employed 1,800 summer and 1,100 winter employees. Concessioner employee housing is discussed under "Park Infrastructure and Facilities," below.

**Concessioner Stock Operations.** Both the NPS and the primary park concessioner use stock to support their operations in the Merced River corridor. As discussed in the "Visitor Experience" section of this chapter, the primary park concessioner uses stock to support the operation of the High Sierra camps and backcountry camping trips. NPS uses stock to support backcountry utilities operations and trail crew camps, to assist with search-and-rescue operations, and for backcountry patrols.

**Other Park Partners.** There are several other park partners operating within the Merced River corridor. Main park partners include the Yosemite Conservancy, Ansel Adams Gallery, and NatureBridge. The activities of each park partner, as they pertain to the corridor, are briefly summarized below.

The Yosemite Conservancy— the nonprofit organization formed by the 2010 merger of the Yosemite Association and the Yosemite Fund — is a philanthropic organization dedicated to the protection and preservation of Yosemite National Park, and the enhancement of visitor experience. The conservancy works to create opportunities for individuals to experience and connect with the park by funding trail repairs, habitat restoration, outdoor programs, volunteer programs, and other programs that may not otherwise happen. The Yosemite Conservancy’s park office is located in the El Portal Administrative Site (NPS 2012e).

The Ansel Adams Gallery is an authorized park concessioner specializing in the work of Ansel Adams. This registered California historic business has been owned and operated by the family of Ansel Adams since 1902. The gallery is located in the heart of Yosemite Valley and offers original artwork, prints, posters, books, calendars, postcards, and DVDs of the artist’s work (NPS 2012e).

NatureBridge is a nonprofit corporation that provides students with hands-on educational adventures in natural settings, including within several national parks. Within Yosemite National Park, NatureBridge offers school and group field-science programs, outdoor educator and wilderness first-responder courses, and field research courses for high school students, among others. The NatureBridge Campus is located at Crane Flat, outside the Merced River corridor. However, the organization also utilizes facilities at Curry Village and Camp Wawona. Field courses are taught in various locations throughout the corridor (NatureBridge 2012).

### **Park Infrastructure and Facilities**

There are 747 National Park Service buildings parkwide, including office buildings, residences, and utility infrastructure located in Yosemite Valley, the El Portal Administrative Site, and along the South Fork Merced River in Wawona (NPS 2012a). Parkwide base operations continue to shift from Yosemite Valley to the El Portal area (NPS 2006b). The El Portal Administrative Site, located adjacent to the park, was established in 1958 and is comprised of both government housing and private employee residences located on federal land. Effective December 2009, a settlement agreement placed a moratorium on El Portal Administrative Site residential and facility construction and expansion. Until July 2013, the settlement agreement imposes constraints on certain types of maintenance and construction activity within the Merced River corridor. In addition, the agreement prohibits new structures that are not considered minor (i.e., small, temporary, not habitable, and not designed to support commercial uses). The agreement notes that existing and future development in the El Portal Administrative Site must protect and enhance the Merced River’s outstandingly remarkable values (NPS 2009).

The following sections summarize the types of park facilities and infrastructure that could be affected by the management actions under consideration in the alternatives analyzed in this EIS. The discussion is divided among administrative facilities, employee housing, and utilities and infrastructure. For

descriptions of trails, camping, lodging, and associated visitor-serving facilities within the Merced River corridor, see the “Visitor Experience” section of this chapter. For descriptions of roads, bridges, tunnels, and parking within the corridor, see the “Transportation” section of this chapter.

### *Administrative Facilities*

**Segments 1, 5, and 8.** There are no administrative facilities in the wilderness segments of the Merced River corridor.

**Segment 2.** Administrative facilities within the project area are mainly concentrated along the eastern portion of the Yosemite Valley. Within Segment 2, most are located in proximity to the Yosemite Village complex. These include the NPS Administration Building, the Village Post Office, Primary Concession General Office Building and Village Garage complex (garage and fire station), and Wilderness Center. Other administrative facilities in the valley include the Yosemite NPS Volunteer Office and Yosemite Lodge Post Office, both located within the Yosemite Lodge complex.

**Segments 3 and 4.** Administrative facilities within the Merced River gorge include the Arch Rock Entrance Station Kiosk and Administrative Office. Such facilities within the El Portal Administrative Site include the El Portal Maintenance and Administrative Complex.

**Segments 6 and 7.** The Wawona Maintenance Yard complex is the only administrative facility within the South Fork Merced River corridor.

### *Concessioner Employee Housing*

The Yosemite housing environment is complex and challenging. The park receives nearly four million visitors annually. Yosemite Valley receives more visitors than any other area of the park. As a result, the valley also hosts the largest number of visitor services. The primary park concessioner provides the bulk of visitor services and staffing necessary to accommodate these visitors. However, because the park is located in a remote portion of the Sierra Nevada Mountains, with limited access to only a few gateway communities, concessioner employee housing options outside of the park have historically been quite limited. Other factors limiting concessioner housing outside the park are the flexibility required to staff restaurants and lodges in the early morning and late in the evening, the ability to attract and retain qualified employees for seasonal work, and the desire of communities outside the park in maintaining a rural living environment. As a result, over the years, a considerable amount of concessioner housing has been developed within the Merced River corridor, specifically within the valley. The housing-related management actions described herein mainly concern concessioner employee housing. These management actions would not, however, substantially affect NPS employee housing supply or demand. As such, all subsequent references to employee housing, unless otherwise specified, concern those necessary to support concessioner operations.

**Segment 1.** There is no employee housing located within Segment 1. However, the Merced Lake High Sierra Camp has five beds reserved for administrative staff.

**Segment 2.** Over the years, a considerable amount of that demand for employee housing was met through development of employee housing within the Yosemite Valley. As shown in **table 9-153**, the vast

**TABLE 9-153: EXISTING CONCESSIONER HOUSING WITHIN YOSEMITE VALLEY**

Location	Capacity (beds)
Yosemite Village	431
The Ahwahnee	48
Curry Village	582
Yosemite Lodge	90
<b>Total</b>	1,151

majority of park and concessioner employee housing within the Merced River corridor is found in Yosemite Valley. As the table indicates, housing is concentrated around Yosemite Village, The Ahwahnee, Curry Village, and the Yosemite Lodge. Together these facilities can accommodate approximately 1,151 employees.

Several hundred employee housing units were either destroyed or closed as a result of the 1997 flood and 2008 rockfall, exacerbating an already high demand for employee housing within the valley. Some of that demand has been offset through the development of temporary housing facilities, such as those at Yosemite Lodge, Boys Town, Highland Court, and the Lost Arrow Parking Lot. Nonetheless, the demand for concessioner employee housing within the valley continues to exceed supply by more than 93 units.

**Segments 3 and 4.** Concessioner employee housing within Segments 3 and 4 is largely concentrated within Rancheria and El Portal Village. The number of beds assigned to employees within each area total 107 and 80, respectively. There are also five beds assigned to concessioner employees in the Abbieville area of El Portal.

### *Utilities and Infrastructure*

The following subsections describe the utilities and infrastructure within the Merced River corridor that service park operations and facilities. Electrical and telecommunications infrastructure, which tends to be fairly uniform across the more developed segments of the corridor, are discussed generally for all applicable segments (i.e., Segments 2, 3, 4, and 7). A segment-specific discussion of water and wastewater follows.

NPS purchases power from Pacific Gas & Electric Company (PG&E). Electricity is carried into Yosemite Valley via a 70,000-volt transmission line that runs overhead through El Portal and the Merced River Gorge to the substation at the old Cascades Powerhouse. The powerhouse is no longer active as a hydroelectric generator but is still used as a substation. From the powerhouse, power is stepped down to 12,000 volts. Conductors extend beneath El Portal Road to a substation in Yosemite Village. The Wawona Tunnel and Big Oak Flat Tunnel are served by overhead lines from the powerhouse.

The primary electric distribution system is in generally good condition after upgrades over the last 12 years, although areas in Yosemite Valley still require rehabilitation. End users in Wawona, El Portal, Foresta, and Hodgdon Meadow are served directly by PG&E, whose facilities are within the park in several places. However, in February 2011, the park completed the installation of a 672 kilowatt



photovoltaic system at the El Portal Maintenance and Administrative Complex. The power generated from the project will offset by approximately 12 percent the electricity purchased from the grid (NPS 2011). A ground source heat pump in the Curry Village employee housing utilizes the near-constant temperature of the earth for heating and cooling of the buildings (NPS 2008g). AT&T supplies telephone service into the park and El Portal primarily through microwave transmission. Overhead and underground lines serve various other locations throughout the park and El Portal. Currently, Yosemite relies on aging communication equipment and infrastructure that does not share a single “backbone” technology to transmit information. Many developed areas of the park — Wawona, Crane Flat, Hodgdon Meadows, Hetch Hetchy, and Tuolumne Meadows — are still served by old copper telephone wires which limit staff’s network and internet access. The existing system cannot be upgraded efficiently or effectively and, therefore, Yosemite’s local service provider has limited bandwidth capabilities and no cost-effective way to provide increased bandwidth (NPS 2008h).

**Segment 1.** Utilities within Segment 1 are concentrated around the Merced Lake High Sierra Camp and Merced Lake Backpackers Campground. The former has a septic system and a water purification system. The septic system consists of a septic tank, lift station (run on photovoltaic trackers [PV]), dosing tank, leach field, and associated piping. The water system consists of a chlorinator shed, water pump (run on PV), sand filter, three 1500 gallon tanks, and associated piping. The Merced Lake Backpackers Campground shares the water system with the Merced Lake High Sierra Camp; however, the campground has a separate septic tank and leach field.

Backcountry Utilities (BCU) is responsible for opening and closing the Merced Lake High Sierra Camp’s utilities each season. Using NPS stock, BCU occasionally pack in and out using one to two mules; however, staff also use bicycles to access backcountry utilities for maintenance. The daily operation of the utilities is done by the primary park concessioner. BCU performs maintenance as needed, either coming from Yosemite Valley or from Vogelsang. Each trip is, at minimum, an overnight trip and utilizes only one to two mules when necessary. BCU also opens and closes the Merced Lake Backpackers Campground’s utilities and maintains them once a week during the open season. The primary park concessioner cleans the facilities daily when the High Sierra Camp is open.

The NPS uses helicopters to remove sludge from the High Sierra Camp every three seasons. It does the same for the Merced Lake campground about every six seasons. The former typically requires about 15 flights. For optimal flight utilization, this waste removal is coordinated for efficiency between the High Sierra Camp and the Merced Lake Backpackers Campground.

**Segment 2.** There is an extensive system of water, wastewater, electric, and communications utility systems in Yosemite Valley. Most utility systems in the valley are operating within design capacity. Three wells, a 2.5-million-gallon water storage tank, and several distribution lines supply Yosemite Valley’s users with water. The system has the capacity to produce about 2,800 gallons per minute (gpm). Components of the water system have been replaced and upgraded due to damage sustained in the January 1997 flood and utility realignment for meadow restoration based on other valley plans. These improvements have restored reliability to the system, and allow for remote monitoring and pumping.

Wastewater flows in Yosemite Valley decreased considerably after the flood because several campgrounds and lodging units were damaged or destroyed and subsequently closed. Leakage and

resulting infiltration have been corrected. The Facilities Management Division has made substantial improvements to the sewage collection system in Yosemite Valley, but leakage and infiltration still occur on occasion during high water events. Wastewater in Yosemite Valley is pumped to the west end of Yosemite Valley, where it flows down to the El Portal Wastewater Treatment Plant at Railroad Flat.

**Segments 3 and 4.** El Portal's water supply system consists of six wells adjacent to the Merced River and four tanks with a total storage capacity of 900,000 gallons, for a total production capacity of approximately 220 gpm. The water system in El Portal is marginally sufficient for the current levels of use but does not have adequate capacity to compensate for any component failure or any increased development. However, the facility is expected to be replaced in the near future.

A wastewater line runs between El Portal and Yosemite Valley, beneath El Portal Road on the north side of the Merced River. As noted above, the El Portal Wastewater Treatment Plant at Railroad Flat receives and treats the valley's wastewater. It has a permitted capacity of 1 million gallons per day (gpd) and is located within 0.25 mile of the Merced River.

**Segments 6 and 7.** As with that of El Portal, Wawona's water supply system is marginal, as is the capacity of its wastewater treatment plant. Of the 20 public water systems in the park, Wawona's is one of two that draw solely from surface sources. The Wawona water system takes untreated water directly out of the South Fork Merced River. This system is currently constrained in most years through much of the late summer and early fall because of low flows in the river. The NPS water distribution system in Wawona is supplied by surface water drawn from the South Fork Merced River at a rate of 480 gpm. The potable water is held in four tanks with a total design capacity of 1,250,000 gallons.

In 1987, NPS implemented the *Wawona Water Conservation Plan*, which set the rate of diversion from the Wawona water intake at 288 gpm (NPS 1987). To protect instream flows for aquatic habitat, the plan enacted mandatory water conservation whenever the river reaches flows of less than 6 cubic feet per second. At flows of less than 6 cubic feet per second, diversions are limited to 10% of the river flow. Conservation measures start with banning irrigation use for the Wawona Golf Course and the lawns of homes and other buildings. The NPS is considering other options to increase the reliability of the water system at Wawona, including bringing water into Wawona through a 7-mile pipeline from a spring located in the Big Creek watershed.

A tertiary wastewater treatment plant serves all of the public sources in the town of Wawona, and much of the private residential and commercial development. As with that of El Portal, Wawona's treatment facility is located within 0.25 mile of the river. The Wawona Campground is served by septic tanks and leach fields. When the capacity of the latter is exceeded (or ultimately fails), there is a potential for effluent to migrate into groundwater and the river.

### ***Environmental Consequences Methodology***

The analysis of facilities and operations within this section focuses on administrative facilities, employee housing, utilities and infrastructure, and the operational burden of carrying out the management actions identified under the respective alternatives. The consideration of park facilities in this section is not exhaustive. For example, infrastructure, such as roads, bridges, parking, and shuttle and regional transit,

are addressed in the “Transportation” section of this chapter. Similarly, trails, overnight accommodations, and recreational facilities and services are addressed in the “Visitor Experience” section of this chapter. However, the operational implications of the alternatives, as they pertain to such facilities, are addressed in this section. It is assumed across all alternatives that staffing would remain sufficient to meet visitor needs and carry out regular management and operational duties.

Proposed management actions under the *Merced River Plan/EIS* are evaluated in terms of the context, intensity, and duration of impacts on concessioner and park operations and facilities, and whether the impacts are considered beneficial or adverse.

- **Context.** For the purposes of this analysis, the local, segmentwide, and parkwide implications for operations and facilities are considered. Due to the nature of park operations, unless otherwise specified, all impacts are assumed to be parkwide.
- **Intensity.** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts are effects considered not detectable and would have no discernible effect on operations and facilities. Minor impacts are effects on operations and facilities that would be slightly detectable but not expected to have an overall effect on the ability of the park to provide services and facilities. Moderate impacts would be clearly detectable and could have an appreciable effect on operations and facilities. Major impacts would have a substantial, highly noticeable influence on park operations and facilities and include those impacts that would reduce the ability to provide adequate services and facilities to visitors and staff.
- **Duration.** The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional or restoration- or construction-related activities. A long-term impact would have a permanent effect on operations and facilities.
- **Type of Impact.** Impacts are evaluated in terms of whether they would be beneficial or adverse to operations or facilities. Beneficial impacts would improve operations and/or facilities. Adverse impacts would negatively affect operations and/or facilities, or could impede the ability to provide adequate services and facilities to visitors and staff. Beneficial impacts on park operations and facilities include changes to more closely match supply with demand regarding staffing and the inventory of employee housing, administrative facilities, utilities, and infrastructure.

### ***Environmental Consequences of Alternative 1 (No Action)***

The following discussion provides an overview of the types of impacts on park operations and facilities that could occur within each segment of the Merced River corridor from implementation of Alternative 1 (No Action). Under Alternative 1, park operations and facilities within the Merced River and South Fork Merced River corridors would continue to be guided by *NPS Management Policies* and *Superintendent’s Compendium*, among other documents that affect management decisions regarding operations and facilities. Park visitation would be expected to continue growing at the present rate of 3% annually. As a result, the operational burden associated with managing large numbers of park visitors, including those associated with the provision of visitor services; the management of park resources; and the demands on and maintenance of administrative facilities, employee housing, and

utilities; among other aspects of park operations would continue to increase. However, limitations on development activities imposed through the 2009 Settlement Agreement, or restrictions similar thereto, would remain in place for the foreseeable future. Such limitations include prohibitions on the development of any new overnight lodging units or the paving of any park areas or trails that are currently unpaved. In addition, the park would not construct any new structures, except for those that are small, temporary, easily removed, nonhabitable, and designed to support existing uses, systems, and programs (Friends of Yosemite Valley et al. 2009). As such, the administrative facilities and employee housing described in the “Affected Environment” section, above, would be expected to remain in place for the remainder of their useable life. Utilities and infrastructure serving these administrative facilities, employee housing, overnight lodging, and other visitor-serving facilities would also remain in place and be maintained, as necessary, to meet employee and visitor demands.

## Corridorwide Actions

### *Actions to Protect and Enhance River Values*

Under Alternative 1 (No Action), impediments to the free-flowing condition of the Merced River, including riprap, revetments, and abandoned infrastructure, would remain in place. Park staff would continue to undertake measures to ensure a high level of water quality, including regular maintenance of trails and wastewater infrastructure. Ongoing impacts associated with informal trails, conifer encroachment into meadows, and bank erosion associated with high visitation and infrastructure would remain. The park would continue restoration projects in several meadows and on the riverbank in numerous locations (per the Settlement Agreement). As described more fully in the Alternatives chapter, this work would include riparian tree planning, conifer removal, mulching, invasive species control, and the potential use of some heavy equipment (i.e., a bobcat or small excavator). Sensitive cultural resources would continue to experience impacts from informal trails, infrastructure, campgrounds, and parking areas. Park staff would continue to manage cultural resources in accordance with the requirements of the National Historic Preservation Act, and in consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation. Traffic congestion, vegetation growth, informal trails, and trampled vegetation and riverbanks would continue to affect scenic resources. Park staff would not implement the measures identified in *Scenic Vista Management Plan*. Alternative 1 does not propose any additional measures to address these issues. As such, park staff would experience no short-term impact associated with implementation of Alternative 1. However, the park would continue to experience a negligible to minor, adverse operational impact associated with incremental management of impacts associated with these conditions.

### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Under Alternative 1, transportation management would continue as under present conditions. During peak summer days, congestion would reach near gridlock levels at park entrances and pinch-points throughout Yosemite Valley. On these days, the number of vehicles entering the valley would exceed the number of available parking spaces, contributing to further congestion and resource impacts associated with the use of existing and newly created informal parking areas. No additional management measures to address these issues would occur under Alternative 1. As such, park staff

would continue to experience a long-term, minor, adverse operational impact associated with traffic and parking management.

### **Segments 1, 5, and 8: Merced River Above Nevada Fall and Merced River Above and Below Wawona**

#### ***Impacts of Actions to Protect and Enhance River Values***

Merced Lake Ranger Station Meadow would continue to experience high levels of bare ground from pack stock grazing and trampling, and informal trails would continue to traverse park meadows. No additional actions would be taken under Alternative 1 to address these issues. The impact on park operations would continue to be long-term, negligible, and adverse.

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Wilderness access would continue to be managed by backcountry zone capacities and related trailhead quotas. The quota for Little Yosemite Valley would remain at 150 people. Park staff would continue to incur a negligible to minor, adverse operational impact associated with administration of the trailhead quota system and restoration activities required of visitation at present levels.

Under Alternative 1, the Merced Lake High Sierra Camp would operate at capacity. The camp would continue to host up to 60 guests nightly and provide beds for five employees during summer months. As such, park staff would continue to experience a long-term, negligible to minor, adverse operational impact associated with the seasonal set-up, weekly supply, and daily maintenance of the camp and associated infrastructure (i.e., water supply infrastructure, septic system, leach field, among other features).

The number of designated campsites within the Merced River corridor's wilderness, specifically at Little Yosemite Valley and Moraine Dome Campground, would remain as under present conditions. Dispersed camping would continue at Merced Lake Backpackers Campground. The park would continue to experience a long-term, negligible, adverse operational impact associated with management and maintenance of these facilities.

**Segments 1, 5, and 8 Impact Summary.** Implementation of Alternative 1 would result in parkwide, long-term, negligible, adverse impacts on park operations and facilities.

### **Segment 2: Yosemite Valley**

#### ***Impacts of Actions to Protect and Enhance River Values***

Under Alternative 1, bridges, elevated roadways, abutments, and abandoned infrastructure and fill would remain within the Merced River corridor and continue to affect the river's free-flowing condition. Water quality within Segment 2 would continue to be affected by human activity in and around the river. Such activities within the corridor would continue to affect the river's biological values within Yosemite Valley. While not prescribed under Alternative 1, park staff would continue to

manage traditionally used plant populations in accordance with the invasive plant management program. No action is proposed under Alternative 1 to address these issues. As a result, park staff would experience no changed short-term, operational burden. However, because protecting river values under these conditions would necessitate ongoing maintenance and restoration activities, the impact on park operations would continue to be long-term, minor, and adverse.

***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 1, the Yosemite Valley would continue to receive approximately 20,900 visitors daily. Daytime visitation would remain around 14,800, while overnight visitation would continue to approach 6,100. Visitation levels would be expected to increase at a rate of approximately 3% annually, commensurate with trends in overall park visitation. The impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor-serving facilities would continue to be long-term, minor, and adverse.

Overnight lodging facilities, including those at Curry Village (400 units), Yosemite Lodge (245 units), Housekeeping Camp (266 units), and Ahwahnee Hotel (123 units), would remain in operation and continue to receive guests at present levels. Lodging units within the valley would continue to total 1,034. The management and maintenance requirements of these facilities would continue to have a long-term, negligible to minor, adverse impact on park operations.

The number of campsites within the valley would remain as under current conditions, including those at Camp 4 (35 sites), Upper Pines Campground (240 sites), Lower Pines Campground (76 sites), North Pines Campground (86 sites), Backpackers Campground (25 sites), and Yellow Pine Campground (4 administrative sites). Thus, the valley would continue to host 466 campsites. Through the continued operation of these facilities, and maintenance and restoration required of high visitation in their vicinity, park staff would continue to incur a long-term, negligible to minor, adverse operational impact.

Concessioner operations within the valley would stay in their present locations and conditions. No new concessioner employee housing would be constructed under Alternative 1. As such, employee housing would continue to be concentrated within Yosemite Village (431 beds), the Ahwahnee Hotel (48 beds), Curry Village (605 beds), and Yosemite Lodge (90 beds). The total number of valley housing units assigned to concessioner employees would therefore remain at 1,151. Under these conditions, housing need would continue to exceed supply. As a result, some concessioner employees who work within the valley would continue to reside in housing outside of the valley and commute daily to their place of employment. The long-term operational impact would continue to be negligible to minor, and adverse.

**Segment 2 Impact Summary:** Implementation of Alternative 1 would result in parkwide, long-term, negligible to minor, adverse impacts on park operations and facilities.

## **Segments 3 and 4: Merced River Gorge and El Portal**

### ***Impacts of Actions to Protect and Enhance River Values***

Under Alternative 1, obstructions to the free-flowing condition of the Merced River would remain in the Merced River gorge and El Portal segments, including levees, abandoned infrastructure, riprap, and fill material at the Greenemeyer Sandpit. Within El Portal, vehicles would continue to affect oak trees by parking within their dripline. And water quality would continue to be affected by stormwater runoff from the informal off-street and roadside parking areas between the Merced River and Foresta Road. No actions to address these issues are proposed under Alternative 1. However, park staff would continue to incur a long-term, negligible to minor, adverse impact associated with the incremental management of the impacts stemming from these developments.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segments 3 and 4 would not be expected to change appreciably under Alternative 1. A total of 192 beds would continue to be assigned to concessioner employees, fulfilling existing demand within Segments 3 and 4. There would continue to be no concessioner-operated lodging or campgrounds within these segments. The consequent long-term impact on concessioner operations would be negligible and adverse.

**Segments 3 & 4 Impact Summary:** Implementation of Alternative 1 would result in parkwide, long-term, negligible to minor, adverse impacts on park operations and facilities.

## **Segments 6 and 7: Wawona and Wawona Impoundment**

### ***Impacts of Actions to Protect and Enhance River Values***

Under Alternative 1, the current water collection and distribution system at Wawona would remain in place. Impacts on water quality associated with abandoned infrastructure, septic systems, and other development in proximity to the Merced River would continue within Segment 7. While no actions are proposed under Alternative 1 to address these issues, park staff would continue to experience a long-term, negligible, adverse impact associated with the ongoing maintenance of infrastructure, specifically wastewater infrastructure, to avoid or minimize impacts on water supply and quality.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Existing visitor facilities in the Wawona area would remain as under present conditions. Roadside parking between the Wawona Store and Chilnualna Falls Road would remain in place and continue to disturb soil and vegetation near the Merced River. The facilities and layout at the Wawona Maintenance Yard are not optimal for operational efficiency and would continue to affect the riparian corridor. Alternative 1 includes no measures to address these issues. However, long-term management of impacts associated with development near the channel would continue to impose a negligible, adverse operational burden on the park.

**Segments 6 & 7 Impact Summary:** Implementation of Alternative 1 would result in parkwide, long-term, negligible, adverse impacts on park operations and facilities.

### **Summary of Alternative 1 (No Action) Impacts**

Under Alternative 1, the park would continue to receive around 20,900 visitors daily, with the number of visitors expected to increase by approximately 3% annually. As visitation continues to increase, operational demands associated with visitation, including law enforcement, traffic management, cultural and resource protection, among others, would be expected to increase. The park's commercial services and overnight accommodations, including the valley's 1,034 lodging units and 466 campsites, would remain in operation. Alternative 1 proposes no new construction. For these reasons, over the long-term, depending on park visitation trends and staffing, the impact on park operations and facilities could be minor and adverse.

### **Cumulative Impacts of Alternative 1 (No Action)**

Cumulative effects on park operations and facilities discussed herein are based on analysis of past, present, and reasonably foreseeable future actions in the immediate Yosemite region, in combination with potential effects of Alternative 1. The projects identified below include only those that could affect park operations and facilities within or in the vicinity of the Merced River corridor. Each project is described more fully in the Alternatives chapter.

#### ***Past Actions***

The following is a list of cumulatively considerable past actions concerning park operations and facilities.

- Removal of Cascades housing increased housing demand by eliminating five housing units from Segment 1. The project reduced the operational burdens of maintaining the aging structures.
- The construction of 217 new housing units at Curry Village reduced housing demand by replacing units lost during the 1997 flood. The project increased demand for utilities in Yosemite Valley and operational burdens associated with facilities maintenance.
- Construction of temporary housing for 102 employees at the Curry Village Huff House reduced temporarily the sudden increase in demand resulting from closure of Curry Village units due to rockfall hazard.
- Construction of six temporary housing units at Yosemite Valley Lost Arrow reduced temporarily the sudden increase in demand resulting from closure of Curry Village units due to rockfall hazard.
- Construction of 12 temporary employee housing units at The Ahwahnee reduced the sudden increase in demand resulting from closure of Curry Village units due to rockfall hazard.
- Completion of numerous ecological restoration projects reduces the operational burdens of future restoration efforts in these areas.



### ***Present Actions***

The following is a list of cumulatively considerable present actions concerning park operations and facilities.

- Implementation of the *East Yosemite Valley Utilities Improvement Plan/EA* may reduce utilities demand by improving the efficiency and reliability of utility infrastructure. These improvements also reduce the operational burdens associated with the repair and maintenance of aging infrastructure.
- Completion of the *Mariposa County General Plan* Housing Element Update may contribute to the long-term reduction in demand for housing by providing for the expansion of housing opportunities within the county.
- Installation of traffic counters, development of the Integrated Transportation Capacity Assessment, Parkwide Traffic Management and Information System, and Mariposa Grove area transportation planning projects may reduce traffic-related operational burdens by contributing to transportation management solutions within the park.
- Completion of the Parkwide Communication Data Network could improve operational efficiency through faster and more secure network capabilities, while also reducing the demand on existing telecommunications infrastructure.
- Relocation of 40 park staff from offices in El Portal to Mariposa may reduce the demand for administrative facilities and utilities within El Portal.
- Ongoing ecological restoration projects may reduce the operational burdens of future restoration efforts in these areas.
- Restoration activities at Mariposa Grove and the South Entrance Station Kiosk Replacement could benefit transportation flow and parking conditions between the South Entrance and Wawona, thereby reducing the park's overall transportation management burdens.

### ***Reasonably Foreseeable Future Actions***

The following is a list of cumulatively considerable, reasonably foreseeable future actions concerning park operations and facilities:

- Development of the new Concessioner Prospectus could increase or decrease demands for administrative facilities, housing, utilities, and overall operational burden, depending on its terms.
- Completion of the forthcoming *Yosemite Wilderness Stewardship Plan/EIS* would reduce operational burdens by providing clearer and more up-to-date direction with regard to resource and visitor management within wilderness areas of the park.
- Future ecological restoration projects may temporarily increase the operational burdens of restoration efforts in these areas.

### ***Overall Cumulative Impact***

As discussed previously, Alternative 1 does not propose any changes to existing park and concessioner operations and facilities. Past actions have had an overall beneficial, however temporary, effect on housing demand. Present activities have the potential to reduce transportation- and utilities-related operational burdens, and provide for new housing opportunities outside of the park. Reasonably foreseeable actions may mitigate some of the operational burden of increasing visitation through transportation management solutions, updated direction with regard to wilderness management, and a clearer perspective of the future role of the primary park concessioner. The cumulative effect of these actions, when considering those of Alternative 1, would be long-term, negligible, and beneficial.

### ***Environmental Consequences Common to Alternatives 2–6***

#### **All River Segments**

##### ***Impacts of Actions to Protect and Enhance River Values***

Corridorwide actions to protect and enhance river values that would occur across Alternatives 2–6 involve restoration and protection of the channel itself, meadow and riparian habitats, and upland vegetation. These include restoration of six miles of informal trails, removal of abandoned underground infrastructure, improvement of river access points, and the removal of riprap, among other activities. River values would also be protected by increased interpretation and outreach concerning river use and natural and cultural resources. The planning, environmental analysis, design, construction/removal, restoration, and monitoring activities associated with these individual management actions would temporarily disrupt the regular work of park staff, resulting in short-term impacts on parkwide operations ranging from negligible to moderate and adverse. While these measures would reduce or eliminate ongoing and/or future impacts on park resources and infrastructure, the park would still incur a long-term, minor to moderate, adverse impact associated with restoration management and monitoring.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values across all segments under Alternatives 2–6 include removing 3,400 feet of riprap from the river bank and revegetating with riparian species, and replacing an additional 2,300 feet of riprap with bioengineered riverbank stabilization devices. This work would require the use of heavy equipment, including loaders and dump trucks. The removal, transport, disposal, restoration, and monitoring work associated with these actions would require several weeks of park staff time to implement, but would not substantially disrupt other ongoing construction, demolition, and restoration activities in the valley and beyond. As a result, these actions would result in a short-term, parkwide, minor, adverse impact on park operations.

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

The park does not propose any measures to manage visitor use and facilities across Segments 1–8 that would occur across Alternatives 2–6.

## **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

### ***Impacts of Actions to Protect and Enhance River Values***

Under Alternatives 2–6, the park would undertake measures to eliminate impacts on natural and cultural resources in the vicinity of Merced Lake Backpackers Campground and Merced Lake High Sierra Camp (Segment 1) and archaeological resource site CA-MRP-0218 (Segment 5). Such measures would include prohibiting grazing and restoring denuded areas associated with informal trails. These actions, including the planning and follow-up monitoring, would likely require the commitment of several staff from across numerous park divisions and the use of pack stock, for a period of several days to several weeks. However, because these measures are consistent with the types of management activities staff from these divisions typically perform, the short-term impact on park operations would be negligible and adverse. Park staff would experience a long-term, negligible, adverse operational impact associated with maintenance and monitoring of restoration areas.

**Segments 1, 5, and 8 Impact Summary:** Actions to protect and enhance river values would result local, long-term, negligible, adverse impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### ***Impacts of Actions to Protect and Enhance River Values***

Actions to protect and enhance river values that would occur in Yosemite Valley under Alternatives 2–6 involve removal of abandoned infrastructure and other development affecting the Merced River’s hydrologic function, extensive meadow restoration, and management of high visitor-use areas to address associated impacts on riparian habitats and sensitive cultural resources. Removal of abandoned or obsolete infrastructures would reduce ongoing impacts on meadow hydrology and lessen channel scour. Upland restoration activities, including removal of informal trails, roadbeds, and parking areas, would improve meadow health. Development of a management plan for archeological sites, preparation of outreach materials, and imposition of use restrictions in sensitive areas would reduce ongoing impacts on cultural resources. The demolition, removal, transport, disposal, restoration, and monitoring work associated with these actions would require a substantial amount of park staff time and resources, and would likely disrupt other ongoing construction, demolition, and restoration activities in the valley and beyond. As a result, these actions would result in a short-term, moderate, adverse impact on park operations. These efforts would reduce the long-term staff burden associated with managing these ongoing impacts. However, the follow-up restoration monitoring and maintenance would continue to impose a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river’s biological values within Segment 2 under Alternatives 2–6 include: restoring 4.5 acres of riparian habitat in the area of Yosemite Lodge, 20 acres in the area of the western portion of the Former Upper Pines Loop Campground, and removal of infrastructure and restoration of a minimum of 19.7 acres at the Former Upper and Lower Pines campgrounds; restoring impacted areas of Ahwahnee Meadow, including removal of tennis courts; improving access and removing infrastructure from riparian areas at

Cathedral Beach, Housekeeping Camp, and Bridal Veil; constructing a boardwalk extension to reduce Sentinel Meadow trampling; fencing and vegetation management at Stoneman Meadow, restoring floodplain habitat at Devil's Elbow, and filling ditches not serving current operational needs. In addition, the park would remove one and repave five pull-outs along El Portal Road. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, removal, transport, disposal, restoration, and monitoring work associated with these actions would require more than one year of park staff time to implement, and would disrupt other ongoing construction, demolition, and restoration activities in the valley and beyond. As a result, these actions would result in a short-term, parkwide, moderate, adverse impact on park operations.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values within Segment 2 under Alternatives 2-6 include: removing the abandoned gauging station at Pohono Bridge, removing the footings and former river gauge base at Happy Isles, and restoring these areas to natural conditions. This work would involve the use of heavy equipment, including excavators, a skid steer, and dump trucks, and require approximately five weeks of staff time to implement. The resulting impact on park operations would be short-term, parkwide, negligible and adverse.

**Cultural Resource Actions.** Specific projects to protect and enhance the river's cultural values that would occur within Segment 2 under Alternatives 2-6 include fencing and/or restricting access to the archeologically significant large bedrock mortar (pounding rock) next to Yosemite Falls Trail. The majority of this work would be completed through the use of hand tools and require a nominal commitment of staff time. As such, the impact on park operations would be short-term, parkwide, negligible, and adverse.

**Scenic Resource Actions.** Specific projects to protect and enhance the river's scenic values within Segment 2 under Alternatives 2-6 include: selectively thinning conifers and other vegetation in the vicinities of The Ahwahnee and Meadow, Bridal Veil Falls and West Valley, Cooks and Sentinel Meadows, Curry Village, El Capitan, Housekeeping Camp, Yosemite Lodge, and other areas of the valley; restoring grassland and oak habitat in the areas of Bridalveil Straight; repairing riverbank erosion at Clark's Bridge; and addressing informal trails and trampling at the east end of El Capitan Meadow. Much of this work would be accomplished through the use of hand tools, but could also involve heavy equipment for various handling, transport, and restoration activities. This work would occur over the course of several years and may disrupt other restoration activities. As a result, these projects would have a parkwide, short-term, minor to moderate, adverse impact on park operations.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Actions to manage visitor use and facilities within Segment 2 that would occur under each action alternative involve changes to campsites, visitor and administrative facilities, employee housing, and transportation. Each of these actions and their impacts on park operations is summarized below. Their implications for overall park visitation, park employees, housing, and utilities are discussed in the context of the respective alternatives in the subsections that follow.

Under each action alternative, the park would remove or repurpose several visitor-serving facilities, such as the Curry Village Ice Rink; Happy Isles Snack Stand; Yosemite Lodge Post Office, Pool, and Snack Stand; and Bank Building. The park would also construct new campsites and remove campsites from the rockfall hazard zone.

Concessioner employee housing within Yosemite Valley would be affected through the removal of temporary units at the Yosemite Lodge (8 beds), Highland Court (82 beds), Huff House (262 beds), and Boys Town (48 beds). New housing developments would be constructed at Huff House (164 beds), Yosemite Lodge (104 beds), and Lost Arrow (50 beds).

Each action alternative includes actions to improve pedestrian wayfinding and access. The park would also undertake a number of transportation and parking management measures; remediation, redesign, and expansion of existing parking areas; and construction of new parking lots in other areas.

These activities, in addition to the facilities removal and construction described previously, would divert considerable staff time and attention away from other ongoing projects. The work associated with these projects, including the planning, demolition, transport, disposal, and reconstruction of housing, would have a substantial impact on park operations. As such, the park would experience a short-term, moderate, adverse operational impact throughout the design, demolition, and reconstruction phases. While the new facilities would introduce a new operational and maintenance burden, these would be more than offset by the removal of existing structures. For these reasons, park staff would likely experience a long-term, negligible to minor, beneficial impact associated with facilities operation and maintenance.

**Curry Village and Campgrounds.** The park would remove the Happy Isles Snack Stand at Curry Village. At The Ahwahnee, the park would remove the swimming pool and tennis courts; redesign, formalize, and improve drainage within the existing parking lot; and construct a new 50 parking space lot east of the current parking area. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Facilities removal and parking expansion would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would remove from Yosemite Village the Concessioner General Office, Concessioner Garage, and the Arts and Activities Center (Bank Building), and repurpose the Village Sports Shop for public use as a visitor contact station. The park would also construct a new maintenance building near the Government Utility Building. Roadside parking along Sentinel Drive would be removed and Camp 6 parking expanded into the footprint of the Concessioner Garage. To improve visitor access between the Camp 6 area and Village, the park would construct a pathway connecting the new Camp 6 parking lot with the repurposed Village Sports Shop. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Facilities and roadside parking removal would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**West Yosemite Valley.** The park would remove the NPS Volunteer Office, post office, swimming pool, and snack stand. It would also remove old and temporary employee housing (Thousands Cabins and Highland Court) and replace it with new housing. In addition, the park would relocate the Yosemite Lodge maintenance and housekeeping facilities and repurpose the food court. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Facilities removal would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities.

### **Segments 3 and 4: Merced River Gorge and El Portal**

#### ***Impacts of Actions to Protect and Enhance River Values***

To protect and enhance river values within the Merced River gorge and El Portal, the park would remove informal trails, nonessential roads, fill materials, and abandoned infrastructure throughout Segments 3 and 4. It would also develop best management practices for revetment construction and repair throughout the Merced River corridor. The planning and design; demolition, removal, transport, and disposal of waste materials; and restoration of these areas would result in a short-term, negligible to minor, adverse impact on park operations. These efforts would reduce the long-term staff burden associated with managing these ongoing impacts. However, the follow-up restoration monitoring and maintenance would continue to impose a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 4 under Alternatives 2-6 include removing asphalt and imported fill from the Abbieville and Trailer Village areas. The project would require the use of a skid steer and dump truck, and take several weeks to complete. The resulting impact on park operations would be short-term, parkwide, negligible and adverse.

**Scenic Resource Actions.** Specific projects to protect and enhance the river's scenic values within Segment 3 under Alternatives 2-6 include: selectively thinning conifers in the area of the Cascade Falls viewpoint. Much of this work would be accomplished through the use of hand tools, but could also involve heavy equipment for various handling, transport, and restoration activities. This work would occur over the course of a few days and would not be expected to disrupt other restoration activities. As a result, these projects would have a parkwide, short-term, negligible, adverse impact on park operations.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Actions to manage visitor use and facilities within Segments 3 and 4 that would occur under each action alternative involve changes to employee housing and visitor facilities. These actions and their impacts on park operations are summarized below. However, their implications for overall park visitation, park employees, housing, and utilities are discussed below, in the context of the respective alternatives.

Under each alternative, the park would construct infill housing in El Portal Village Center. The park would also construct a restroom for visitor use in Old El Portal. Planning and construction activities associated with this work would have a short-term, minor, adverse impact on park operations. The park would experience a long-term, negligible, adverse operational impact associated with the maintenance and operation of these facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would impose a parkwide, long-term, negligible, adverse impact on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities.

### **Segments 6 and 7: Wawona and Wawona Impoundment**

#### ***Impacts of Actions to Protect and Enhance River Values***

Actions to protect and enhance river values that would occur within segments 6 and 7 under Alternatives 2–6 include measures to maintain river flows, manage campground waste, and protect cultural resources.

The park would improve Wawona Campground wastewater and refuse management and facilities, remove abandoned infrastructure, and undertake numerous site-specific management measures to counteract or minimize ongoing impacts on cultural resources. The development and implementation of plans for carrying out these projects would have a short-term, negligible to minor, adverse impact on park operations. These measures would reduce the time and energy park staff spends managing for these impacts. But the park would continue to incur a long-term, negligible to minor, adverse impact associated with associated restoration monitoring and maintenance.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic values within Segment 7 under Alternatives 2–6 include retaining the current water collection and distribution system and implementing the water conservation plan related to the minimum flow analysis for the South Fork Merced River. These actions would be similar to those described under Alternative 1. As such, the impact on park operations would be long-term, parkwide, negligible, and adverse.

**Cultural Resource Actions.** Specific projects to protect and enhance the river's cultural values within Segment 7 under Alternatives 2–6 include removing 7 campsites from Wawona Campground that

cause potential impacts to sensitive archeological resources. This work could require the use of heavy equipment, including an excavator, skid steer, loader, and dump truck. This effort would require approximately one week of staff time to complete. As such, the impact to park operations would be short-term, parkwide, negligible, and adverse.

### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Actions to manage visitor use and facilities within Segments 6 and 7 that would occur under Alternatives 2–6 involve construction of and improvements to administrative and visitor-serving facilities. These actions and their impacts on park operations are summarized below. However, their implications for overall park visitation, staffing, housing, and utilities are discussed in the context of the respective alternatives in the subsections that follow.

Under Alternatives 2–6, the park would improve river access, restroom, picnic, and bus stops within Wawona. These improvements would have a short-term, negligible to minor, adverse impact on park operations. Over the long-term, park staff would continue to incur a negligible and adverse impact associated with the maintenance and upkeep of these existing and new facilities.

The park would also remove staged materials, abandoned utilities, vehicles, and a parking lot from the riparian buffer at the Wawona Maintenance Yard and restore the area's native ecosystem. It would also remove roadside parking between the Wawona Store and Chilnualna Falls Road. Park operations would incur a short-term, minor, adverse impact associated with the demolition, transportation, disposal, and restoration involved in this effort.

To improve operational efficiency, the park would construct new facilities to house maintenance operations and a new wildland fire station within Segment 7. The planning, design, and construction of these facilities would result in a short-term, minor to moderate, adverse operational impact on park operations. Maintenance of these facilities would impose a long-term, negligible, adverse impact on park staff.

Wawona. The park would redesign the bus stop at the Wawona Store to accommodate increased visitor use. The planning, design, contracting, and monitoring required of this project would have a parkwide, short-term, negligible, adverse impact on park operations.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would impose a long-term, parkwide, negligible, adverse impact on park operations. Actions to manage user capacities, land use, and facilities would have long-term, parkwide, negligible, adverse impacts on park operations and facilities.

### **Summary of Impacts Common to All Action Alternatives**

Management actions common to Segments 2–6 involve numerous large-scale restoration projects, substantial administrative facilities projects in Yosemite Valley and Wawona, and a considerable change in the valley's supply of temporary employee housing. These actions would improve river values directly through restoration and indirectly through reduced development intensity within the valley. The work associated with these actions would result in a short-term, minor to moderate,



adverse impact on park operations. Such measures would address large-scale problems that, if left to incremental management measures, would otherwise continue to require additional staff time and resources to address. While such actions would reduce operational burdens associated with incremental efforts to address these ongoing impacts, the park would still incur the burdens of restoration area monitoring and maintenance. Nonetheless, the long-term impact of these actions would be negligible to minor and beneficial.

### ***Environmental Consequences of Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration***

#### **All River Segments**

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 2, the park would implement a day-use parking permit system for the East Yosemite Valley — checked at entrance gates — to regulate the number of vehicles entering Yosemite Valley during the peak season and potentially into the shoulder seasons. Development, implementation, and maintenance of the system would have a short-term, negligible to minor, adverse impact on park operations. Management of the system would require additional staff time and resources. Over the long-term, however, as the park is better able to regulate traffic entering the valley, the operational burdens associated with managing high volumes of traffic in the valley (i.e., public safety, traffic control, parking assistance, and restoration of impacts surrounding informal parking areas) would be reduced. The result would be a long-term, negligible, beneficial impact on park operations.

#### **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segment 1 would be reduced through a decrease in the Little Yosemite Valley trailhead quota (from 150 to 25), removal of the Merced Lake High Sierra Camp, and wilderness campground modifications. The resulting decline in wilderness visitation would reduce the park's operational burden associated with visitation-related wilderness restoration. The long-term impact would be minor and beneficial.

Under Alternative 2, there would be a 100% reduction in the Merced River corridor's wilderness lodging units. All 60 units and associated facilities at the Merced Lake High Sierra Camp would be removed. These actions would have long-term, minor, beneficial impacts on concessioner operations associated with managing and maintaining these facilities.

The park would reduce the total number of designated campsites within the corridor's wilderness. This change would result from the elimination of designated camping at Moraine Dome and conversion of the Little Yosemite Valley Backpackers Campground to dispersed camping. Dispersed camping at the Merced Lake Backpackers Campground would be increased, but facilities would be

reduced. This would result in a long-term, negligible to minor, beneficial impact on park operations associated with management and maintenance of these facilities.

Removal of the Merced Lake High Sierra Camp and the associated visitor services would eliminate the need for employees to operate the camp. Such a reduction would contribute to the long-term, minor, beneficial impact on concessioner staffing operations. These actions would also eliminate the need for and existence of housing associated with the camp's operation. As such, the proposed actions would not have an impact on concessioner employee housing demand within the Merced River corridor's wilderness.

Demand for utilities within Segment 1 would decrease under Alternative 2. The removal of infrastructure and restoration of these areas would require a temporary, yet substantial commitment of park staff time, resources, and equipment. The work would likely require several months to plan and execute, involve staff across several divisions, and require several pack crews and multiple helicopter flights. The short-term impact on park operations would be minor and adverse. However, the operational burden associated with seasonal set-up, weekly maintenance, and ongoing habitat restoration as a result of high visitation at and around camps would be reduced with their conversion and removal. Thus, the long-term impact on park operations would be minor and beneficial.

**Segment 1 Impact Summary.** Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, beneficial impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### ***Impacts of Actions to Protect and Enhance River Values***

Projects proposed in Segment 2 to protect and enhance river values involve removal of buildings from the Yosemite Lodge area, and rerouting and revegetating a portion of the Valley Loop Trail. The park also proposes to restore 10.9 acres of riparian ecosystem from which cabins were removed after being damaged by the 1997 flood. Undertaking this work would require a considerable amount of park staff time and resources across several management divisions. The work would likely take several weeks to a few months to complete, during which time normal park management activities could be disrupted. The resulting impact to park operations would be short-term, negligible to minor, and adverse. These actions would also benefit parkwide operations because they would lessen the need for future meadow restoration. However, these actions would also increase the need for ongoing monitoring and maintenance of the restoration areas. As such, the proposed actions would have a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 2 under Alternative 2 include: rerouting trails at Ahwahnee Meadows; removing and restoring a portion of Northside Drive (900 feet) and rerouting the bike path; removing 1,335 feet of Southside Drive, re-alignment of the road, reconfiguring Curry Orchard parking lot, and extending the Stoneman Meadow boardwalk; removing campsites and infrastructure from the 100-year floodplain and restoring 25.1 acres of floodplain and riparian habitat; and removing informal trails and informal parking at El Capitan Meadow. This work would require the use of heavy equipment, including

excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and restoration work would require approximately 50 weeks of crew and equipment time over a period of three years. As a result, these projects are likely to disrupt other ongoing maintenance and restoration projects in the valley and beyond. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values within Segment 2 under Alternative 2 include: relocating unimproved Camp 6 parking and rerouting a portion of Northside Drive; removing the Stoneman, Ahwahnee and Sugar Pine Bridges; and restoring these areas to natural conditions. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require approximately 30 weeks of crew and equipment time, during which time other restoration and maintenance activities would be disrupted. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Actions to manage visitor use and facilities under Alternative 2, specifically those concerning vehicle access and number of overnight accommodations, would result in a 33% decrease in daily Yosemite Valley visitation, from approximately 20,900 to 13,900. Daytime visitation would decrease by 5,400 (36%), while overnight visitation would decrease by 1,600 (26%). The resulting impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor-serving facilities would be long-term, minor, and beneficial.

Under Alternative 2, there would be a 46% net reduction in valley lodging units. Contributing to this decline would be removal of units from Housekeeping Camp, conversion of the Yosemite Lodge to a day use facility, and an increase in units at Curry Village, such that valley lodging units would total 556. These actions would have a long-term, moderate, beneficial impact on concessioner operations associated with management and maintaining these facilities.

The park would reduce the total number of campsites within the valley to 450 (a decrease of 3%). This change stems largely from campsite removals at Upper Pines, Lower Pines, and North Pines campgrounds, and additions at Yosemite Lodge. This would result in a long-term, negligible, beneficial impact on park operations associated with management and maintenance of these facilities.

Concessioner employee housing within Yosemite Valley would be reduced by 57% — from 1,151 beds to 494 beds. This reduction would have a detrimental effect on the supply of housing within Segment 2. The demand for utilities would decrease with the removal of employee housing, lodging units, and campgrounds, and the decrease in overnight visitation. With the decrease in staffing required for concessioner operations, the demand for valley administrative facilities would also be expected to decrease.

Construction activities under Alternative 2 would include the removal work described above, as well as parking improvements at Curry Village and Camp 6, as well as new camping and parking facilities at Yosemite Lodge. The planning, demolition, design, construction, and restoration activities associated

with this work would impose a short-term, minor to moderate, adverse impact on park operations. The park would also incur long-term, negligible, adverse operational burdens associated with the maintenance and operation of these new facilities.

**Curry Village and Campground.** The park would construct 78 new hard-sided units in Boys Town, bringing the total number of new and retained units at Curry Village to 433. The park would remove campsites from Lower Pines (32), North Pines (86), and Upper Pines (24). In addition, the park would discontinue commercial day rides from the Curry Village Stables. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor to moderate, and adverse. Facilities removal and replacement of old guest units would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would reroute Northside Drive to the south of the Yosemite Village day-use parking area, reconfigure the lot to accommodate a total of 550 parking spaces north of the road, outside of the dynamic 10-year floodplain, and install walkways leading to Yosemite Village. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor to moderate, and adverse. Increased parking efficiency would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 4 and Yosemite Lodge.** The park would move on-grade pedestrian crossing Camp 4 and Yosemite Lodge. The park would convert the Highland Court area to a walk-in campground; reconfigure pedestrian crossing of Northside Drive and Yosemite Lodge Drive, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour busses. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor, and adverse. Increased parking would have a long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor to moderate, beneficial impacts on park operations and facilities.

### **Segments 3 and 4: Merced River Gorge and El Portal**

#### ***Impacts of Actions to Protect and Enhance River Values***

Within Segment 4, the park would establish a 2.25-acre oak recruitment zone in the vicinity of Odgers fuel storage area and adjacent parking lots. Parking would be prohibited within the trees' drip lines, and new building construction would be prohibited within the oak recruitment zone. Development

and implementation of such protective measures would have a short-term, negligible, adverse effect on normal staff operations. The consequent long-term impact on park operations associated with enforcement of these restrictions and monitoring the restoration areas would be negligible and adverse.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 3 and 4 involve the development of housing and campsites within Segment 4. These actions, in combination with those that would occur under Alternatives 2–6, would not be expected to have an appreciable impact on park visitation.

New high-density concessioner housing would be constructed in Abbieville and Rancheria, outside the 100-year floodplain. In addition, as previously noted, under “Impacts of Actions Common to All Segments for Alternatives 2–6,” new housing would also be constructed in El Portal Village Center. This would increase the total number of concessioner-assigned housing units within El Portal from 192 to 618. These actions would have a beneficial impact on new and existing employees of El Portal because they would increase housing opportunities in an area of high demand.

Demand for utilities and administrative facilities within segment 4 would increase under Alternative 2. The park would experience a short-term, moderate, adverse operational impact associated with the planning, design, relocation, and construction of the projects described above. These actions would also result in a long-term, minor, adverse impact on park operations associated with management and maintenance of the new facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, adverse impacts on park operations and facilities.

### **Segments 6 and 7: Wawona and Wawona Impoundment**

#### ***Impacts of Actions to Protect and Enhance River Values***

Actions to protect and enhance river values within Segment 7 include removal of the Wawona Golf Course. The work associated with this project would noticeably but temporarily disrupt the work of park staff. As such, the undertaking would have a short-term, minor, adverse impact on park operations. While the time and expense associated with maintaining this facility would be reduced with its removal, park staff would still incur a long-term, negligible to minor, adverse operational burden associated with monitoring and maintenance of these restoration areas.

**Biological Resource Actions.** Specific projects to protect and enhance the river’s biological values within Segment 7 under Alternative 2 include the relocation of stock use campsites from sensitive resource areas to Wawona Stables. This work could require the use of heavy equipment and would require approximately one week of crew time. The resulting impacts on park operations would be parkwide, short-term, negligible, and adverse.

***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 6 and 7 involve the removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements within Segment 7. These actions, in combination with those that would occur under Alternatives 2–6, would be expected to effect a nominal decrease in overall visitation within this Segment 7.

Implementation of Alternative 2 management actions would reduce the demand for employee housing within Segment 7. Demand for utilities and administrative facilities within Segment 7 would similarly decrease under Alternative 2. Fewer visitors would mean less draw upon the town's utilities. In addition, the new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would be expected to include high-efficiency fixtures, further reducing the demand for utilities. The construction of new facilities would also reduce demand for administrative space within this segment. The park would experience a short-term, minor, adverse operational impact associated with the planning and execution of projects proposed under Alternative 2. These actions would result in a long-term, minor, adverse impact on park operations associated with restoration monitoring and maintenance.

**Wawona Campground:** Under Alternative 2, the park would reduce the size of the Wawona Campground. Thirty-two campsites, or 33% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, parkwide, minor, beneficial impact on park operations required to manage and maintain these facilities.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible to minor, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, adverse impacts on park operations and facilities.

**Summary of Impacts from Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration**

Under Alternative 2, park staff would carry out a substantial amount of restoration throughout the Merced River corridor. These actions would considerably reduce the long-term operational burden associated with ongoing incremental resource management and maintenance activities. In addition, the park would undertake a considerable number of actions related to transportation management and commercial services. For example, the park would implement a day-use parking permit system for the East Yosemite Valley to help manage a reduced Yosemite Valley parking supply. In addition, the park would substantially reduce the number of lodging units (-46%) and campsites (-3%) within the valley. These actions would decrease Yosemite Valley visitation by an estimated 33%, with similar decreases in both daytime and overnight visitation. Concessioner-assigned housing would also decrease under Alternative 2, with a substantial shift in housing from the valley to El Portal. Under Alternative 2, demands for administrative space, utilities, and housing would be expected to decrease parkwide. However, with the proposed shift in housing and facilities from the valley to El Portal, the latter would experience a considerable increase in demand for these facilities and services. The long-term impacts on park operations and facilities would be parkwide, minor to moderate, and beneficial.

## **Cumulative Impacts from Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration**

Cumulatively considerable projects that could affect park facilities and operations are the same as those identified for Alternative 1, and include past, present, and reasonably foreseeable actions in the Yosemite region.

### ***Overall Cumulative Impacts from Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration***

The cumulative impacts of Alternative 2 management measures, in combination with those common to Alternatives 2-6, would generally be beneficial. Past and present facilities improvements and upgrades would reduce the operational demands on park staff to maintain these assets. For the same reason, park operations would similarly benefit from past and present habitat restoration and resource management projects and plans. Continued implementation of the *East Yosemite Valley Utilities Improvement Plan/EA* would further reduce demands for park utilities. As a result, the cumulative impact of Alternative 2 management measures, in light of past, present, and reasonably foreseeable future projects, would be long-term, moderate, and beneficial.

## ***Environmental Consequences of Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration***

### **All River Segments**

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 3, the park would implement a day-use parking permit system for East Yosemite Valley, checked on-site at parking areas, to regulate the number of vehicles entering Yosemite Valley during the peak season and potentially into the shoulder seasons. Development, implementation, and maintenance of the system would have a short-term, negligible impact on park operations. While management of the system would require additional staff time and resources; over the long-term, as the park is better able to regulate traffic entering the valley, the operational burdens associated with managing high volumes of traffic in the valley (i.e., public safety, traffic control, parking assistance, and restoration of impacts surrounding informal parking areas) would be reduced. The result would be a long-term, negligible, adverse impact on park operations.

### **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segment 1 would be reduced through reductions in the Little Yosemite Valley trailhead quota (from 150 to 75), closure of the Merced Lake High Sierra Camp, and wilderness campground modifications. The resulting decline in wilderness visitation would reduce the park's

operational burden associated with visitation-related wilderness restoration. The long-term impact would be negligible to minor and beneficial.

Under Alternative 3, there would be a 100% reduction in the Merced River corridor's wilderness lodging units. All 60 units and associated facilities at the Merced Lake High Sierra Camp would be removed. The area would temporarily be used as a pack camp for up to 15 people. These actions would have a long-term, negligible to minor, beneficial impact on concessioner operations associated with managing and maintaining these facilities.

The park would reduce the total number of designated campsites within the corridor's wilderness. This change would result primarily from the decrease in designated camping in Little Yosemite Valley. This would result in a long-term, negligible, beneficial effect on park operations associated with management and maintenance of these facilities.

Removal of the Merced Lake High Sierra Camp, and the associated visitor services, would eliminate the need for employees to operate the camp. Such a reduction would contribute to the long-term, negligible, beneficial impact on concessioner staffing operations. These actions would also eliminate the need for and existence of housing associated with the camp's operation. As such, the proposed actions would not have an impact on concessioner employee housing demand within the Merced River corridor's wilderness.

The removal of infrastructure and restoration of these camps would require a substantial temporary commitment of park staff time, resources, and equipment. The work would likely require several months to plan and execute, involve staff across several divisions, and require several pack crews and multiple helicopter flights. The short-term impact on park operations would be minor and adverse. However, the operational burden associated with seasonal set-up, weekly maintenance, and ongoing habitat restoration as a result of high visitation at and around these camps would be reduced with their conversion and removal. Thus, the long-term impact on park operations would be negligible to minor and beneficial.

**Segment 1 Impact Summary:** Actions to manage user capacities, land use, and facilities would have parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### ***Impacts of Actions to Protect and Enhance River Values***

Projects proposed in Segment 2 to protect and enhance river values involve removal of buildings from the Yosemite Lodge area, and rerouting and revegetating a portion of the valley Loop Trail. The park also proposes to restore 10.9 acres of riparian ecosystem from which cabins were removed after being damaged by the 1997 flood. Undertaking this work would require a considerable amount of park staff time and resources across several management divisions. The work would likely require several weeks to a few months to complete, during which time normal park management activities could be disrupted. The resulting impact to park operations would be short-term, negligible to minor, and adverse. These actions would also benefit parkwide operations because they would lessen the need for future meadow



restoration. However, these actions would also increase the need for ongoing monitoring and maintenance of the restoration areas. As such, the proposed actions would have a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 2 under Alternative 3 include: rerouting trails at Ahwahnee Meadows; removing and restoring a portion of Northside Drive (900 feet) and rerouting the bike path; removing 1,335 feet of Southside Drive, re-alignment of the road, reconfiguring Curry Orchard parking lot, and extending the Stoneman Meadow boardwalk; and removing campsites and infrastructure from the 100-year floodplain and restoring 12 acres of floodplain and riparian habitat; and erecting fencing and signage to redirect visitor traffic, and removing informal trails at El Capitan Meadow. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and restoration work would require approximately 36 weeks of crew and equipment time over a period of two years. As a result, these projects are likely to disrupt other ongoing maintenance and restoration projects in the valley and beyond. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values that would occur within Segment 2 under Alternative 3 include: relocating unimproved Camp 6 parking; removing the Stoneman, Ahwahnee and Sugar Pine Bridges; and restoring these areas to natural conditions. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require approximately 30 weeks of crew and equipment time over a period of two years, during which other restoration and maintenance activities would be disrupted. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Actions to manage visitor use and facilities under Alternative 3, specifically those concerning vehicle access and number of overnight accommodations, would result in a 37% decrease in daily Yosemite Valley visitation, from approximately 20,900 to 13,200. Daytime visitation would decrease by 6,300 (43%), while overnight visitation would decrease by 1,400 (23%). The resulting impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor-serving facilities would be long-term, minor, and beneficial.

Under Alternative 3, there would be a 40% net reduction in Yosemite Valley lodging units. This is largely due to the removal of units from Housekeeping Camp, Curry Village, and Yosemite Lodge, bringing total valley lodging down to 621 units. These actions would have a long-term, minor to moderate, beneficial impact on concessioner operations associated with managing and maintaining these facilities.

The park would increase the total number of campsites within the valley to 477 (an increase of 2%). This change is largely due to new campsite development east of Camp 4, west of Backpackers Campground, and in the Upper Pines Loop Addition. This increase would result in a long-term,

negligible, adverse operational impact on park staff associated with maintenance and operation of these facilities.

Concessioner employee housing within the valley would be reduced by 20% — from 1,151 beds to 922 beds. Due to the anticipated reduction in need for concessioner employees to staff reduced visitor serving operations, this net reduction would not have a substantial effect on the supply of housing within Segment 2. The demand for utilities would decrease with the removal of employee housing and lodging units, and the decrease in overnight visitation. With relocation of the Concessioner General Office, and the decrease in staffing required for concessioner operations, the demand for valley administrative facilities would also be expected to decrease.

Construction activities under Alternative 3 would include the removal work described above, as well as parking improvements; new housing development; new camping facilities east of Camp 4 and at Upper Pines Campground; and several small transit and pedestrian access improvements. The planning, demolition, design, construction, and restoration activities associated with this work would have a short-term, minor to moderate, adverse impact on park operations. The park would also incur a long-term, negligible, adverse operational burden associated with the maintenance and operation of these new facilities.

**Curry Village and Campground.** The park would retain 355 guest units at Curry Village. The park would remove campsites from Lower Pines (15), North Pines (34), and Upper Pines (2). In addition, the park would discontinue commercial day rides from the Curry Village Stables. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor, and adverse. Facilities removal would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would reroute Northside Drive to the south of the Yosemite Village day-use parking area, reconfigure the lot to accommodate a total of 550 parking spaces north of the road, and install walkways leading to Yosemite Village. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor to moderate, and adverse. Increased parking efficiency would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Camp 4 and Yosemite Lodge.** The park would move on-grade pedestrian crossing to west of the Northside Drive and Yosemite Lodge Drive, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour busses. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor, and adverse. The reconfiguration of the

pedestrian crossing and increased parking would have long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor to moderate, beneficial impacts on park operations and facilities.

### **Segments 3 and 4: Merced River Gorge and El Portal**

#### ***Impacts of Actions to Protect and Enhance River Values***

Within Segment 4, the park would establish a 2.25-acre oak recruitment zone in the vicinity of Odgers fuel storage area and adjacent parking lots. Parking would be prohibited within the trees' drip lines, and new building construction would be prohibited within the oak recruitment zone. Development and implementation of such protective measures, including the removal of nonnative fill, decompaction of soils, and replanting the oak tree understories in the vicinity of these zones, would have a short-term, negligible, adverse effect on normal staff operations. The consequent long-term impact on park operations associated with enforcement of these restrictions and monitoring the restoration areas would be negligible and adverse.

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 3 and 4 involve the development of housing and campsites within Segment 4. These actions, in combination with those that would occur under Alternatives 2–6, would not be expected to have an appreciable impact on park visitation.

New low- and medium-density housing would be constructed as infill development in Rancheria, outside the 100-year floodplain. As previously noted, under each alternative new housing would also be constructed in El Portal Village Center. This would increase the total number of concessioner-assigned housing units within El Portal from 192 to 223. These actions would have a beneficial impact on new and existing employees of El Portal because they would increase housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would increase under Alternative 3. The park would experience a short-term, minor, adverse operational impact associated with the planning, design, relocation, and construction of the projects described above. These actions would also result in a long-term, negligible, adverse impact on park operations associated with management and maintenance of the new facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user

capacities, land use, and facilities would have parkwide, long-term, negligible, adverse impacts on park operations and facilities.

## **Segments 6 and 7: Wawona and Wawona Impoundment**

### ***Impacts of Actions to Protect and Enhance River Values***

Actions to protect and enhance river values within Segment 7 include removal of the Wawona Golf Course. The work associated with this project, including removal of turf and infrastructure, as well as subsequent decompaction and restoration, would noticeably but temporarily disrupt the work of park staff. As such, the project would have a short-term, minor impact on park operations. While the time and expense associated with maintaining this facility would be reduced with their removal, park staff would still incur a long-term, negligible, adverse operational burden associated with monitoring and maintenance of these restoration areas.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values that would occur within Segment 7 under Alternative 3 include the relocation of stock use campsites from sensitive resource areas to Wawona Stables. This work could require the use of heavy equipment and would require approximately one week of crew time. The resulting impacts on park operations would be parkwide, short-term, negligible, and adverse.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 6 and 7 involve the removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements within Segment 7. These actions, in combination with those that would occur under Alternatives 2–6, would be expected to effect a nominal decrease in overall visitation within this Segment 7.

Implementation of Alternative 3 management actions would reduce demand for employee housing within Segment 7. Demand for utilities and administrative facilities within Segment 7 would slightly decrease under Alternative 3. Fewer visitors would mean less draw upon the town's utilities. In addition, the new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would be expected to include high-efficiency fixtures, further reducing the demand for utilities. The construction of new facilities would also reduce demand for administrative space within this segment. The park would experience a short-term, minor, adverse operational impact associated with the planning and execution of projects proposed under Alternative 3. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance.

**Wawona Campground.** Under Alternative 3, the park would reduce the size of the Wawona Campground. Twenty seven campsites, or 28% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, negligible to minor, beneficial impact on park operations required to manage and maintain these facilities.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible to minor, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, minor, adverse impacts on park operations and facilities.

### **Summary of Impacts from Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration**

Under Alternative 3, park staff would carry out a substantial amount of restoration throughout the Merced River corridor. These actions would considerably reduce the long-term operational burden associated with ongoing incremental resource management and maintenance activities. In addition, the park would undertake a considerable number of actions related to transportation management and commercial services. For example, the park would implement a day-use parking permit system for East Yosemite Valley to manage the reduction in Yosemite Valley parking supply. In addition, the park would substantially reduce the number of lodging units (-40%) but increase the number of campsites (2%) within the valley. These actions would decrease valley visitation by an estimated 37%, with similar decreases in both daytime and overnight visitation. Concessioner-assigned housing would also decrease under Alternative 3, with the largest reduction seen in the valley and a slight increase in El Portal. Under Alternative 3, demands for administrative space, utilities, and housing would be expected to decrease parkwide. However, with the proposed shift in housing and facilities from the valley to El Portal, the latter would experience a slight increase in demand for these facilities and services. The long-term impacts on park operations and facilities would be parkwide, minor to moderate, and beneficial.

### **Cumulative Impacts from Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration**

Cumulatively considerable projects that could affect park facilities and operations are the same as those identified in Alternative 2, and include past, present, and reasonably foreseeable actions in the Yosemite region.

### ***Overall Cumulative Impact from Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration***

The cumulative impacts of Alternative 3 management measures, in combination with actions common to Alternatives 2-6, would generally be beneficial. Past and present facilities improvements and upgrades would reduce the operational demands on park staff to maintain these assets. For the same reason, park operations would similarly benefit from past and present habitat restoration and resource management projects and plans. As previously noted, continued implementation of the *East Yosemite Valley Utilities Improvement Plan/EA* would further reduce demands for park utilities. As a result, the cumulative impact of Alternative 3 management measures, in light of past, present, and reasonably foreseeable future projects, would be long-term, moderate, and beneficial.

## ***Environmental Consequences of Alternative 4: Resource-based Visitor Experiences and Targeted Riverbank Restoration***

### **All River Segments**

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 4, the park would implement a real-time, adaptive day-use traffic and parking management program, utilizing fee structures, transit service expansion, and managed access and diversions. Development, implementation, and maintenance of the system would have a short-term, minor, adverse impact on park operations. Management of the various components of this system over the long-term would require a long-term commitment of staff time and resources. However, as park staff is better able to manage traffic throughout Yosemite Valley, the operational burdens associated with managing high volumes of traffic in the valley (i.e., public safety, traffic control, parking assistance, restoration of impacts surrounding informal parking areas) would be reduced. The result would be a long-term, negligible to minor, adverse impact on parkwide operations.

### **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segment 1 would be reduced through reductions in the Little Yosemite Valley trailhead quota (from 150 to 100), closure of the Merced Lake High Sierra Camp, and wilderness campground modifications. The resulting decline in wilderness visitation would reduce the park's operational burden associated with visitation-related wilderness restoration. The long-term impact would be negligible and beneficial.

Under Alternative 4, there would be a 100% reduction in the Merced River corridor's wilderness lodging units. All 60 units and associated facilities at the Merced Lake High Sierra Camp would be removed. These actions would have a long-term, minor, beneficial impact on concessioner operations associated with managing and maintaining these facilities.

The park would reduce the total number of designated campsites within the corridor's wilderness. This change would result primarily from the decrease in designated camping at Little Yosemite Valley Backpackers Campground and removal of bear boxes (composting toilet remains). Designated camping at Moraine Dome would continue and dispersed camping at the Merced Lake Backpackers Campground would be expanded, but facilities would be reduced (i.e., flush toilets and wastewater system would be replaced with composting toilets and bear boxes removed). This would result in a long-term, negligible, beneficial impact on park operations associated with management and maintenance of these facilities.

Removal of the Merced Lake High Sierra Camp, and the visitor services associated therewith, would eliminate the need for employees to operate the camp. Such a reduction would contribute to the long-term, negligible, and beneficial impact on concessioner staffing operations. These actions would also

eliminate the need for and existence of housing associated with the camp's operation. As such, the proposed actions would not have an impact on concessioner employee housing demand within the Merced River corridor's wilderness.

The removal of infrastructure and restoration of these camps would require a temporary, yet substantial commitment of park staff time, resources, and equipment. The work would likely require several months to plan and execute, involve staff across several divisions, and require several pack crews and multiple helicopter flights. The short-term impact on park operations would be minor and adverse. However, the operational burden associated with seasonal set-up, weekly maintenance, and ongoing habitat restoration as a result of high visitation at and around these camps would be reduced with their conversion and removal. Thus, the long-term impact on park operations would be negligible to minor and beneficial.

**Segment 1 Impact Summary.** Actions to manage user capacities, land use, and facilities would have parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### *Impacts of Actions to Protect and Enhance River Values*

Projects proposed in Segment 2 to protect and enhance river values involve rerouting and revegetating a portion of the valley Loop Trail. The park also proposes to restore 10.9 acres of riparian ecosystem from which cabins were removed after being damaged by the 1997 flood. The work would likely take a few weeks to complete, but would not likely disrupt normal park management activities. The resulting impact to park operations would be short-term, negligible, and adverse. The project would benefit parkwide operations because it would lessen the need for future meadow restoration. However, these actions would also increase the need for ongoing monitoring and maintenance of the restoration areas. As such, the proposed actions would have a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 2 under Alternative 4 include: removing fill and constructing a boardwalk over meadow and wet areas at Ahwahnee Meadows; installing culverts beneath Northside Drive; removing 1,335 feet of Southside Drive, re-alignment of the road, reconfiguring Curry Orchard parking lot, and extending the Stoneman Meadow boardwalk; removing campsites and infrastructure from the 100-year floodplain and restoring 12 acres of floodplain and riparian habitat; and erecting fencing, signage, and boardwalks to redirect visitor traffic, and removing informal trails at El Capitan Meadow. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and restoration work would require at least 20 weeks of crew and equipment time over a period of at least two years. As a result, these projects are likely to disrupt other ongoing maintenance and restoration projects in the valley and beyond. The resulting impact on park operations would be short-term, parkwide, minor to moderate, and adverse.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values within Segment 2 under Alternative 4 include: relocating unimproved Camp 6 parking; placing large wood and engineered logjams along the base of Stoneman Bridge;

removing the Ahwahnee and Sugar Pine Bridges; and restoring these areas to natural conditions. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require approximately 30 weeks of crew and equipment time over a period of two years, during which other restoration and maintenance activities would be disrupted. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Actions to manage visitor use and facilities under Alternative 4, specifically those concerning vehicle access, would result in a 19% decrease in daily Yosemite Valley visitation, from approximately 20,900 to 17,000. Daytime visitation would decrease by nearly 4,300 (29%). However, due in part to increases in campground facilities, overnight visitation would increase by about 400 (7%). The resulting impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor-serving facilities would be long-term, minor, and beneficial.

Under Alternative 4, there would be an 20% net reduction in valley lodging units. This would be achieved through removal of units from Housekeeping Camp and Curry Village, bringing the total number of valley lodging units down to 823. These actions would have a long-term, minor, beneficial impact on concessioner operations associated with operating and maintaining these facilities.

The park would increase the total number of campsites within the valley to 701 (an increase of 50%). This increase would be largely due to the development of new campsites near Yosemite Lodge (west) and Camp 4 (east), as well as at Boys Town, Upper Pines Campground, Curry Village stables, and the former Upper River and Lower River campgrounds. This would result in a long-term, moderate, adverse impact on concessioner operations associated with managing and maintaining these facilities.

Concessioner employee housing within Yosemite Valley would be reduced by 20% — from 1,151 beds under Alternative 1 to 923 beds. This reduction would have a detrimental effect on the supply of housing within Segment 2. The demand for utilities would decrease with removal of employee housing and lodging units. Despite the increase in overnight visitation and addition of campgrounds, the net reduction in visitation would be expected to offset any associated increase in demand. With the decrease in staffing required for concessioner operations, the demand for valley administrative facilities would also be expected to decrease.

Construction activities under Alternative 4 would include the removal work described above, as well as parking improvements, new housing development at Yosemite Lodge, and new campsites at several locations. In addition, the park would undertake numerous actions to improve transit and pedestrian flows. The planning, demolition, design, construction, and restoration activities associated with this work would have a short-term, moderate, adverse impact on park operations. The park would also incur long-term, negligible, adverse operational burdens associated with the maintenance and operation of these facilities.

**Curry Village and Campground.** The park would retain 355 guest units and construct a new 40 site campground at Curry Village. The park would remove campsites from Lower Pines (15), North Pines (34), and Upper Pines (2). In addition, the park would discontinue commercial day rides from the



Curry Village Stables. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor, and adverse. Despite the installation of new campsites, facilities removal would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would improve the configuration of and on-grade pedestrian crossing at the Northside Drive-Yosemite Village Drive intersection, shift the parking area north and redevelop a portion of the former administrative footprint to accommodate 750 parking spaces, and install a new three-way intersection connecting the parking lot to Sentinel Drive to improve traffic flow and alleviate congestion. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor to moderate, and adverse. Increased parking and improved intersection performance would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 4 and Yosemite Lodge.** The park would design a pedestrian underpass, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour busses. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Increased parking and improved traffic conditions would have a long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, minor, beneficial impacts on park operations and facilities.

### **Segments 3 and 4: Merced River Gorge and El Portal**

#### ***Impacts of Actions to Protect and Enhance River Values***

Within Segment 4, the park would establish a 1-acre oak recruitment zone in the vicinity of Odgers fuel storage area and adjacent parking lots. Parking would be prohibited within the trees' drip lines, and new building construction would be prohibited within the oak recruitment zone. Development and implementation of such protective measures would have a short-term, negligible, adverse impact on normal staff operations. The consequent long-term impact on park operations associated with enforcement of these restrictions and monitoring the restoration areas would be negligible and adverse.

***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 3 and 4 involve the development of housing and campsites within Segment 4. These actions, in combination with those that would occur under Alternatives 2–6, would not be expected to have an appreciable impact on park visitation.

New high-density concessioner housing would be constructed in Rancheria, outside the 100-year floodplain. In addition, as previously noted, under each alternative new housing would also be constructed in El Portal Village Center. This would increase the total number of concessioner-assigned housing units within El Portal from 192 to 300. These actions would have a beneficial impact on new and existing employees of El Portal because they would increase housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would increase under Alternative 4. The park would experience a short-term, minor to moderate, adverse operational impact associated with the planning, design, relocation, and construction of the projects described above. These actions would also result in a long-term, minor, adverse impact on park operations associated with management and maintenance of the new facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would result in parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, adverse impacts on park operations and facilities.

**Segments 6 and 7: Wawona and Wawona Impoundment*****Impacts of Actions to Protect and Enhance River Values***

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 7 under Alternative 4 include the relocation of stock use campsites from sensitive resource areas to Wawona Stables. This work could require the use of heavy equipment and would require approximately one week of crew time. The resulting impacts on park operations would be parkwide, short-term, negligible, and adverse.

***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 6 and 7 involve the removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements within Segment 7. These actions, in combination with those that would occur under Alternatives 2–6, would be expected to effect a nominal decrease in overall visitation within Segment 7.

Implementation of Alternative 4 would not be expected to affect demand for employee housing within Segment 7. Demand for utilities and administrative facilities within Segment 7 would slightly decrease under Alternative 4. Fewer visitors would mean less draw upon the town's utilities. In addition, the

new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would be expected to include high-efficiency fixtures, further reducing the demand for utilities. The construction of new facilities would also reduce demand for administrative space within this segment. The park would experience a short-term, negligible to minor, adverse operational burden associated with the planning and execution of projects proposed under Alternative 4. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance.

**Wawona Campground.** Under Alternative 4, the park would reduce the size of the Wawona Campground. Twenty-seven campsites, or 28% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, negligible to minor, beneficial impact on park operations required to manage and maintain these facilities.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would result in parkwide, short-term, negligible, adverse impacts on park operations. These actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible, adverse impacts on park operations and facilities.

#### **Summary of Impacts from Alternative 4: Resource-based Visitor Experiences and Targeted Riverbank Restoration**

Under Alternative 4, park staff would carry out a substantial amount of restoration throughout the Merced River corridor. These actions would considerably reduce the long-term operational burden associated with ongoing incremental resource management and maintenance activities. In addition, the park would undertake a considerable number of actions related to transportation management and commercial services. For example, the park would implement a real-time traffic and parking management program, and reduce Yosemite Valley parking capacity. In addition, the park would substantially reduce the number of lodging units (-20%) but increase the number of campsites (50%) within the valley. These actions would decrease total Yosemite Valley visitation by an estimated 19%, while overnight visitation would increase. Concessioner-assigned housing would also decrease under Alternative 4, with the largest reduction seen in the valley, and a substantial increase in El Portal. Under Alternative 4, demands for administrative space, utilities, and housing would be expected to decrease parkwide. However, with the proposed shift in housing and facilities from the valley to El Portal, the latter would experience a considerable increase in demand for these facilities and services. The long-term impact on park operations and facilities would be minor, and beneficial.

#### **Cumulative Impacts from Alternative 4: Resource-based Visitor Experiences and Targeted Riverbank Restoration**

Cumulatively considerable projects that could affect park facilities and operations are the same as those identified in Alternative 2, and include past, present, and reasonably foreseeable actions in the Yosemite region.

### ***Overall Cumulative Impact from Alternative 4: Resource-based Visitor Experiences and Targeted Riverbank Restoration***

The cumulative impacts of Alternative 4 management measures, in combination with those common to Alternatives 2-6, would generally be beneficial. Past and present facilities improvements and upgrades would reduce the operational demands on park staff to maintain these assets. For the same reason, park operations would similarly benefit from past and present habitat restoration and resource management projects and plans. As previously noted, continued implementation of the *East Yosemite Valley Utilities Improvement Plan/EA* would further reduce demands for park utilities. As a result, the cumulative impact of Alternative 4 management measures, in light of past, present, and reasonably foreseeable future projects, would be long-term, minor to moderate, and beneficial.

### ***Environmental Consequences of Alternative 5: Enhanced Visitor Experiences and Essential Riverbank Restoration***

#### **All River Segments**

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 5, the park would implement a phased-in, adaptive day-use traffic and parking management program, which would utilize permits, fee structures, transit service expansion, and managed access and diversions. Development, implementation, and maintenance of the system would have a long-term, minor to moderate, adverse impact on park operations. Management of the system would require a long-term commitment of staff time and resources. However, once the program was operational, and as park staff was better able to regulate traffic throughout Yosemite Valley, the operational burdens associated with the present practice of managing high volumes of traffic in the valley (i.e., public safety, traffic control, parking assistance, and restoration of impacts surrounding informal parking areas) would be reduced. The result would be a long-term, minor, adverse impact on park operations.

#### **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segment 1 would not be expected to change appreciably under Alternative 5; wilderness access quotas would remain as under Alternative 1 (No Action) (150) and modifications to overnight accommodations would be nominal. As such, the park's operational burden associated with visitation-related wilderness restoration would remain similar to that of Alternative 1. The long-term impact would be negligible to minor and adverse.

Under Alternative 5, the Merced Lake High Sierra Camp would remain in operation and continue to host overnight guests and through-hikers during the summer months. However, the camp's 60 units would be reduced to 42. The operational burden associated with seasonal set-up, weekly maintenance, and habitat restoration necessary to address impacts of high visitation at and around these camps

would be slightly reduced from that of Alternative 1. The resulting impact would be long-term, negligible to minor, and adverse.

The park would not reduce the total number of designated campsites within the Merced River corridor's wilderness. Designated camping at Moraine Dome and Little Yosemite Valley Backpackers Campground would continue. The Merced Lake Backpackers Campground would remain. The long-term impact associated with maintenance of these new facilities, however reduced, would continue to be negligible and adverse.

The primary park concessioner would continue to experience a long-term, negligible, adverse impact associated with staffing the Merced Lake High Sierra Camp operations. The need for employee housing units for these staffers would also continue. As under Alternative 1, the camp would keep eight concessioner employee beds. As such, implementation of Alternative 5 would not be expected to affect concessioner employee housing demand within the corridor's wilderness segments.

The facilities removal and restoration activities that would occur under Alternative 5 would divert staff time and attention away from other ongoing projects. They would likely take several weeks to months to plan and execute, involve staff across several divisions, and require multiple helicopter flights. The short-term impact on park operations would be negligible to minor and adverse. The long-term operational impact associated with the monitoring and maintenance of these restoration areas would be negligible and adverse.

**Segment 1 Impact Summary:** Actions to manage user capacities, land use, and facilities would have parkwide, long-term, negligible, adverse impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### ***Impacts of Actions to Protect and Enhance River Values***

Projects proposed in Segment 2 to protect and enhance river values involve rerouting, revegetating, and constructing a boardwalk along a portion of the Valley Loop Trail. The park also proposes to restore 10.9 acres of riparian ecosystem from which cabins were removed after being damaged by the 1997 flood. The work would take several weeks to complete, but would not likely disrupt normal park management activities. The resulting impact to park operations would be short-term, and adverse. The project would benefit parkwide operations because it would lessen the need for future meadow restoration. However, these actions would also increase the need for ongoing monitoring and maintenance of the restoration areas. As such, the proposed actions would have a long-term, negligible, adverse impact on park operations.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 2 under Alternatives 5 include: removing fill and constructing a boardwalk over meadow and wet areas at Ahwahnee Meadows; installing culverts beneath Northside Drive; reconfiguring the Curry Orchard parking lot; removing campsites and infrastructure from the 100-year floodplain and restoring 6.5 acres of floodplain and riparian habitat; and erecting fencing, signage, and boardwalks to redirect visitor traffic, and removing informal trails at El Capitan Meadow. This work

would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and restoration work would require at least 28 weeks of crew and equipment time over a period of two years. As a result, these projects are likely to disrupt other ongoing maintenance and restoration projects in the valley and beyond. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values that would occur within Segment 2 under Alternative 5 include: relocating unimproved Camp 6 parking; removing the Sugar Pine Bridge; placing large wood and engineered logjams along the base of Stoneman Bridge; and improving trail connectivity and routing in the vicinity of the Ahwahnee Bridge. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require at least 16 weeks of crew and equipment time over a period of two years, during which other restoration and maintenance activities could be disrupted. The resulting impact on park operations would be short-term, parkwide, minor to moderate, and adverse.

#### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Actions to manage visitor use and facilities under Alternative 5, specifically those concerning vehicle access and overnight accommodations, would result in a 5% decrease in daily Yosemite Valley visitation, from approximately 20,900 under Alternative 1 to 19,900. Daytime visitation would decrease by nearly 2,000 (14%). However, due largely to increases in lodging and campground facilities, overnight visitation would increase by about 1,000 (16%). The resulting impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor-serving facilities would be long-term, minor to moderate, and adverse.

Under Alternative 5, there would be a 2% net increase in Yosemite Valley lodging units. This would largely result from the increase in units at Curry Village and removal of units from Housekeeping Camp, such that valley lodging units would increase to 1,053. These actions would have a long-term, negligible to minor, adverse impact on concessioner operations associated with operating and maintaining these facilities.

The park would increase the total number of campsites within the valley to 640 (an increase of 37%). This would result in a long-term, minor, adverse impact on concessioner operations associated with managing and maintaining these facilities.

Concessioner employee housing within the valley would be reduced by 16%—from 1,151 beds to 972 beds. Because additional staff would be required to accommodate increased overnight visitation, removal of these units would have a detrimental effect on the supply of housing within Segment 2. The demand for utilities would increase with the addition of lodging units and campsites, and the increase in visitation. The rise in overnight visitation would be expected to offset any capacity freed up by removal of employee housing. Nonetheless, with the decrease in staffing required for concessioner operations, the demand for valley administrative facilities would be expected to decrease.

Construction activities under Alternative 5 would include the removal work described above, as well as parking improvements, new housing development at Yosemite Lodge, and new camping facilities at several locations. In addition, the park would undertake numerous actions to improve transit and pedestrian flows. The planning, demolition, design, construction, and restoration activities associated with this work would have a short-term, moderate, adverse impact on park operations. The park would also incur long-term negligible adverse operational burdens associated with the maintenance and operation of these facilities.

**Curry Village and Campground.** The park would construct 98 hard-sided units at Boys Town, bringing the total number of new and retained units at Curry Village to 453. The park would remove campsites from Lower Pines (5), North Pines (14), and Upper Pines (2). In addition, the park would discontinue commercial day rides from the Curry Village Stables. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, minor to moderate, and adverse. Facilities removal and replacement of old guest units would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would construct a traffic circle at the intersection of Northside and Yosemite Village Drives, provide walkways leading to Yosemite Village, shift the parking area north and redevelop a portion of the former administrative footprint to accommodate 850 parking spaces, and install a new three-way intersection connecting the parking lot to Sentinel Drive. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Increased parking and intersection performance would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Camp 4 and Yosemite Lodge.** The park would design a pedestrian underpass, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 300 automobiles and 15 tour busses. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Increased parking and improved pedestrian crossing would have a long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities.

## Segments 3 and 4: Merced River Gorge and El Portal

### *Impacts of Actions to Protect and Enhance River Values*

Within Segment 4, the park would establish a 1-acre oak recruitment zone in the vicinity of Odgers fuel storage area and adjacent parking lots. Parking would be prohibited within the trees' drip lines, and new building construction would be prohibited within the oak recruitment zone. Development and implementation of such protective measures would have a short-term, negligible, adverse impact on normal staff operations. The consequent long-term impact on park operations associated with enforcement of these restrictions and monitoring the restoration areas would be negligible and adverse.

### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Visitor- and facilities-related actions that would occur within Segments 3 and 4 involve the development of housing and campsites within Segment 4. These actions, in combination with those that would occur under Alternatives 2–6, would not be expected to have an appreciable impact on park visitation.

New low- and medium-density concessioner housing would be constructed as infill development in Rancheria, outside the 100-year floodplain. In addition, as previously noted, under each alternative new housing would also be constructed in El Portal Village Center. This would increase the total number of concessioner-assigned housing units within El Portal from 192 to 288. These actions would have a beneficial impact on new and existing employees of El Portal because they would increase housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would increase under Alternative 5. The park would experience a short-term, minor to moderate, adverse operational impact associated with the planning, design, relocation, and construction of the projects described above. These actions would also result in a long-term, minor, adverse impact on park operations associated with management and maintenance of the new facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would result parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, adverse impacts on park operations and facilities.

## Segments 6 and 7: Wawona and Wawona Impoundment

### *Impacts of Actions to Protect and Enhance River Values*

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values within Segment 7 under Alternative 3 include the relocation of stock use campsites from sensitive resource areas to the Wawona Maintenance Yard. This work could require the use of heavy



equipment and would require approximately one week of crew time. The resulting impacts on park operations would be parkwide, short-term, negligible, and adverse.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 6 and 7 involve the removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements within Segment 7. These actions, in combination with those that would occur under Alternatives 2–6, would be expected to effect a nominal decrease in overall visitation within Segment 7.

Implementation of Alternative 5 would not be expected to affect demand for employee housing within Segment 7. Demand for utilities and administrative facilities within Segment 7 would slightly decrease under Alternative 5. Fewer visitors would mean less draw upon the town's utilities. In addition, the new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would be expected to include high-efficiency fixtures, further reducing the demand for utilities. The construction of new facilities would also reduce demand for administrative space within this segment. The park would experience a short-term, negligible to minor, adverse operational burden associated with the planning and execution of projects proposed under Alternative 5. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance.

**Wawona Campground.** Under Alternative 5, the park would reduce the size of the Wawona Campground. Thirteen campsites, or 13% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, negligible, beneficial impact on park operations required to manage and maintain these facilities.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would result in parkwide, short-term, negligible, adverse impacts on park operations. These actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible, adverse impacts on park operations and facilities.

### **Summary of Impacts from Alternative 5: Enhanced Visitor Experiences and Essential Riverbank Restoration**

Under Alternative 5, park staff would carry out a substantial amount of restoration throughout the Merced River corridor. These actions would considerably reduce the long-term operational burden associated with ongoing incremental resource management and maintenance activities. In addition, the park would undertake a considerable number of actions related to transportation management and commercial services. For example, the park would implement a real-time traffic and parking management program and day-use permit system, and increase Yosemite Valley parking capacity. In addition, the park would increase the number of lodging units (2%) and campsites (37%) within the valley. Nonetheless, overall valley visitation would fall under Alternative 5 by an estimated 5%, while overnight visitation would increase. Concessioner-assigned housing would also increase under Alternative 5, with a considerable shift in housing from the valley to El Portal. Under Alternative 5, demands for administrative space, utilities, and housing would be expected to increase parkwide. With

increased overnight valley visitation and the proposed shift in housing and facilities from the valley to El Portal, both would experience a considerable increase in demand for these facilities and services. Taken together, the actions proposed for Alternative 5 would have long-term, negligible to minor, beneficial impacts on park operations and facilities, mainly due to proactive habitat restoration and facilities management activities.

### **Cumulative Impacts from Alternative 5: Enhanced Visitor Experiences and Essential Riverbank Restoration**

Cumulatively considerable projects that could affect park facilities and operations are the same as those identified in Alternative 2, and include past, present, and reasonably foreseeable actions in the Yosemite region.

#### ***Overall Cumulative Impact from Alternative 5: Enhanced Visitor Experiences and Essential Riverbank Restoration***

The cumulative impacts of Alternative 5 management measures, in combination with those common to Alternatives 2-6, would generally be beneficial. Past and present facilities improvements and upgrades would reduce the operational demands on park staff to maintain these assets. For the same reason, park operations would similarly benefit from past and present habitat restoration and resource management projects and plans. As previously noted, continued implementation of the East Yosemite Valley Utilities Improvement Plan/EA would further reduce demands for park utilities. Nonetheless, the burdens of managing for such high levels of visitation would continue to have a detectable impact on park operations. As a result, the cumulative impact of Alternative 5 management measures, in light of past, present, and reasonably foreseeable future projects, would be long-term, minor, and beneficial.

### ***Environmental Consequences of Alternative 6: Diversified Visitor Experiences and Selective Riverbank Restoration***

#### **All River Segments**

##### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Under Alternative 6, the park would implement a phased, adaptive day-use traffic and parking management program, utilizing fee structures, transit service expansion, managed access and diversions, and eventually through use of a day-use parking permit system for the East Yosemite Valley. Development, implementation, and maintenance of the system would have a long-term, moderate, adverse impact on park operations. Management of the system would require a long-term commitment of staff time and resources. However, once the program is operational, and as park staff is better able to regulate traffic entering and traveling throughout Yosemite Valley, the operational burdens associated with the present practice of managing high volumes of traffic in the valley (i.e., public safety, traffic control, parking assistance, and restoration of impacts surrounding informal parking areas) would be reduced. The result would be a long-term, minor to moderate, adverse impact on park operations.

## **Segments 1, 5, and 8: Merced River Above Nevada Fall, and Merced River Above and Below Wawona**

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitation within Segment 1 would not be expected to change appreciably under Alternative 6; wilderness access quotas would remain as under Alternative 1 (No Action) (150) and modifications to overnight accommodations would be nominal. As such, the park's operational burden associated with visitation-related wilderness restoration would remain similar to that of Alternative 1. The long-term impact would be negligible to minor and adverse.

Under Alternative 6, the Merced Lake High Sierra Camp would remain in operation and continue to host overnight guests and through-hikers during the summer months. The camp's 60 units would remain. The operational burden associated with seasonal set-up, weekly maintenance, and habitat restoration necessary to address impacts of high visitation at and around these camps would continue as under Alternative 1. The resulting impact would be long-term, minor, and adverse.

The park would not reduce the total number of designated campsites within the Merced River corridor's wilderness. The long-term impact associated with maintenance of these new facilities, however reduced, would still be negligible and adverse.

The primary park concessioner would continue to experience a long-term, negligible, adverse impact associated with staffing the Merced Lake High Sierra Camp operations. The need for employee housing units for these staffers would also continue. As under Alternative 1, the camp would keep eight concessioner employee beds. As such, implementation of Alternative 6 would not be expected to affect concessioner employee housing demand within the corridor's wilderness segments.

**Segment 1 Impact Summary:** Actions to manage user capacities, land use, and facilities would have parkwide, long-term, negligible to minor, adverse impacts on park operations and facilities.

## **Segment 2: Yosemite Valley**

### ***Impacts of Actions to Protect and Enhance River Values***

Projects proposed in Segment 2 to protect and enhance river values involve removing buildings from the Yosemite Lodge area, and rerouting, revegetating, and constructing a boardwalk along a portion of the Valley Loop Trail. These projects would take several weeks to a few months to complete, during which time normal park management activities could be disrupted. The resulting impact to park operations would be short-term, negligible to minor, and adverse. The project would also benefit parkwide operations because it would lessen the need for future meadow restoration. However, these actions would also increase the need for ongoing monitoring and maintenance of the restoration areas. As such, the proposed actions would have a long-term, negligible to minor, adverse impact on park operations.

Under this alternative, Sugar Pine Bridge would be retained, engineered log jams and large wood installed at its base, and its condition monitored. Should long-term monitoring reveal mitigation

measures are not sufficient, the park may undertake more aggressive management action, including removal of the bridge. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require up to 15 weeks of crew and equipment time over a period of two years, during which other restoration and maintenance activities could be disrupted. The resulting impact on park operations would be short-term, parkwide, minor to moderate, and adverse.

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternative 6 include: removing fill and constructing a boardwalk over meadow and wet areas at Ahwahnee Meadows; installing culverts beneath Northside Drive; reconfiguring the Curry Orchard Parking lot; removing campsites and infrastructure from the 100-year floodplain and restoring 6.5 acres of floodplain and riparian habitat; and erecting fencing, signage, and boardwalks to redirect visitor traffic, and removing informal trails and selectively removing conifers at El Capitan Meadow. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and restoration work would require at least 28 weeks of crew and equipment time over a period of at least two years. As a result, these projects are likely to disrupt other ongoing maintenance and restoration projects in the valley and beyond. The resulting impact on park operations would be short-term, parkwide, moderate, and adverse.

**Hydrologic/Geologic Resource Actions.** Specific projects to protect and enhance the river's hydrologic and geologic values within Segment 2 under Alternative 6 include: relocating unimproved Camp 6 parking and placing large wood and engineered logjams along the bases of riverbanks upstream from Sugar Pine, Ahwahnee, and Stoneman Bridges. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks. The demolition, transport, disposal, and revegetation activities associated with this work would require approximately 16 weeks of crew and equipment time over a period of two years, during which other restoration and maintenance activities could be disrupted. The resulting impact on park operations would be short-term, parkwide, minor to moderate, and adverse.

### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Actions to manage visitor use and facilities under Alternative 6, specifically those concerning vehicle access and overnight accommodations, would result in a 4% increase in daily Yosemite Valley visitation, from approximately 20,900 under Alternative 1 to 21,800. Daytime visitation would decrease by nearly 1,100 (7%). However, due largely to increases in lodging and campground facilities, overnight visitation would increase by about 2,000 (33%). The resulting impact on staffing and other resources required to restore areas affected by high visitor use, manage traffic, and maintain visitor serving facilities would be long-term, minor to moderate, and adverse.

Under Alternative 6, there would be a 21% net increase in Yosemite Valley lodging units. This would largely result from the substantial increase in units at Yosemite Lodge and Curry Village, along with a slight reduction in Housekeeping Camp units, such that valley lodging units would increase to 1,248. These actions would have a long-term, minor to moderate, adverse impact on concessioner operations associated with operating and maintaining these facilities.

The park would increase the total number of campsites within the valley to 739 (an increase of 59%). This would result in a long-term, moderate, adverse operational burden to park staff associated with maintenance and operation of these facilities.

Concessioner employee housing within Yosemite Valley would be reduced by 16% — from 1,151 beds to 972 beds. The demand for utilities would increase with the lodging units and campgrounds, and associated increase in overnight visitation. Despite relocation of the Concessioner General Office, the increased staffing necessary to accommodate such an increase in visitation may necessitate additional administrative facilities within the valley. As such, the demand for administrative space within the valley under Alternative 6 would be expected to increase.

Construction activities under Alternative 6 would include the removal activities described above, as well as parking improvements at Curry Village and in the vicinity of Yosemite Lodge;; new housing development at Yosemite Lodge; and new camping facilities at several locations. In addition, the park would undertake numerous actions to improve transit and pedestrian flows. The planning, demolition, design, construction, and restoration activities associated with this work would impose a short-term, moderate, adverse impact on park operations. The park would also incur long-term, minor, adverse operational burdens associated with the maintenance and operation of these facilities.

**Curry Village and Campground.** The park would construct 98 hard-sided units at Boys Town, bringing the total number of new and retained units at Curry Village to 453. The park would remove campsites from Lower Pines (5), North Pines (14), and Upper Pines (2). In addition, the park would discontinue commercial day rides from the Curry Village Stables. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Facilities removal and replacement of old guest units would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced maintenance and management burdens.

**Camp 6 and Yosemite Village.** The park would construct a pedestrian underpass and two roundabouts, shift the parking area north and redevelop a portion of the former administrative footprint to accommodate 850 parking spaces, and install a new three-way intersection connecting the parking lot to Sentinel Drive to improve traffic flow and alleviate congestion. The Concessioner Maintenance and Warehouse building would be remodeled to accommodate Concessioner General Office functions. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Increased parking and improved traffic conditions would have a parkwide, long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Camp 4 and Yosemite Lodge.** The park would design a pedestrian underpass, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three busses, and redevelop an area west of Yosemite Lodge, including the area from which cabins were removed after being damaged by the 1997 flood, to provide an additional parking for 300 automobiles and 15 tour busses. The planning, design, contracting, monitoring, restoration, and maintenance associated

with these activities would require the involvement of staff across several park divisions. The resulting impact on park operations would be parkwide, short-term, moderate, and adverse. Increased parking and improved traffic conditions would have a long-term, negligible, beneficial impact on park operations through reduced transportation management burdens.

**Segment 2 Impact Summary:** Actions to protect and enhance river values would result parkwide, long-term, negligible to minor, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible to minor, adverse impacts on park operations and facilities.

### **Segments 3 and 4: Merced River Gorge and El Portal**

#### ***Impacts of Actions to Protect and Enhance River Values***

Within Segment 4, the park would establish a 1-acre oak recruitment zone in the vicinity of Odgers fuel storage area and adjacent parking lots. Parking would be prohibited within the trees' drip lines, and new building construction would be prohibited within the oak recruitment zone. Development and implementation of such protective measures, including the removal of nonnative fill, decompaction of soils, and replanting the oak tree understories in the vicinity of these zones, would have a short-term, negligible, adverse impact on normal staff operations. The consequent long-term impact on park operations associated with enforcement of these restrictions and monitoring the restoration areas would be negligible and adverse.

#### ***Impacts of Actions to Manage User Capacity, Land Use, and Facilities***

Visitor- and facilities-related actions that would occur within Segments 3 and 4 involve the development of housing and campsites within Segment 4. These actions, in combination with those that would occur under Alternatives 2–6, would not be expected to have an appreciable impact on park visitation.

New high-density concessioner housing would be constructed in Rancheria and Abbieville, outside the 100-year floodplain. In addition, as previously noted, under each alternative new housing would also be constructed in El Portal Village Center. This would increase the total number of concessioner-assigned housing units within El Portal from 192 to 506. These actions would have a beneficial impact on new and existing employees of El Portal because they would increase housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would increase under Alternative 6. The park would experience a short-term, moderate, adverse operational impact associated with the planning, design, relocation, and construction of the projects described above. These actions would also result in a long-term, minor, adverse impact on park operations associated with management and maintenance of the new facilities; and the law enforcement and emergency medical services to accommodate the resulting increase in residential occupants.

**Segments 3 & 4 Impact Summary:** Actions to protect and enhance river values would result parkwide, long-term, negligible, adverse impacts on park operations. Actions to manage user capacities, land use, and facilities would have parkwide, long-term, minor, adverse impacts on park operations and facilities.

## **Segments 6 and 7: Wawona and Wawona Impoundment**

### *Impacts of Actions to Protect and Enhance River Values*

**Biological Resource Actions.** Specific projects to protect and enhance the river's biological values that would occur within Segment 7 under Alternative 6 include the relocation of stock use campsites from sensitive resource areas to Wawona Stables. This work could require the use of heavy equipment and would require approximately one week of crew time. The resulting impacts on park operations would be parkwide, short-term, negligible, and adverse.

### *Impacts of Actions to Manage User Capacity, Land Use, and Facilities*

Visitor- and facilities-related actions that would occur within Segments 6 and 7 involve the removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements within Segment 7. These actions, in combination with those that would occur under Alternatives 2–6, would be expected to effect a nominal decrease in overall visitation within Segment 7.

Implementation of Alternative 6 would not be expected to affect demand for employee housing within Segment 7. Demand for utilities and administrative facilities within Segment 7 would slightly decrease under Alternative 6. Fewer visitors would mean less draw upon the town's utilities. In addition, the new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would be expected to include high-efficiency fixtures, further reducing the demand for utilities. The construction of new facilities would also reduce demand for administrative space within this segment. The park would experience a short-term, negligible to minor, adverse operational burden associated with the planning and execution of projects proposed under Alternative 6. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance.

**Wawona Campground.** Under Alternative 6, the park would reduce the size of the Wawona Campground. Thirteen campsites, or 13% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, negligible, beneficial impact on park operations required to manage and maintain these facilities.

**Segments 6 & 7 Impact Summary:** Actions to protect and enhance river values would result in parkwide, short-term, negligible, adverse impacts on park operations. These actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would also have parkwide, long-term, negligible, adverse impacts on park operations and facilities.

**Summary of Impacts from Alternative 6: Diversified Visitor Experiences and Selective Riverbank Restoration**

Under Alternative 6, park staff would carry out a substantial amount of restoration throughout the Merced River corridor. These actions would considerably reduce the long-term operational burden associated with ongoing incremental resource management and maintenance activities. In addition, the park would undertake a considerable number of actions related to transportation management and commercial services. The park also would increase the number of lodging units (21%) and campsites (59%) within Yosemite Valley. These actions would cause overall valley visitation to rise by an estimated 4%, due entirely to a substantial increase in overnight visitation (daytime visitation would continue to fall under Alternative 6). Concessioner-assigned housing would also increase under Alternative 6, with a substantial shift in housing from the valley to El Portal. Demands for administrative space, utilities, and housing would be expected to increase parkwide. However, with increased valley visitation and the proposed shift in housing and facilities from the valley to El Portal, both would experience a substantial increase in demand for these facilities and services. The long-term impacts on park operations and facilities would be negligible to minor, and adverse.

**Cumulative Impacts from Alternative 6: Diversified Visitor Experiences and Selective Riverbank Restoration**

Cumulatively considerable projects that could affect park facilities and operations are the same as those identified in Alternative 2, and include past, present, and reasonably foreseeable actions in the Yosemite region.

***Overall Cumulative Impact from Alternative 6: Diversified Visitor Experiences and Selective Riverbank Restoration***

The cumulative impacts of Alternative 6 management measures, in combination with those common to Alternatives 2-6, would generally be beneficial. Past and present facilities improvements and upgrades would reduce the operational demands on park staff to maintain these assets. For the same reason, park operations would similarly benefit from past and present habitat restoration and resource management projects and plans. As previously noted, continued implementation of the *East Yosemite Valley Utilities Improvement Plan/EA* would further reduce demands for park utilities. Nonetheless, the burdens of managing for such high levels of visitation would continue to have a detectable impact on park operations. As a result, the cumulative impact of Alternative 6 management measures, in light of past, present, and reasonably foreseeable future projects, would be long-term, negligible and beneficial.