MERCED WILD AND SCENIC RIVER FINAL COMPREHENSIVE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Volume 2: Chapters 9-13 and Appendices

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ANALYSIS TOPICS: SOCIOCULTURAL RESOURCES

Scenic Resources

Affected Environment

Regulatory Framework

Scenic views from nearly all lands in the Merced River corridor are distinct. Scenic quality is a core value embedded in the National Park Service (NPS) Organic Act of 1916:

> "*Federal areas known as national parks . . . which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.*" (NPS Organic Act, 16 USC 1)

The Yosemite Land Grant of 1864 legislation granted the Yosemite Valley and the Mariposa Grove of Big Trees from the federal government to the State of California "upon the express conditions that the premises shall be held for public use, resort, and recreation; inalienable for all time." This was the first time land in the United States was preserved for its scenic values and for public benefit.

The visual landscape factored prominently in the decision to designate Yosemite as a national park and is one of the primary resources that the NPS is charged with protecting. As such, the NPS has taken the approach of analyzing potential impacts on visual resources by considering these inherent resources to be self-evidently valuable, and that the crux of any analysis should focus on how visitors to the park experience these resources. Following this principle, the NPS established policies and regulations, as described above, to protect visual resources, including efforts to characterize and catalog important scenic landscapes. The NPS has further developed these policies by identifying important scenic resources and establishing a framework for protecting them, including restrictions on development of human-made structures in visually important areas. Today, although structures and infrastructure intrude into some scenic views from the main stem Merced River and South Fork Merced River, or views to the river (such as the roads near the river in Yosemite Valley), the area is largely pristine and human-made features do not dominate, even in the landscapes where they are visible.

The 1980 *Yosemite General Management Plan* specifies the following management objectives to preserve, protect, and restore scenic resources:

- Identify the major scenic resources and the places from which they are viewed.
- Provide for the preservation or protection of existing scenic resource and viewing stations.
- Provide for historic views through vista clearing.
- Permit only those levels and types of use that are compatible with the preservation or protection of the scenic resources and with the quality of the viewing experience.

Tiered from the *Yosemite General Management Plan,* the final *Scenic Vista Management Plan for Yosemite National Park* (*Scenic Vista Management Plan*) (NPS 2011d) provides a systematic program for documenting, protecting, and reestablishing important viewpoints and vistas outside of designated Wilderness, consistent with the natural processes and human influence that created them.

The 2005 *A Sense of Place, Design Guidelines for Yosemite Valley* provide a framework for describing appropriateness of architectural and landscape character of new buildings, site work, and alterations. In general, the goals of the Design Guidelines include:

- Retention of natural site character, including setting, materials, and ecological processes.
- Design new buildings and facilities to blend with the natural environment, emphasizing non-intrusive design. They are sensitive to the environmental capacity of the site to absorb modifications. Facilities fit in with their sites rather than dominate them. Buildings are subordinate to the environment.
- Compatibility of structures and facilities with the cultural context and character in which they are located and protection of cultural integrity.
- Coordination and integration of the design of individual structures with those of the site plan as a whole.
- Enhancement of unifying architectural and landscape themes and elements within defined areas throughout Yosemite Valley.
- Emphasis on simplicity and restraint in design and respect for past building character, traditions, and practices.
- Recognition of the principles of rustic design used by previous designers, identification of those who retain validity today, and contemporary interpretation of those principles.

The detailed guidelines sections of *A Sense of Place* provide direction as to which design strategies and themes may be suitable for particular areas, including: Yosemite Village; Curry Village; the Ahwahnee; Yosemite Lodge; campground, Camp 4, and Housekeeping Camp; and day-use areas, the Indian Cultural Center, LeConte Memorial Lodge, Happy Isles, and shuttle bus stops.

Regional Scenic Context

The scenery of Yosemite is one of its most significant resources and is largely responsible for the high visitation of the park by people from around the world. The 2009 summer visitor study indicated that the most common visitor activity was viewing scenery (93%) and the primary activity for 41% of visitor groups was also viewing scenery (Blotkamp et al. 2010). The 2008 winter visitor study indicated that for 67% of visitors, interest in seeing Yosemite scenery in wintertime was the most common factor affecting their decision to visit the park. The most common visitor activities were viewing scenery/taking a scenic drive (84%), taking photographs/painting/drawing (73%), and day hiking (35%) (Le et al. 2008).

As described in the "American Indian Traditional Cultural Resources" subsection later in this chapter, American Indian tribes and groups assign strong spiritual value to the Merced River and Yosemite Valley, attaching names and stories to geologic and other features in the river corridor. Since the first explorations and descriptions of the Valley by Euro-Americans in the mid-19th century, views of the pastoral Valley juxtaposed with towering geologic features and dramatic waterfalls have been recognized as outstanding resources of Yosemite Valley. Indeed, the beauty of the Yosemite landscape came to the attention of the nation largely through the early writings, paintings, and photographs produced by nationally recognized artists and visitors to the region, whose inspiration in many ways influenced the U.S. Congressional legislation, leading to the designation of Yosemite as a place worthy of preservation. The scenic resources of Yosemite have a high degree of cultural significance. Most of the quintessential views into and from the Valley are iconic and are reflected in the works of artists including Albert Bierstadt, Ansel Adams, Thomas Moran, and Myron Hunt.

The entire park, including the Wilderness and other areas outside Yosemite Valley, remains a favorite subject for professional and amateur artists, photographers, and writers, whose work continues to communicate to visitors and nonvisitors alike the unique scenic resource values of the park.

Scenic views from nearly all lands in the Merced River corridor include steep valleys and canyon walls, clear air, spectacular rock formations, and panoramic views, which combine to offer a wealth of visual resources nearly unsurpassed in the United States. As people move through the varied topography and vegetation along sections of the valleys and canyons that frame the Merced River, they experience a varied sequence of visual resources that provide a cumulative visual experience that is unique and above and beyond that of enjoying any one single viewpoint. This experience involves the interaction of multiple elements in relation to each other: the juxtaposition of individual features with the foreground and background, the interface of different surfaces, and the interplay of light reflecting off the different colors and textures of the elements making up the visual landscape.

Wildfire suppression practices initiated in the early 1900s have changed vegetation patterns from open, park-like vistas to more dense vegetation that have restricted views. In addition, historic wildfire suppression practices have resulted in catastrophic fires that affect scenic views. Vegetation changes that have affected scenic viewpoints are discussed further below, by segment.

Segment 1: Merced River Above Nevada Fall

Visual resources along this segment are less studied than those in Yosemite Valley and other developed areas, but exhibit equivalent scenic resource value. The scenery of this wilderness segment of the river is characterized by dramatic, glacially carved canyons; montane lakes framed by steeply sloping and sparsely vegetated granite rock faces; and meandering creeks flowing through broad pristine meadows. Scenic landmarks visible from the river and its band, and that contribute to this segment's scenic outstandingly remarkable value (ORV), include Washburn and Merced Lakes (see Photo SCN-1), Echo Valley, Bunnell Point, and Little Yosemite Valley, and many other named and unnamed scenic landmarks.

Photo SCN-1: Merced Lake – 2010 (Yochim 2010)

This long river segment of great visual variety, with its largely uncompromised natural setting, provides diverse, exceptional scenery, all with the river in the foreground. Human-made features in this segment are relatively few. Moreover, the comparatively low visitor use in Segment 1 enhances its scenic quality. Noteworthy human-made features visible in the river corridor are generally limited to the Merced Lake High Sierra Camp (see Photos SCN-2 and SCN-3) and the composting toilet at Little Yosemite Valley Campground. The Little Yosemite and Merced Lake Ranger Stations are also visible from the river corridor.

Photo SCN-2: Merced Lake High Sierra Camp – 2010 (Yochim 2010)

Photo SCN-3: Merced Lake High Sierra Camp – 2010 (Yochim 2010)

Other factors that may influence the area's aesthetic character include regional air pollution (e.g., haze), which can limit visibility during the summer (NPS and Colorado State University 2002); and crowding near the backcountry designated camping areas as viewed in the foreground of scenic views or views of the river, which operate near capacity all summer. Despite the presence of existing structures, views from the river and trails along Segment 1 continue to have high aesthetic value.

Segment 2: Yosemite Valley

The Merced River enters Yosemite Valley at Nevada Fall, flows through Emerald Pool, then over Vernal Fall and through Happy Isles. Once in the flat Valley, the Merced River provides the foreground to many of Yosemite's most famous landmarks. From the river and its banks, views consist of Yosemite Falls, Bridalveil Fall, El Capitan, Half Dome, and other named and unnamed parts of the cliffs and hanging valleys rimming the Valley (see Photos SCN-4 and SCN-5). Meandering through a sequence of compound oxbows, wetlands, and meadows, the river and its related features provide broadened panoramas. Throughout the Valley, views from the river and its banks encompass the lower montane forest as it rises up to sheer rock faces of granite cliffs and talus slopes, with a flat valley bottom serving as a contrasting foreground. The juxtaposition of granite domes and waterfalls is unique, as is the concentration of river-related views found in the Valley.

Photo SCN-4: El Capitan – 2009 (Yochim 2009)

Photo SCN-5: Half Dome – 2010 (Yochim 2010)

During development of the *Yosemite General Management Plan* in the late 1970s, the NPS conducted an analysis of existing and historic viewing conditions in Yosemite Valley and identified the landscape features most visitors look for and are able to distinguish (NPS 1980). The study found the 11 most important features in the Valley to be Half Dome, Yosemite Falls, El Capitan, Bridalveil Fall, Three Brothers, Cathedral Rocks and Spires, Sentinel Rock, Glacier Point, North Dome, Washington Column, and Royal Arches. The study also evaluated all points from which these features could be seen (assuming no vegetation or structures obstructed the view) to establish the scenic viewing potential of different locations on the Valley

floor. Existing viewpoints were identified, and the quality of their views and their proximity to roads and trails were noted. All of the identified "most important features" included in the *Yosemite General Management Plan* analysis are visible from various sections of the Merced River through Yosemite Valley.

The viewpoint analysis conducted for the *Yosemite General Management Plan* identified areas in Yosemite Valley that were consistently selected by eminent early photographers and painters as the best areas to pursue their activities. The Merced River is featured prominently in many representations of the Valley as both a foreground subject in the river corridor and a scenic feature from outside the river corridor. When the existing and historical viewpoints were established for the *Yosemite General Management Plan* viewpoint analysis, Yosemite Valley was classified according to the following criteria:

A-Scenic: Areas included in scenic views commonly chosen by eminent early photographers and painters, or included in the most significant scenic views that exist today (includes all meadows and the entire length of the Merced River in the Valley).

B-Scenic: Areas included in scenic views less commonly chosen by historic photographers and painters, or that compose less-significant modern views based on park management observations.

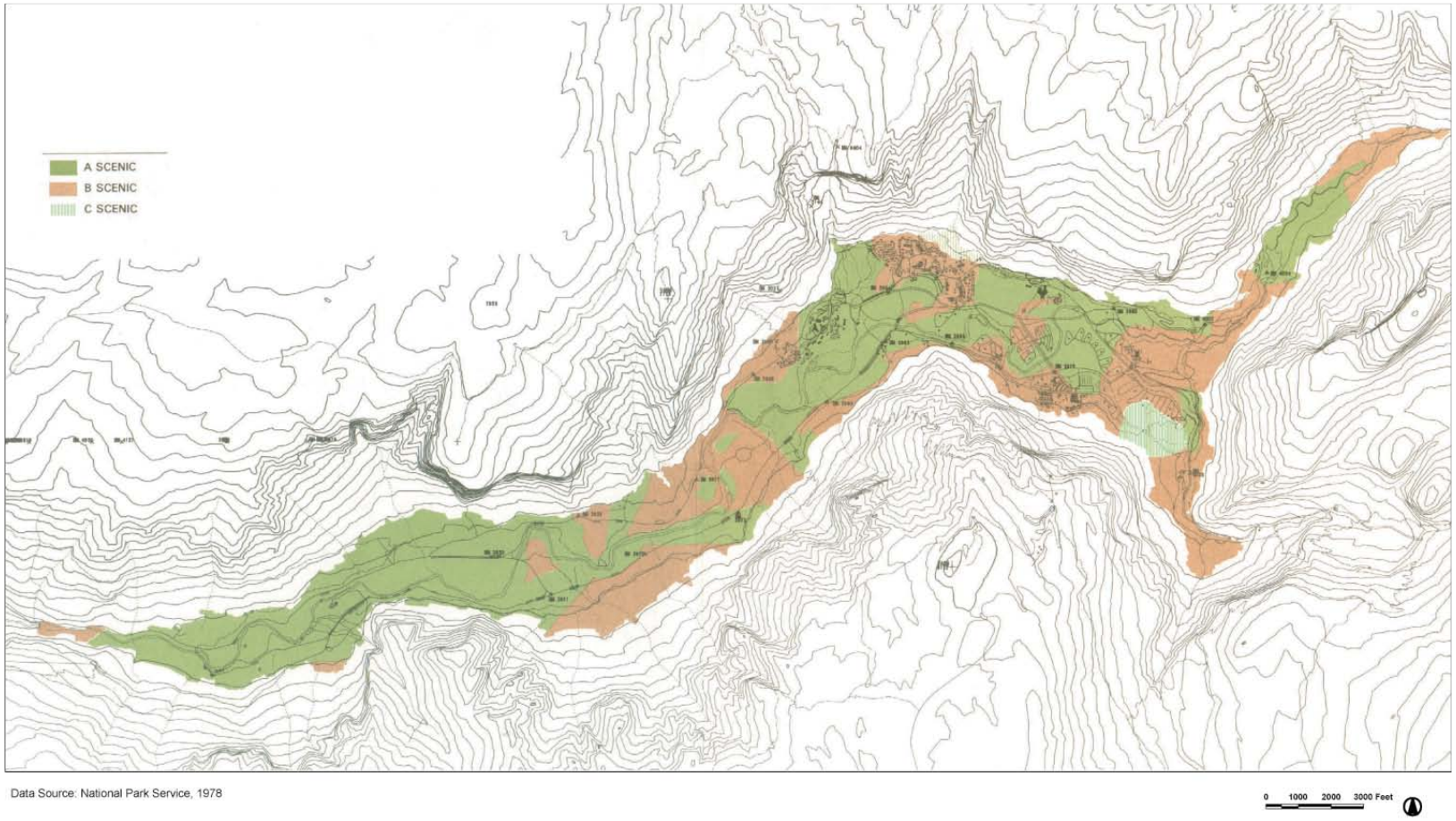
C-Scenic: Areas of minor scenic quality and areas that can absorb visual intrusion without detracting from either primary or secondary views.

The viewpoint analysis considered potential opportunities, as well as existing and historic viewpoints, and resulted in the development of the Yosemite Valley Scenic Analysis map (see Figure 9-38). The acreage of the classification areas is as follows: 1,800 acres classified as A-Scenic, 1,116 acres classified as B-Scenic, and 73 acres classified as C-Scenic. In these areas, the study found visual intrusions resulting from human-made features and vegetation affected views, and the major visual intrusions were roads and traffic through Ahwahnee Meadow, Stoneman Meadow, and other meadows when viewing Half Dome and other important features of Yosemite Valley from the Valley floor (including from lands in the Merced River corridor). Other major intrusions into the scenic beauty of the Valley included NPS and concessioner maintenance and warehouse facilities, Camp 6, Housekeeping Camp, and Curry Village (NPS 1980).

Views from trails, bridges, and vista points throughout Yosemite Valley continue to retain high aesthetic value. However, the built and natural environments have changed somewhat since the river was designated as Wild and Scenic and the Yosemite Valley segment was classified as Recreational. These changes include those associated with damaged and removed structures, meadow and riparian conditions, park visitation patterns, and altered conditions at scenic viewpoints, as described below.

The January 1997 flood caused perhaps the most significant change in views across the Yosemite Valley segment since completion of the viewpoint analysis. The flood damaged or destroyed approximately half of the lodging units at Yosemite Lodge (which were subsequently removed) as well as many campgrounds in the Merced River floodplain. Other more recent changes to the human-made environment include installation of curbing along Northside and Southside Drives, which reduced the number of cars that could be parked in the foreground of scenic resource views; completion of the Yosemite Falls project, which removed idling buses from distant views of the falls; replacement of Sentinel Bridge; and removal of employee housing (tent cabins) at Yosemite Lodge.

Over the past 20 years, the park has undertaken a number of meadow restoration projects, including the construction of meadow boardwalks, planting native vegetation, removing nonnative vegetation, and implementing monitoring programs. While meadow conditions continue to experience damage associated with ongoing informal trail use, soil disturbance, etc., overall meadow conditions have improved; as a result,



SOURCE: NPS, 1978

Figure 9-38
Yosemite Valley Scenic Analysis

direct views of meadows as well as the contribution of foreground meadow views to iconic scenic vistas have improved as well. Geologic and hydrologic processes of the Merced River are affected by bridges with openings too small to accommodate spring floods, resulting in bank erosion which affects views of the river or other scenic resources where eroded areas are seen in the foreground. In addition, vegetation trampling associated with visitor access to river points also causes bank erosion. Both actions affect direct views of the river and long-range iconic views where the river is visible in the foreground (see Photo SCN-6).

Photo SCN-6: Informal trails along Merced River riverbank – 2010 (ESA 2010)

The *Scenic Vista Management Plan* describes vegetation changes that have affected scenic viewpoints, rates and ranks the quality of viewpoints, and defines limits on management actions based on ecological conditions. The *Scenic Vista Management Plan* (NPS 2011d) prioritizes sites based on a visual resource assessment. These assessments include scores (compiled points assigned to vividness, uniqueness, access and intactness) for vista points as of 2009. Scores of 10 to 18 (the highest possible) are considered "high value," scores above 7 to 9.99 are considered "medium value," and scores of 7 and below are considered "low value." The assessment results for sites in the Merced River corridor and for sites that provide views of the river and river-dependent resources are included in Appendix H. The assessment describes the iconic features visible from each vista point and provides recommendations for vegetation management actions that would improve scenic views. The study found that vegetation currently obstructs scenic views at many of the Valley (Segment 2) vista points due to conifer encroachment in the meadows. Scenic vistas can also be obscured by regional air pollution, which results in occasional haze during the summer (NPS and Colorado State University 2002). It is noted that specific initial management actions for vista points in or near the Tuolumne River Wild and Scenic River corridor or the Merced River Wild and Scenic River corridor will be analyzed and directed by the respective river plan. No actions will be taken on vista points within either Wild and Scenic River corridor until a Record of Decision (ROD) is signed for the respective river plans.

While a substantial number of structures were removed from Segment 2 following the January 1997 flood, and several restoration projects have been completed, a number of visual intrusions identified in the *Yosemite General Management Plan* remain throughout the Valley, including traffic, parking, and crowding at popular visitor attraction sites; roads and traffic through Ahwahnee, Stoneman, and other meadows; NPS and concessioner maintenance and warehouse facilities; Housekeeping Camp; and Cathedral Beach Picnic Area.

Segment 3: Merced River Gorge

Visual resources in the V-shaped Merced River gorge downstream from Yosemite Valley are somewhat limited because of the steep terrain and forest cover. Important views from the Merced River or its banks in the gorge include panoramic views of the steep walls and rock features that define the gorge, such as Pulpit

Rock, the Rostrum, and Elephant Rock, as well as the Cascades and other spectacular rapids among giant boulders.

Roadway pullouts along Segment 3 allow for short- and long-range views of the river (see Photo SCN-7). The river and Cascades Fall are intermittently visible from vehicles traveling along El Portal Road and Big Oak Flat Road. Some structures in the gorge do intrude into scenic views of Segment 3, such as the Cascades Powerhouse. However, these structures do not dominate the natural landscape from any viewpoint.

With the exception of El Portal Road and the structures described above, there are few visual intrusions along Segment 3. Views from the river and roads in the Merced River gorge continue to have high aesthetic value. However, regional air pollution periodically results in haze during the summer, which can limit views.

Photo SCN-7: Merced River Gorge – 2010 (Yochim 2010)

Segment 4: El Portal

As the river gorge widens into the El Portal area, views are slightly expanded. As in Yosemite Valley and the Merced River gorge, the canyon walls are still steep in El Portal. No formal visual resource studies have been conducted for this portion of the Merced River, and the landscape viewed from in the Merced River corridor consists primarily of the river and the canyon walls. Because the vegetation has changed from a Sierran mixed conifer to oak woodland in the lower part of the Gorge, and because the canyon walls illustrate the geologic transition from granite to metasedimentary bedrock, the El Portal segment provides scenery that is different from other parts of the Merced River corridor in Yosemite. Distinct views of Chinquapin Fall to the east of El Portal are visible from several locations in Segment 4. Human-made structures (including stores, housing, a fuel station, a trailer village, park administrative facilities, aboveground utilities, abandoned infrastructure, and riprap) and Highway 140 are adjacent to the river and some of these structures contrast in color, materials, and form, and/or lack screening (trees) from views of the river.

Segments 5 and 8: South Fork Merced River Above and Below Wawona

The South Fork Merced River above and below Wawona is largely inaccessible, with just a few trail crossings above Wawona and none below (see Photos SCN-8 and SCN-9). While no formal visual resource studies have been conducted for this portion of the river, the wilderness segments of the South Fork Merced River remain largely natural and undisturbed. As discussed in the previous sections, summer haze can also limit views to and in Segments 5 and 8.

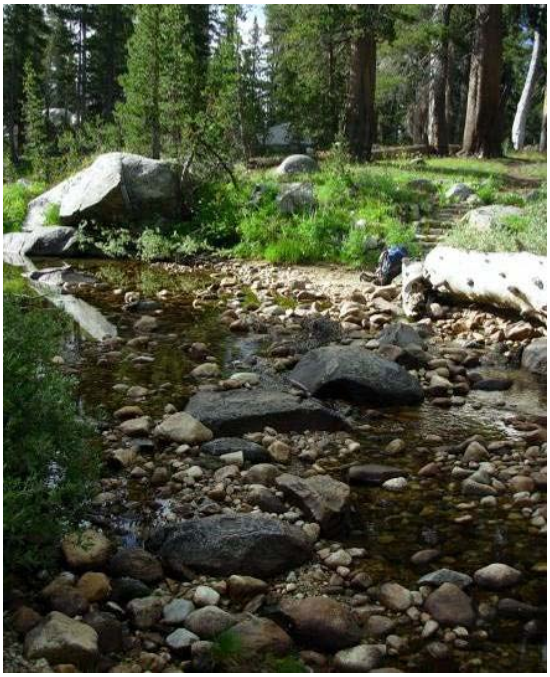


Photo SCN-8: South Fork Merced River above Wawona Crossing – 2010 (Yochim 2010)

Photo SCN-9: South Fork Merced River – 2010 (Yochim 2010)

Scenery that can be directly viewed from in the river corridor above Wawona is generally limited to the South Fork Merced River itself at trail crossings, as well as longer-range views from the trails to Breeze Lake, Chain Lakes, Buck Camp, and Wawona Point areas (see Photo SCN-10). Views from the river corridor include distant views of forests and granite features such as Wawona Dome. Scenery along the South Fork Merced River below.

Photo SCN-10: South Fork Merced River above Wawona from a ridge between Chain Lakes and Breeze Lake (Yochim 2010)

Wawona is characterized by forested slopes descending to the meandering river, with intermittent gravel bars apparent. With river access difficult and few turnouts, viewing opportunities are typically brief and experienced by motorists from the road. One scenic viewpoint in Segment 8 below Wawona and one viewpoint that provides views to the South Fork Merced River above Wawona (Segment 5) are characterized in the *Scenic Vista Management Plan*, as summarized in Appendix H.

Segments 6 and 7: Wawona Impoundment and Wawona

Scenery viewed directly from in the river corridor in the Wawona area is primarily of the South Fork Merced River itself, with distant views of forests and granite features, such as Wawona Dome. In the foreground, views include managed landscapes throughout the private development in Section 35, which consists of the largest privately owned area in the park, and downriver to the Wawona Campground. In the broader context of the watershed, these elements do not dominate the landscape but are certainly apparent among the mix of landscapes in the region. The *Scenic Vista Management Plan Environmental Assessment* (described above for the valley segment) includes an evaluation of scenic viewpoints in Segment 7 and viewpoints that afford views of this segment; the visual resources assessment findings for these segments are presented in Appendix H.

Environmental Consequences Methodology

The impact analysis associated with scenic resources is based on comparisons between Alternative 1 (No Action) and Alternatives 2–6. The effects of each alternative are evaluated by analyzing potential impacts on natural and cultural landscape features and how impacts might be experienced by visitors. Professional judgment was applied to reach reasonable conclusions as to the context, intensity, duration, and type of potential impacts.

- **Context.** For the purposes of this analysis, only local impacts are considered. This includes impacts that would occur in the Merced River corridor.
- **Intensity.** Scenic resources impacts would be assessed based on a substantial: (a) change in existing landscape character, whether foreground, intermediate ground, or background, and be visible from viewpoints the NPS has identified as important; (b) change in access to historically important viewpoints; or (c) change in the visibility of a viewpoint. The magnitude of impacts to scenic resources, either on the physical component of the natural or cultural landscape (quantitative) or on how the change might be experienced (qualitative), is described as negligible, minor, moderate, or major.
    - ***Negligible:*** Effects would be undetectable by visitors.
    - ***Minor:*** Effects would be detectable, but would only impact areas that are not highly visible.
    - ***Moderate:*** Effects would be noticeable and would impact highly visible areas.
    - ***Major:*** Effects would be clearly detectable and would impact outstanding vista points identified by the Merced River Plan.
- **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 short-lived or temporary, usually due to construction, restoration, or demolition activities. A long-term impact would have a permanent and continual effect.

- **Type.** Impacts are evaluated in terms of whether they would be beneficial or adverse to scenic resources in the Merced River corridor. Impacts are considered beneficial if the quality of the visual experience would be improved and adverse if the quality of the visual experience would be diminished.

Environmental Consequences of Alternative 1 (No Action)

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), riprap and abandoned infrastructure would remain in the river channel and meadow floodplains. Informal trails in meadows would remain and conifers would continue to encroach in meadows. In addition, localized riverbank erosion and scouring effects associated with bridges would remain. This would continue to result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources. In addition, traffic congestion would continue to affect scenic views, where seen in the foreground of the river and scenic views. Scenic vista management actions would not be implemented. Regional haze, as discussed in the "Air Quality" subsection, could adversely affect scenic vistas in the project area seasonally.

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

As discussed in the natural resources analysis topic subsection, Alternative 1 (No Action) would result in increased park visitation compared with existing conditions, based on projected population increases. Ongoing visitor use impacts on natural resources, such as the creation of informal trails, trampling of vegetation, and increased bank erosion, would continue similar to existing conditions and result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), high levels of bare ground and trampling associated with administrative pack stock grazing and informal trails would remain. This would result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources. These conditions would result in local, long-term, minor, adverse impacts on the scenic resources in Segment 1.

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

Scenic resources and views from the Merced River and its banks in Segment 1 are largely uncompromised, with the exception of human use areas that affect the scenic quality of the segment (e.g., Merced Lake High Sierra Camp and associated stock corral, the Little Yosemite Valley Campground and associated composting toilet, the Little Yosemite Ranger Station, the Moraine Dome Backpackers Campground, and the Merced Lake Backpackers Campground). Under Alternative 1 (No Action), these facilities would continue to be present, consistent with existing conditions. Since park visitation could increase over existing levels, Segment 1 could experience a higher concentration of visitors than existing levels. In the absence of a

comprehensive planning effort to manage increased visitation, increased vegetation trampling, erosion, and other damage to resources could occur (as discussed in the natural resources impact subsections of this chapter), which would affect the scenic quality of Segment 1 where damaged resources are visible from scenic viewpoints or are in the foreground of a scenic viewpoint. It is not expected that access to historically important viewpoints would change or that changes in the visibility of a viewpoint would occur. Alternative 1 would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 1.

In summary, under Alternative 1 (No Action), scenic resources and views from the Merced River and its banks in Segment 1 would continue to be largely uncompromised. However, the continued presence of human-made structures and areas of disturbance continue to detract from the scenic quality of views and increased visitation could result in impacts on the scenic quality of Segment 1. No changes in access and visibility would occur under this alternative. Alternative 1 would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 1.

Segment 1 Impact Summary. Implementation of Alternative 1 (No Action) would result in local, long-term, minor, adverse impact on the scenic resources of Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), the Merced River could continue to widen in certain areas as a result of human-caused erosion, loss of bank vegetation, and trampling. Geologic and hydrologic processes in the Merced River would continue to be affected by the acceleration of water velocity at bridges with openings too small to accommodate spring floods, resulting in continued erosion. The bridges themselves contribute to the landscape character of the area. Abutments and abandoned infrastructure associated with the former bridge at Happy Isles and the gage base, and Pohono Bridge gaging station would remain. Abandoned infrastructure would remain at many meadows and riparian areas. This would result in secondary scenic resources impacts, primarily in the Segment 2A (East Valley) where affected natural resources areas are in scenic views or are the foreground to scenic resources, and these impacts could continue to occur similar to existing conditions.

The park would proceed with restoration projects at Bridalveil, Cook's, and El Capitan meadows, as well as riverbank restoration at North Pines Campground. The park would also continue invasive species control and conifer removal from some meadows. These projects and activities would improve the scenic quality of these areas. As noted above, the *Scenic Vista Management Plan* describes vegetation changes that have resulted in intrusions on scenic viewpoints, ranks the quality of viewpoints, and defines limits on management actions based on ecological conditions. There are approximately 50 scenic vista points identified within Segment 2 or near Segment 2 that provide views of the segment with recommended vegetation management to improve scenic view quality. These vegetation management actions would not be implemented under Alternative 1 (No Action). Alternative 1 (No Action) would therefore result in local, long-term, minor to moderate, adverse impacts on the scenic resources Segment 2A (East Valley) and Segment 2B (West Valley).

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

Change in access to historically important viewpoints is not expected to occur under Alternative 1 (No Action). Because park visitation is anticipated to increase 3% annually over existing levels, Segment 2

could experience a higher concentration of visitors than existing levels. Though applicable throughout the park, human-caused erosion and other resource damage is likely to be much more of a concern in Segment 2A (East Valley) than in Segment 2B (West Valley), Wilderness, El Portal, or Wawona because of the East Valley's much higher concentration of visitors. In the absence of a comprehensive planning effort to manage increased visitation and improve banks or bridges in areas where they currently affect the geologic and hydrologic processes of the river, increased damage to resources would occur. These actions affect direct views of the river and long-range iconic views where the river is visible in the foreground.

Under Alternative 1 (No Action), facilities that are visible within the foreground of views of the river or other scenic viewpoints (including roads and traffic through Ahwahnee, Stoneman, and other meadows when viewing Half Dome from the Valley floor, NPS and concessioner maintenance and warehouse facilities, and Housekeeping Camp) would continue to be present, consistent with existing conditions. Design and construction of new structures and renovation of existing structures would be subject to the design guidelines requirements of *A Sense of Place*. Alternative 1 (No Action) would therefore result in local, long-term, minor to moderate, adverse impacts on the scenic resources of Segment 2A (East Valley), and local, long-term, negligible to minor, adverse impacts on those of Segment 2B (West Valley).

Segment 2 Impact Summary. Under Alternative 1 (No Action), scenic resources and views of and from the Merced River and its banks in Segment 2A (East Valley) and Segment 2B (West Valley) would continue to retain high aesthetic value. However, the continued presence of visual intrusions, some structures and facilities, and increased visitation, primarily in the East Valley, could result in impacts on the scenic quality of Segment 2B (West Valley). Some meadow restoration and riverbank restoration projects, and invasive species removal would improve scenic quality and the visibility of a number of scenic viewpoints. Overall, there would be no change in access under Alternative 1. Alternative 1 (No Action) would result in local, long-term, minor to moderate, adverse impacts on the scenic resources of Segment 2A (East Valley), and local, long-term, negligible to minor, adverse impacts on those of Segment 2B (West Valley), primarily associated with visitation-related impacts and conifer encroachment into scenic viewing areas.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Scenic resources and views from the Merced River and its banks in the Merced River Gorge include short- and long-range views of the river. Abandoned infrastructure and human-made structures would continue to be present at in El Portal, as described in Regional Scenic Context. This would result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources, and these impacts could continue to occur similar to existing conditions.

As noted above, the Scenic Vista Management Plan describes vegetation changes that have resulted in intrusions on scenic viewpoints, ranks the quality of viewpoints, and defines limits on management actions based on ecological conditions. The quality of viewpoints was scored based on vividness, uniqueness, and intactness of the viewpoints. There is one scenic vista point identified within Segment 3, and more than 10 that provide views to the segment. The plan includes recommendations for vegetation management to improve scenic view quality. These vegetation management actions would not be implemented under Alternative 1 (No Action). Consequently, Alternative 1 (No Action) would result in local, long-term, minor, adverse impacts on the scenic resources of Segments 3 and 4.Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

Because park visitation is expected to increase over existing levels, Segment 3 could experience a higher concentration of visitors than existing levels. In the absence of a comprehensive planning effort to manage increased visitation, increased vegetation trampling, erosion, and other damage to resources could occur. Access from the El Portal Road and Highway 140 to the river is largely via informal trails, some of which are eroding into the river and would continue to erode with increased visitation. Damage to resources would affect the scenic quality of Segments 3 and 4 where the resources are visible from scenic viewpoints or are in the foreground of a scenic viewpoint.

The El Portal Administrative Site was established by Congress in 1958 to allow relocation of operations and maintenance utilities, facilities, and services out of the park. Roadside parking and river access are largely informal, and while river use levels are low enough such that informal access is acceptable, increased visitation could result in bank erosion and vegetation trampling, which would affect the overall scenic quality of the area. Alternative 1 (No Action) would therefore result in local, long-term, minor, adverse impacts on the scenic resources of Segments 3 and 4. In summary, under Alternative 1 (No Action), scenic resources and views from the Merced River and its banks in Segments 3 and 4 would continue to be largely uncompromised. However, the continued presence of human-made structures would continue and increased visitation could result in impacts on the scenic quality of Segments 3 and 4. Increased park visitation could result in damage to resources that would affect the scenic quality of these segments. Implementation of the *Scenic Vista Management Plan* would not occur. Overall, there would be no change in access under Alternative 1. Alternative 1 (No Action) would result in local, long-term, minor, adverse impacts on the scenic resources of Segments 3 and 4.

Segments 3 & 4 Impact Summary. Implementation of Alternative 1 would result in local, long-term, minor, adverse impacts on the scenic resources of Segments 3 & 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Scenic resources and views from the river and its banks along the South Fork Merced River are largely natural and undisturbed and have high aesthetic value. However, there are existing structures and facilities in the Segment 7 viewshed, including the Wawona maintenance yard, Wawona RV dump station, and abandoned metal pipes in South Fork Merced River side channels. These structures and facilities would continue to be present under Alternative 1 (No Action). In addition, vegetation trampling and bank erosion has occurred in the vicinity of campgrounds and picnic areas. This would result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources, and these impacts could continue to occur similar to existing conditions.

As noted above, the *Scenic Vista Management Plan* describes vegetation changes that have resulted in intrusions on scenic viewpoints, ranks the quality of viewpoints, and defines limits on management actions based on ecological conditions. The quality of viewpoints was scored based on vividness, uniqueness, and intactness of the viewpoints. There are approximately 9 scenic vista points identified within these segments or near Segment 3 that provide views of the segment. The *Plan* recommends vegetation management to improve scenic view quality at these locations. These vegetation management actions would not be implemented under Alternative 1 (No Action). The resulting impacts on the scenic resources of Segments 5, 6, and 7 would continue to be local, long-term, minor, and adverse.

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

Since park visitation could increase over existing levels, Wawona could experience a higher concentration of visitors than existing levels, which could result in further trampling of vegetation and damage to resources. Damage to resources would affect the scenic quality of the segments where the resources are visible from scenic viewpoints or are in the foreground of a scenic viewpoint. Alternative 1 (No Action)would result in local, long-term, minor, adverse impacts on the scenic resources of Segments 5, 6, 7, and 8.

Segments 5-8 Impact Summary. Under Alternative 1 (No Action), scenic resources and views from the South Fork Merced River and its banks would continue to be largely uncompromised. However, the presence of human-made structures would continue and increased visitation could result in impacts on the scenic quality of the segments. Overall, there would be no change in access under Alternative 1. The resulting impacts on the scenic resources of Segments 5, 6, and 7 would continue to be local, long-term, minor, and adverse.

Summary of Alternative 1 (No Action) Impacts

In the absence of a comprehensive planning effort to manage increased visitation, reduce human-made structures, and restore areas of natural resource damage, scenic resources impacts would continue These effects would be most pronounced in areas with concentrated facilities that intrude on the landscape character of the river segments and visitor use (e.g., Yosemite Valley and Wawona) that result in vegetation trampling, erosion, and other resource damage that affects the scenic quality of the segment where the resources are visible from scenic viewpoints or are in the foreground of a scenic viewpoint. NPS administrative requirements do afford some protection to the river from future actions, but no comprehensive or unified plan exists to protect the scenic resources of the Merced River. Alternative 1 (No Action) would have a local, long-term, minor to moderate, adverse impact on scenic resources.

Cumulative Impacts of Alternative 1 (No Action)

The discussion of cumulative impacts on scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 1 (No Action). The projects identified below include those projects that have the potential to affect the scenic resources of the Merced River.

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include removal of structures and restoration of natural drainage features and meadow restoration and removal of vegetation that blocked scenic views. Specific examples of past projects include the following:

- **Restoration/Removal:** Cascades Housing Removal, Cascades Diversion Dam Removal, Happy Isles Gauging Station Bridge Removal, Cook's Meadow Ecological Restoration, Fern Springs Restoration, Happy Isles Fen Habitat Restoration Project, Wawona Tunnel View Project, Lower Yosemite Fall Project
- **Facility Development:** Bridges provide scenic viewing opportunities and are viewed by some visitors as scenic features.

Adverse impacts from past actions include the introduction of obstructions in the Merced River channel, which results in bank erosion, and the introduction of facilities that intrude on the scenic quality of the river. Specific examples of such past projects include the following:

- **Modified Hydrological Features:** Previous development of bridges, riprap, dikes, flood walls, impoundments, dams, and facilities in the river channel or floodplain.
- **Facility Development**: East Yosemite Valley Utilities Improvement Plan

Present Actions

Present actions contribute to similar beneficial and adverse impacts as described for past actions.

Beneficial impacts for present actions are similar to those discussed for past actions. Specific examples of present projects include the following:

- **Management and Planning:** *Half Dome Trail Stewardship Plan* and *Yosemite National Park Fire Management Plan/EIS*

Adverse impacts from present actions are similar to those discussed for past actions. Specific examples of present projects include the following:

- **Facility Development:** Wahhoga Indian Cultural Center and Yosemite Environmental Education Campus

Reasonably Foreseeable Future Actions

Impacts from future actions would be similar to those discussed for past and present actions. The Yosemite Wilderness Stewardship Plan/EIS (Management and Planning) is an example of a future projects with beneficial impacts.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have limited or would limit visitor uses through planning (which decreases the potential for secondary scenic resources effects), or restore vegetation and river banks, though the overall impact remains adverse. Alternative 1 (No Action) would contribute to worsening localized, adverse conditions in areas with concentrated visitor use and through the continued presence of facilities and infrastructure that are visible within scenic views, and presence of vegetation that is blocking scenic views. Cumulatively, the scenic resources impacts would be local, long term, minor to moderate, and adverse.

Environmental Consequences Common to Alternatives 2–6

All River Segments

Impacts of Actions to Protect and Enhance River Values

Actions that would take place throughout the Merced River corridor under Alternatives 2–6 include removal of riverbank riprap and abandoned infrastructure in the river channel where possible. Denuded vegetation and informal trails would be restored in several meadows, and beach access and trails would be defined and delineated. In addition, areas of riverbank erosion would be repaired (see Appendix E). Selected scenic vista points would be improved by thinning of conifers and other trees that encroach on views (see Appendix H). Restoration activities would result in short-term, temporary intrusions into views when construction and

restoration activities and equipment would be visible from area trails and visitor use areas. However, implementation of these actions would remove areas of resource damage that detract from the scenic quality of the river corridor and adjacent areas. Upon completion of restoration activities, restored areas would be more natural in appearance. Regional haze could adversely affect scenic vistas in the project area seasonally. The resulting impact on scenic resources would be local, long-term, minor, and beneficial.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, the Merced River and its banks in Segment 1 would remain largely uncompromised. Implementation of these alternatives would include restoration of informal trails and other denuded areas at Merced Lake meadow and shoreline. Implementation of these actions would remove areas of resource damage that detract from the scenic quality of the Merced Lake area. Upon completion of restoration activities, the Merced Lake area would be more natural in appearance, as viewed from the Merced Lake Trail and the visitor use areas that would be retained. Views of Merced Lake shoreline and meadows would be improved where restoration areas are in the foreground, as well as views of peaks where restored areas are in the foreground. The resulting impact on the scenic resources of Segment 1 would be local, long-term, minor, and beneficial.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, minor, beneficial impacts on scenic resources of Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

In the Happy Isles area, the former Happy Isles footbridge footings and river gage base would be removed from the bed and banks of the Merced River; informal trails would be revegetated; and wayfinding between Happy Isles and the Mist Trail from the shuttle stop would be improved to discourage further formation of informal trails. In addition, bank improvements would be installed downstream of the Happy Isles road bridge. These actions would improve the scenic quality of the area by reducing the number of human-made structures in the area and restoring vegetation, as seen from the Mist Trail, and would improve the scenic quality of the river in the area of the riverbank improvements, including views from the road bridge and the bicycle path on the downstream side of the bridge. The resulting impact on scenic resources would be local, long-term, minor, and beneficial.

In the Lower Pines and North Pines campground areas, campsites would be removed. Riverbank conditions would be improved downstream of Clark's and Ahwahnee bridges. In addition, river access would be improved to direct visitors to access points at sandy beach areas, which would reduce riparian vegetation and riverbank damage. General restoration activities would be conducted as applicable, including riprap removal, removal of informal trails, and riverbank restoration in the area between Clark's and Stoneman bridges. These actions would reduce the number of human-made structures in the area and improve the condition of riparian vegetation and riverbanks, which would improve views of the river from the Clark's Bridge (Scenic Vista point 7), beach areas, and trails that cross the area. The resulting impact on scenic resources would be local, long-term, minor, and beneficial.

In the Housekeeping Camp area, lodging units and associated structures would be removed and restored, including removal of riprap upstream of the Housekeeping footbridge and downstream of the camp. In addition, general restoration activities would be conducted as applicable, including removal of informal trails and revegetation. These actions would reduce the number of human-made structures in the area and improve the condition of riparian vegetation and river banks, which would improve views of the river from the Housekeeping footbridge (Scenic Vista point 92), Housekeeping Beach (Scenic Vista point 26), Housekeeping Bridge Trail, Southside Drive, and the adjacent bicycle path. Views of North Dome, Glacier Point, Yosemite Falls, El Capitan, and Cathedral Rocks from the scenic vista points with the restoration areas in the foreground would be improved. The resulting impact on scenic resources would be local, long-term, minor to moderate, and beneficial.

Bank restoration downstream of Sentinel Bridge would be implemented. In addition, roadbed and roadside parking improvements would be implemented adjacent to Cook's Meadow. Roadside parking improvements would also be implemented along Sentinel Drive crossover. Improvements would also be made to areas of Sentinel Meadow and the boardwalk. These actions would improve the scenic quality and appearance of the meadows as seen from the boardwalk, trails, and Northside Drive, and also improve views of north Valley wall scenic features as seen from the Sentinel Meadow boardwalk vista point (24). The resulting impact on scenic resources would be local, long-term, minor, and beneficial.

A number of restoration actions are proposed in the area between Swinging Bridge and El Capitan Picnic Area, in addition visitor use facility improvements that would focus visitor use away from sensitive resource areas. Riverbank restoration would occur downstream from Swinging Bridge. The Swinging Bridge and Sentinel Beach picnic areas and day use areas would be improved and nearby sensitive habitat would be restored. Informal trails would be removed from Leidig Meadow, bicycle path areas would be improved, and additional meadow restoration activities would be implemented. In addition, general restoration activities would be conducted as applicable, including removal of informal trails and revegetation. Bank conditions and riparian vegetation restoration would improve the scenic quality of the river, including views from Swinging Bridge beach and Swinging Bridge, and of the bridge itself (Scenic Vista points 22 and 23) and of the Swinging Bridge Picnic Area. Views of restored meadows as seen from these areas, as well as vista points on the west end of Leidig Meadow, would also be improved (Scenic Vista points 31). In addition, views of Yosemite Falls, North Dome, Sentinel Rock, Cathedral Rocks, Washington Column, and other iconic vistas with the river and/or meadows in the foreground would be improved. The resulting impact on scenic resources would be local, long-term, minor to moderate, and beneficial.

A number of restoration actions are proposed in the area between El Capitan Picnic Area and the Bridalveil parking lot, in addition to visitor use facility improvements. Bridalveil Meadow would be restored in an area near El Capitan moraine, in addition to Eagle Creek Meadow and Slaughterhouse Meadow. River access points would be improved and nearby sensitive habitat would be restored. In addition, general restoration activities would be conducted as applicable, including removal of informal trails and revegetation. Improved bank and meadow would improve the quality of views, particularly as seen from Northside Drive and the Valley Loop Trail. In addition, views of El Capitan and Cathedral Rocks, with restoration areas in the foreground, would be improved.

In the Bridalveil Meadow area, the riverbank and meadow would be restored, and conifers encroaching on the meadow would be removed. The park would remove one and pave and formalize five other roadside pullouts for river access between Pohono Bridge and the intersection of the Big Oak Flat Road. The former sewer plant area would be restored and an abandoned gaging station at Pohono Bridge would be removed

and the area restored. In addition, general restoration activities would be conducted as applicable, including removal of informal trails and revegetation. These actions would generally reduce human-made structures and/or reduce ongoing disturbance within these areas by improving riverbank, riparian vegetation, and meadow conditions, which would improve the quality of views of the river and meadows. Conifer removal would open view of the meadow, particularly as seen from Northside Drive and the Valley View roadside turnout (Scenic Vista point 146). The resulting impact on scenic resources would be local, long-term, minor to moderate, and beneficial.

Throughout Segment 2, there are several isolated restoration and resource protection measures that would result in improvement in the scenic quality of the immediate area. However, these restorations are in heavily wooded areas that are not in the vicinity of the river, meadows, or other scenic resources. The impacts of these actions would be local, long-term, negligible, and beneficial.

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

Under Alternatives 2–6, an interpretive nature walk would be constructed through the Lower River area that emphasizes river-related processes, and the Upper Pines dump would be moved away from the river. Yosemite Lodge concessioner housing would be removed, several picnic areas would be improved, and use areas would be directed away from sensitive resource areas. Several other structures would be removed or relocated away from the river. Creation of an interpretive nature walk would result in a small increase in human-made structures in the area. However, these changes would be minor and would not substantially affect views of the river where the trail is in the foreground. Furthermore, an interpretive nature walk could improve visitor understanding and appreciation of the scenic resources and vistas in this area. These actions would improve the scenic quality of the area by reducing the number of human-made structures in the area, providing educational opportunities focused on scenic view opportunities, and protect the riverbank and riparian vegetation. Views of the river with the restoration areas in the foreground would be improved. Design and construction of new structures and renovation of existing structures would be subject to the design guidelines requirements of *A Sense of Place*. The resulting impact on scenic resources would be local, long-term, minor to moderate, and beneficial.

Curry Village and Campgrounds. The park would remove the Happy Isles Snack Stand at Curry Village. At The Ahwahnee, the park would remove the 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. These actions would generally improve the scenic quality of the area by reducing the number of human-made structures. However, parking expansion would increase human-made infrastructure, but would not be expected to impact scenic views. The resulting impact would be local, long-term, negligible, and beneficial.

Yosemite Village Day-use Parking Area 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. It would also construct a new maintenance building near the Government Utility Building. The park would remove roadside parking along Sentinel Drive and expand Yosemite Village day-use parking into the footprint of the Valley Garage. To improve visitor access between the Yosemite Village Day-use Parking Area and Village, the park would construct a pathway connecting the new day-use parking lot with the repurposed Village Sports Shop. The repurposing and replacement of structures within already developed areas would not be expected substantially increase the

number of human-made structures or impact scenic views. The resulting impact would be local, long-term, negligible, and adverse.

Camp 4 and Yosemite Lodge. The park would remove the NPS Volunteer Office, post office, 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. These actions would reduce the number of human-made structures in the area, thereby improving the natural character of these areas. The resulting impact would be local, long-term, negligible, and beneficial.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in segment-wide, long-term moderate, beneficial impacts on scenic resources in Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities across all action alternatives would occur primarily in Segment 2A (East Valley) and would have local, long-term, minor, beneficial impacts on scenic resources within Segment 2. Such actions would not be expected to have an appreciable effect on scenic resources within Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, the abandoned infrastructure and imported fill would be removed at the Cascades Picnic Area, Abbieville, and Trailer Village. Management actions proposed for Segment 3 include restoration activities would be conducted as applicable, including removal of informal trails, riverbank restoration, riparian zone protection, and revegetation. Management actions proposed for Segment 4 include riverbank protection and trail, road, and structure removal and restoration. In addition, general restoration activities would include removal of informal trails, bank restoration, riparian zone protection, and revegetation. The Greenemeyer sand pit would be restored to natural conditions. These actions would improve the scenic quality of restoration areas and views of the river in the vicinity of these areas, as seen from Highway 140 and El Portal Road. The resulting impact on scenic resources within Segment 4 would be local, long-term, minor to moderate, and beneficial.

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

Under Alternatives 2–6, new employee housing units would be constructed in the El Portal area, increasing the number of human-made structures in Segment 4. However, the new structures would be in areas of existing development and would not substantially affect the scenic quality of the river corridor and adjacent areas. The resulting impact on scenic resources within Segment 4 would be local, long-term, minor, and adverse.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in segment-wide, long-term minor to moderate, beneficial impacts on scenic resources in Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, minor, adverse impacts on scenic resources within Segment 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, the Wawona RV dump site would be relocated away from the river, and river access and picnicking would be delineated at the South Fork Merced River Picnic Area to focus public use away from areas subject to riverbank erosion. Restoration activities would result in short-term, temporary intrusions into views when construction and restoration activities and equipment would be visible from area trails and visitor use areas. However, implementation of these actions would remove areas of resource damage that detract from the scenic quality of the river corridor and adjacent areas, and views of the river with restoration areas in the foreground. Upon completion of restoration activities, restored areas would be more natural in appearance. The resulting impact on scenic resources within Segment 7 would be local, long-term, minor, and beneficial.

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

Under Alternatives 2–6, an operations building and grounds facility would be constructed, thus increasing the number of human-made structures in this area. However, the new structures would be in areas of existing development and would not substantially affect the scenic quality of the river corridor and adjacent areas. The resulting impact on scenic resources within Segment 7 would be local, long-term, minor, and adverse.

Wawona. The park would redesign the bus stop at the Wawona Store to accommodate increased visitor use. However, the new structures would be in areas of existing development and would not substantially affect the scenic quality of the river corridor and adjacent areas. The resulting impact on scenic resources within Segment 7 would be local, long-term, negligible, and adverse.

Segments 5-8 Impact Summary: Actions to protect and enhance river values would result in segment-wide, long-term minor, beneficial impacts on scenic resources in Segment 7. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on scenic resources within Segment 7.

Summary of Impacts from Actions Common to Alternatives 2-6

The alternatives include several common restoration actions that would improve the appearance of riverbanks, meadows, and riparian vegetation, and a number of actions that would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in management actions are proposed in existing developed areas, would adhere to the park's design guidelines, and would not result in reduced scenic quality. Overall, with implementation of MM-VEX-2, as appropriate, (see Appendix C), actions common to Alternatives 2-6 would result in local, long-term, moderate, beneficial impacts on scenic resources.

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

As discussed in the natural resources impact subsections of this chapter, Alternative 2 would result in reduced park visitation compared to Alternatives 2–6, which would reduce the potential for ongoing visitor use impacts on natural resources, such as creation of informal trails, trampling of vegetation, and increased riverbank erosion, which results in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources.

Segment 1: Merced River Above Nevada Fall

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

Implementation of Alternative 2 would include conversion of the Little Yosemite Valley and Merced Lake Backpackers Camping Areas to dispersed camping, and the Moraine Dome Camping Area would be discontinued, along with general restoration activities as applicable in the Little Yosemite Valley area. Grazing of the Merced Lake East Meadow would be prohibited. Implementation of these actions would remove human-made structures and restore areas of resource damage that detract from the scenic quality of the area. Upon completion of restoration activities, the Little Yosemite Valley area would be more natural in appearance, as viewed from the Merced Lake Trail and the visitor use areas that would be retained. Views of the river would be improved where restoration areas are in the foreground, as well as views of peaks where restored areas are in the foreground.

Little Yosemite Valley Wilderness zone capacity would be decreased, which would substantially reduce trail use in the area between Little Yosemite Valley and Merced Lake. This action, in addition to reducing the number of overnight units available in Segment 1, would reduce overall visitation to the area compared to existing conditions. Therefore, the potential for ongoing visitor use impacts on the natural resources of Segment 1, as well as secondary effects on the scenic quality of the area would be reduced. Implementation of management actions related to visitor use management and facilities under Alternative 2 would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 1.

Merced Lake High Sierra Camp. Under Alternative 2, the Merced Lake High Sierra Camp would be removed and restored. Implementation of these actions would remove human-made structures that detract from the scenic quality of the Merced Lake area. Upon completion of restoration activities, the Merced Lake area would be more natural in appearance, as viewed from the Merced Lake Trail and the visitor use areas that would be retained. Views of Merced Lake shoreline and meadows would be improved where restoration areas are in the foreground, as well as views of peaks where restored areas are in the foreground. The resulting impacts on the scenic character of Segment 1 would be local, long-term, moderate, and beneficial.

Segment 1 Impact Summary: Implementation of management actions related to visitor use management and facilities under Alternative 2 would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, in addition to actions common to Alternatives 2–6, Stoneman, Sugar Pine, and Ahwahnee bridges would be removed and the riverbank areas would be restored. Additional meadow and riparian restorations would be implemented, including areas of Housekeeping Camp, Upper and Lower Rivers Campgrounds, Stoneman Meadow, El Capitan Meadow, and other highly visible meadow areas. All campsites in the 100-year floodplain would be removed, and the floodplain and habitat would be restored. Implementation of these actions would remove areas of resource damage that detract from the scenic quality of the river corridor and adjacent areas, and views of the river with restoration areas in the foreground. Upon completion of restoration activities, restored areas would be more natural in appearance. However, it is noted that the bridges contribute to the scenic quality of the area and provide opportunities to view scenic areas, including the river. Implementation of management actions related to protecting and enhancing river values under Alternative 2 (including actions common to all alternatives) would result in local, long-term, moderate to major, beneficial impacts on the scenic resources of Segment 2A (East Valley) and Segment 2B (West Valley).

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

Under Alternative 2, all lodging units would be removed at Housekeeping Camp. Yosemite Village would be substantially retained, with some structures repurposed and several structures removed. Yosemite Lodge would be converted to day use, with some visitor uses repurposed and a campsite developed northwest of the lodge area. Several lodge buildings would be removed. Restoration activities would improve the scenic quality in the immediate vicinity of building removal and restoration areas. These actions would improve the scenic quality of the area by reducing the number of human-made structures in the area and restoring vegetation, and would improve the scenic quality of the river, including views from scenic viewpoints.

In addition, visitor use would be substantially reduced from existing conditions in Segment 2. Visitor management, in addition to the above actions, would reduce the potential for ongoing visitor use impacts on the natural resources of the area that could result in secondary effects on the scenic quality of the area. Implementation of management actions related to visitor use management and facilities under Alternative 2 (including actions common to all alternatives) would result in local, long-term, moderate, beneficial impacts on the scenic resources of Segment 2.

Curry Village and Campgrounds. The park would construct 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 the Ahwahnee pool and campsites from Lower Pines (32), North Pines (86), and Upper Pines (24). New structures would be constructed in an already developed area, generally within previously developed sites. These actions would collectively result in a reduction in human-made structures in the Curry Village and Campground areas, and a return to more natural conditions. The impact on scenic resources would, therefore, be local, long-term, minor, and beneficial.

Yosemite Village Day-use Parking Area 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. As these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, negligible, and adverse.

Camp 4 and Yosemite Lodge. The park would relocate the Superintendent's House (Residence 1) from the river corridor and remove the Yosemite Lodge pool, move on-grade pedestrian crossing between 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. Relocation of the Superintendent's House (Residence 1), removal of the swimming pool, and conversion of the Highland Court area would have a beneficial impact by reducing the number of human-made structures in the area and return it to more natural conditions. Additional parking at Yosemite Lodge would have the opposite effect as it would increase the development footprint and bring more vehicles and visitors into this area. However, as these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in segment-wide, long-term moderate to major, beneficial impacts on scenic resources within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation, overnight lodging and camping, and concessioner housing, would have local, long-term, minor, beneficial impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.

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 Odger's 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. These measures would have a local, long-term, minor, beneficial impact on scenic resources in the vicinity of the former fuel station.

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

Under Alternative 2, employee housing would be added to the Abbieville and Rancheria Flat, along with parking for these areas. These actions would increase the number of human-made structures in the area. However, these areas are currently developed, and the addition of these structures would not substantially decrease the scenic quality of the area. Overall, visitor use would be reduced from existing conditions, which would reduce the potential for ongoing visitor use impacts on the natural resources and associated secondary effects on the scenic quality of the area. Implementation of these actions would result in local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 4.

Segments 3 & 4 Impact Summary: Implementation of actions to protect and enhance river values would have a local, long-term, beneficial impact on scenic resources within Segment 4. Actions to management visitor use and facilities under Alternative 2 would result in local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, a portion of the maintenance yard would be restored and other structures would be removed. The Wawona Golf Course and tennis courts would be removed. Implementation of these management actions would improve the scenic quality of the restoration areas. In particular, the restored golf course restoration area would be visible from Chowchilla Road, Highway 41, and vista points along that road. The impact on scenic resources of Segment 7 would be local, long-term, moderate, and beneficial.

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 would be expected to decrease overall visitation within this Segments 5-8.

As a result, the potential for ongoing visitor use impacts on the natural resources of Segments 5–8, and associated secondary effects on the scenic quality of these segments would be reduced. Implementation these actions would result in local, long-term, minor, beneficial impacts on the scenic resources of Segments 5–8.

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. These actions would further reduce visitation and the number of human-made structures in the vicinity, and restore the area to more natural conditions. The resulting impact on scenic resources within Segment 7 would be local, long-term, minor, and beneficial.

Segments 5-8 Impact Summary: Overall, implementation of management actions related to visitor use management and facilities under Alternative 2 would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segments 5–8.

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

Alternative 2 includes restoration actions that would improve the appearance of riverbanks, meadows, and riparian vegetation and some actions that would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in management actions are proposed in existing developed areas and would not result in reduced scenic quality. In addition, visitor use capacity management would be implemented, resulting in visitor use that is substantially lower than existing levels, which would reduce the potential for ongoing visitor use impacts on natural resources that could result in secondary effects on scenic resources. Overall, with implementation of MM-VEX-2, as appropriate, (see Appendix C), Alternative 2 would result in local, long-term, moderate to major, beneficial impacts on scenic resources.

Cumulative Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

The discussion of cumulative impacts to scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 2. The projects identified below include those projects that have the potential to affect the scenic resources of the Merced River. See Appendix B for a full list of cumulative projects.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions that would contribute towards cumulative effects towards scenic resources under this alternative are the same as those listed for Alternative 1.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have beneficially limited uses through planning or restored vegetation and riverbanks, and management of vegetation that is blocking scenic views, although the overall impact remains adverse. Alternative 2 would result in local, long-term, moderate, beneficial impacts on scenic resources related to restoration activities throughout the planning area, removal of human-made structures, and reduced visitor use capacity, which result in overall improvement in the scenic quality of the planning area. Cumulatively, the impact on scenic resources would be local, 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

As discussed in the natural resources impact subsections of this chapter and similar to Alternative 2, Alternative 3 would result in reduced park visitation compared to Alternative 1 (No Action), which would reduce the potential for ongoing visitor use impacts on natural resources, such as creation of informal trails, trampling of vegetation, and increased bank erosion. These visitor use impacts result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources.

Segment 1: Merced River Above Nevada Fall

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

Under Alternative 3, the Little Yosemite Valley Campground would be reduced and portions of the designated camping area would be restored, rather than restoration of the entire designated camping area and conversion to dispersed camping under Alternative 2. Merced Lake Backpackers Camping Area would be expanded. Grazing of the Merced Lake East Meadow would be regulated. Restoration activities and reduced visitor capacity would improve the scenic quality of Segment 1, and reduce ongoing visitor use impacts on the natural

resources of the area and associated secondary impacts on the scenic quality of the area. Implementation of management actions related to visitor use management and facilities under Alternative 3 would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 1.

Merced Lake High Sierra Camp. The park would close the Merced Lake High Sierra Camp and removal all infrastructure, convert the area to designated Wilderness, and use the former camp area for a temporary stock camp. Upon completion of restoration activities, despite the continued use of the area as a stock camp, the Merced Lake area would be more natural in appearance, as viewed from the Merced Lake Trail and the visitor use areas that would be retained. Views of Merced Lake shoreline and meadows would be improved where restoration areas are in the foreground, as well as views of peaks where restored areas are in the foreground. The resulting impacts on the scenic character of Segment 1 would be local, long-term, minor to moderate, and beneficial.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, minor to moderate, beneficial impacts on scenic resources in Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Actions under Alternative 3 would be similar to Alternative 2 and would also result in an overall improvement in the scenic quality of Segment 2. For many actions, the meadow or riverbank restoration approach proposed under Alternative 3 would be different than that proposed for Alternative 2; however, the scenic quality of the restoration areas following restoration activities would be similarly improved. Implementation of management actions related to protecting and enhancing river values under Alternative 3 (including actions common to all alternatives) would result in local, long-term, moderate to major, beneficial impacts on the scenic resources of Segment 2A (East Valley) and Segment 2B (West Valley).

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

A greater number of campsites would be retained and less restoration would occur under Alternative 3 than under Alternative 2. In addition, a recreational vehicle (RV) campground would be developed. However, the proposed expanded campground is in a heavily wooded area that could be seen from the bicycle path adjacent to the river and Happy Isles Loop Road. Views of the Merced River with the campground areas in the foreground would not be improved to the same degree as under Alternative 2, including views from Happy Isles bridge (Scenic Vista point 14), Clark's Bridge (Scenic Vista point 7), Housekeeping Camp footbridge (Scenic Vista point 92), Housekeeping Beach (Scenic Vista point 26), Housekeeping Bridge trail, Southside Drive, and the adjacent bicycle path and trails that cross this area. In addition, views of North Dome, Glacier Point, Yosemite Falls, El Capitan, and Cathedral Rocks from the scenic vista points with the campground areas in the foreground would be not be improved to the same degree under Alternative 3 as under Alternative 2.

In Curry Village, a greater number of lodging units and parking spaces would be retained at the Curry Orchard Parking Area, than under Alternative 2. In the Yosemite Village area, some structures would be retained, rather than removed as under Alternative 2. Yosemite Lodge would be retained, rather than converted to day use with a campground to the west as under Alternative 2. However, these areas are in existing developed areas.

While Alternative 3 would retain more campground and overnight accommodations compared with Alternative 2, restoration activities and reduced visitor capacity would improve the scenic quality of Segment 2 and reduce ongoing visitor use impacts on the natural resources of the area that could result in secondary effects on the scenic quality of the area. Implementation of management actions related to visitor use management and facilities under Alternative 3 would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 2, mainly in the East Valley.

Curry Village and Campground. The park would remove 45 and retain 355 lodging units at Curry Village. The park would remove the Ahwahnee pool and campsites from Lower Pines (15), North Pines (34), and Upper Pines (2) (for archeological resource concerns). In addition, the park would discontinue commercial day rides from the Curry Village Stables. These actions would collectively result in a reduction in human-made structures in the Curry Village and Campground areas, and a return to more natural conditions. The impact on scenic resources would, therefore, be local, long-term, minor, and beneficial.

Yosemite Village Day-use Parking Area 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. As these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, negligible, and adverse.

Camp 4 and Yosemite Lodge. The park would relocate from the corridor the Superintendent's House (Residence 1) and remove the Yosemite Lodge swimming pool, 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 3 busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour busses. Relocation of the Superintendent's House (Residence 1) and removal of the pool would have a local, long-term, negligible, beneficial effect on the scenic quality of the area through removal of human-made structures and returning it to a more natural condition. However, additional parking at Highland Court and Yosemite Lodge would bring more visitors and vehicles into these areas. In the latter case, the proposed actions would increase the development footprint within the area. However, as these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, long-term moderate to major, beneficial impacts on scenic resources within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation, overnight lodging and camping, and concessioner housing, would have local, long-term, minor, beneficial impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.

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 Odger's 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. These measures would have a

local, long-term, minor, beneficial impact on scenic resources in the vicinity of the former fuel station in Segment 4.

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

New low- and medium-density housing and parking would be constructed as infill development in Rancheria, outside the 100-year floodplain. These actions would increase the number of human-made structures in the area. However, these areas are currently developed, and the addition of these structures would not substantially decrease the scenic quality of the area. Overall, visitor use would be reduced from existing conditions, which would reduce the potential for ongoing visitor use impacts on the natural resources and associated secondary effects on the scenic quality of the area. Implementation of these actions would result in local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 4. Implementation of these actions would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 4. Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, adverse impacts on the scenic resources of Segments 3 & 4.

Segments 5, 6, 7, and 8: South Fork Merced River

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. Implementation of these management actions would improve the scenic quality of the restoration areas. In particular, the restored golf course restoration area would be visible from Chowchilla Road, Highway 41, and vista points along that road. The impact on scenic resources of Segment 7 would be local, long-term, moderate, and beneficial.

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. Reduced visitor capacity would improve the scenic quality of the segments and reduce ongoing visitor use impacts on the natural resources of the area, and associated secondary effects on the scenic quality of the area. Implementation of these management actions would result in local, long-term, minor, beneficial impacts on the scenic resources of Segments 5–8.

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. These actions would further reduce visitation and the number of human-made structures in the vicinity, and restore the area to more natural conditions. The resulting impact on scenic resources within Segment 7 would be local, long-term, minor, and beneficial.

Segments 5-8 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segments 5-8. Actions to manage

user capacities, land use, and facilities would also have local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segments 5–8.

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

Alternative 3 would include restoration actions that would improve the appearance of riverbanks, meadows, and riparian vegetation, and some actions that would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in management actions are proposed in existing developed areas and would not result in reduced scenic quality. In addition, visitor use capacity management would be implemented, resulting in visitor use substantially lower than existing levels, which would reduce the potential for ongoing visitor use impacts on natural resources that could result in secondary effects on scenic resources. Overall, with implementation of MM-VEX-2, as appropriate, (see Appendix C), Alternative 3 would result in local, long-term, moderate to major, beneficial impacts on scenic resources.

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

The discussion of cumulative impacts to scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 3. The projects identified below include those projects that have the potential to affect the scenic resources of the Merced River.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions that would contribute towards cumulative effects towards scenic resources under this alternative are the same as those listed for Alternative 1.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in moderate localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have beneficially limited uses through planning or restored vegetation and riverbanks, and management of vegetation that is blocking scenic views, although the overall impact remains adverse. Alternative 3 would result in local, long-term, moderate to major, beneficial impacts on scenic resources related to restoration activities throughout the planning area, removal of human-made structures, and reduced visitor use capacity which result in overall improvement in the scenic quality of the planning area. Cumulatively, the impact on scenic resources would be local, 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

As discussed in the natural resources impact sections and similar to Alternative 2, Alternative 4 would result in reduced park visitation compared to Alternative (No Action), which would reduce the potential for ongoing visitor use impacts on natural resources, such as creation of informal trails, trampling of vegetation, and increased bank erosion. These visitor use impacts results in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources. However, visitor use numbers would only be slightly reduced compared with Alternative 1 (No Action) and more visitation would result compared with Alternative 2. Visitor use management strategies would result in higher visitation than would occur under Alternative 2. Therefore, secondary impacts on scenic resources would not be improved to the same degree as Alternative 2 but could be improved compared to existing conditions.

Segment 1: Merced River Above Nevada Fall

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

Under Alternative 4, the Little Yosemite Valley Campground would be retained, rather than restoring the entire designated camping area and converting it to dispersed camping as under Alternative 2. Restoration and prohibitions on grazing of Merced Lake East Meadow, along with other general restoration activities would improve the scenic quality of the area, but not to the degree as would occur under Alternative 2. Therefore, improvement in scenic quality in Segment 1 would be less under Alternative 4 than under Alternative 2 because areas of barren ground, designated camping areas, and other human-made structures would be retained (and expanded at the Merced Lake Backpackers Camping Area), and therefore less restoration would be implemented. While more campground sites would be retained with Alternative 4 than with Alternative 2, restoration activities and reduced visitor capacity would improve the scenic quality of Segment 1 and reduce ongoing visitor use impacts on the natural resources of the area, which could result in secondary effects on the scenic quality of the area. Implementation of management actions related to visitor use management and facilities under Alternative 4 would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 1. Merced Lake High Sierra Camp. The park would close the Merced Lake High Sierra Camp and removal all infrastructure, convert the area to designated Wilderness, and restoration of the former camp area to natural conditions. Implementation of these actions would remove human-made structures that detract from the scenic quality of the Merced Lake area. Upon completion of restoration activities, the Merced Lake area would be more natural in appearance, as viewed from the Merced Lake Trail and the visitor use areas that would be retained. Views of Merced Lake shoreline and meadows would be improved where restoration areas are in the foreground, as well as views of peaks where restored areas are in the foreground. The resulting impacts on the scenic character of Segment 1 would be local, long-term, minor to moderate, and beneficial.

Segment 1 Impact Summary: Implementation of management actions related to visitor use management and facilities under Alternative 4 would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Actions under Alternative 4 in Segment 2 would be similar to Alternative 2 and would also result in an overall improvement in the scenic quality of this segment. For many actions, the meadow or riverbank restoration approach proposed under Alternative 4 would be different than that proposed under Alternative 2. In addition, slightly less road and trail removal/relocation would occur. However, the scenic quality of the restoration areas following restoration activities would be similarly improved. Implementation of management actions related to protecting and enhancing river values under Alternative 4 (including actions common to all alternatives) would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segment 2A (East Valley) and Segment 2B (West Valley).

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

A greater number of units would be retained under Alternative 4 than under Alternative 2. In addition, a recreational vehicle campground and a walk-in campground would be developed. However, riverbank, riparian, and other restoration actions would be implemented as under Alternative 2. The proposed expanded campground is in a heavily wooded area, but could be seen from the bicycle path adjacent to the river and Happy Isles Loop Road. The riverbank downstream of Stoneman Bridge would be restored; however, the bridge would be retained. Views of the Merced River with these areas in the foreground would not be improved under Alternative 4 to the same degree as Alternative 2, including views from Happy Isles bridge (Scenic Vista point 14), Clark's Bridge (Scenic Vista point 7), Housekeeping footbridge (Scenic Vista point 92), Housekeeping Beach (Scenic Vista point 26), Housekeeping Bridge Trail, Southside Drive, and the adjacent bicycle path and trails that cross the area. In addition, views of North Dome, Glacier Point, Yosemite Falls, El Capitan, and Cathedral Rocks from the scenic vista points with the campground areas in the foreground would be not be improved to the same degree under Alternative 4 as under Alternative 2.

In Curry Village, a greater number of lodging units and parking spaces would be retained under Alternative 4 than under Alternative 2. Yosemite Lodge would be retained, rather than converted to day use as under Alternative 2, and a campground would be developed. However, these areas are in existing developed areas.

While Alternative 4 would retain more campground and overnight accommodations compared with Alternative 2; restoration and maintenance activities, coupled with visitor capacity levels, would improve the scenic quality of Segment 2 and limit visitor-related secondary effects on the scenic quality of Segment 2. Implementation of management actions related to visitor use management and facilities under Alternative 4 would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 2, mainly in the East Valley.

Curry Village and Campground. The park would remove 45 and retain 355 lodging units, and construct a new 40 site campground at Curry Village; and construct 72 campsites within the previously disturbed Former Upper and Lower Rivers Campgrounds. The park would also remove the Ahwahnee pool and campsites from Lower Pines (15), North Pines (34), and Upper Pines (2) (for archeological resource concerns). New structures would be constructed in developed areas, generally within previously developed sites. These actions would collectively result in a reduction in human-made structures in the Curry Village and Campground areas, and a return to more natural conditions. The impact on scenic resources would, therefore, be local, long-term, minor, and beneficial.

Yosemite Village Day-use Parking Area 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. Additional Yosemite Village day-use parking would bring more visitors and vehicles into these areas. However, as the project would occur within the footprint of an already developed area, and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse.

Camp 4 and Yosemite Lodge. The park would relocate the Superintendent's House (Residence 1) outside of the river corridor, and remove the Yosemite Lodge swimming pool, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for 3 busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour busses. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. Relocation of the Superintendent's House (Residence 1) and removal of the pool would have a local, long-term, negligible, beneficial effect on the scenic quality of the area through removal of human-made structures and returning it to a more natural condition. However, additional parking at Highland Court and Yosemite Lodge would bring more visitors and vehicles into these areas. In the latter case, the proposed actions would increase the development footprint within the area. However, as these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse. The effects of the solution to the pedestrian/vehicle conflict would be further analyzed through a subsequent environmental analysis, once a preferred design alternative is identified.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, long-term minor to moderate, beneficial impacts on scenic resources within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation and removal of concessioner housing, would also have local, long-term, negligible to minor, beneficial impacts on the scenic resources of Segment 2. Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.

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 one-acre oak recruitment zone in the vicinity of Odger's 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. These measures would have a local, long-term, negligible, beneficial impact on scenic resources in the vicinity of the former fuel station in Segment 4.

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

New high-density housing and parking would be constructed as infill development in Rancheria and a new remote visitor parking area would be constructed at Abbieville/Trailer Village, outside the 100-year floodplain. These actions would increase the number of human-made structures in the area. However, these areas are currently developed, and the addition of these structures would not substantially decrease the scenic quality

of the area. Overall, visitor use would be reduced from existing conditions, which would reduce the potential for ongoing visitor use impacts on the natural resources and associated secondary effects on the scenic quality of the area. Implementation of these actions would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 4. Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 5, 6, 7, and 8: South Fork Merced River

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 would be expected to decrease overall visitation within this Segments 5-8. As a result, the potential for ongoing visitor use impacts on the natural resources of Segments 5–8, and associated secondary effects on the scenic quality of these segments would be reduced. Implementation of these actions would result in local, long-term, minor, beneficial impacts on the scenic resources of Segments 5–8.

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. These actions would further reduce visitation and the number of human-made structures in the vicinity, and restore the area to more natural conditions. The resulting impact on scenic resources within Segment 7 would be local, long-term, minor, and beneficial.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, beneficial impacts on the scenic resources of Segments 5–8.

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

Restoration actions under Alternative 4 would improve the appearance of riverbanks, meadows, and riparian vegetation and some actions would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in management actions are proposed in existing developed areas and would not result in overall reduced scenic quality. In addition, visitor use capacity management would be implemented, resulting in visitor use being maintained at slightly less than or similar to existing levels, which would maintain the potential for ongoing visitor use impacts on natural resources, which could result in secondary effects on scenic resources. Overall, with implementation of MM-VEX-2, as appropriate, (see Appendix C), Alternative 4 would result in local, long-term, minor to moderate, beneficial impacts on scenic resources.

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

The discussion of cumulative impacts on scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 4. The projects identified below include those projects that have the potential to affect the scenic resources of the Merced River.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions that would contribute towards cumulative effects towards scenic resources under this alternative are the same as those listed for Alternative 1.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have beneficially limited uses through planning or restored vegetation and riverbanks, and management of vegetation that is blocking scenic views, although the overall impact remains adverse. Alternative 4 would result in local, long-term, moderate, beneficial impacts on scenic resources related to restoration activities throughout the planning area, removal of human-made structures, and reduced visitor use capacity, which result in overall improvement in the scenic quality of the planning area. Cumulatively, the impact on scenic resources would be local, 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

As discussed in the natural resources impact subsections of this chapter, Alternative 5 would result in similar park visitation compared to Alternative 1 (No Action) and ongoing visitor use impacts on natural resources, such as creation of informal trails, trampling of vegetation, and increased bank erosion, which result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources, and these visitor use impacts could continue similar to existing conditions.

Segment 1: Merced River Above Nevada Fall

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

Under Alternative 5, the Merced Lake Backpackers Camping Area would be retained. In addition, the Little Yosemite Valley and Moraine Dome Camping Areas would be retained, rather than being restored and converted to dispersed camping as under Alternative 2. Wilderness zone capacity would be maintained at existing levels. Restoration and restrictions on grazing at Merced Lake East Meadow, and other general restoration activities would be implemented. As such, the scenic quality of the area would be improved, but not to the degree as would occur under Alternative 2 because the designated camping areas would be

retained. Therefore, improvement in scenic quality in Segment 1 would be less under Alternative 5 than under Alternative 2 because areas of barren ground, designated camping areas, and other human-made structures would be retained; therefore, less restoration would be implemented. Maintenance of existing wilderness permit numbers could result in ongoing visitor use impacts on the natural resources of the area, and associated secondary effects on the scenic quality of the area, similar to existing conditions. Implementation of management actions related to visitor use management and facilities under Alternative 5 would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 1.

Merced Lake High Sierra Camp. The park would remove 11 of 22 historic canvas tents, reducing the capacity of the Merced Lake High Sierra Camp to 42 beds, and replace the flush toilets with composting toilets. Continued operation of the facility, albeit at reduced capacity, would result in impacts similar to those of Alternative 1 (No Action) as the major components of the facility and its visitors would remain. The resulting impact would be local, long-term, negligible, and adverse.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, negligible, beneficial impacts on scenic resources in Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Several of the Segment 2 actions to protect and enhance river values under Alternative 5 would be similar to those actions under Alternative 2 and would also result in an overall improvement in the scenic quality of this segment. Under Alternative 5, the park would remove campsites, restore meadow habitats, and mitigate effects of bridge scour through bioengineered techniques, all of which would improve the scenic character of the valley. At the same time, as part of these restoration efforts, the park would construct boardwalks at Ahwahnee and Slaughterhouse meadows. While these actions would introduce new changes to the physical landscape, they would also facilitate visitors' experience of these areas in a less impactful way than under Alternative 1. The Yosemite Lodge and Camp 4, and Northside Drive near Ahwahnee Meadow would be retained and continue to affect the scenic quality of these areas. Under Alternative 5, the Sugar Pine Bridge would remain in place for the near term. The park would commission a third party study concerning hydrologic impacts of the bridge. Along with this information, the park would evaluate the cultural, physical, biological, and economic tradeoffs associated with retention versus removal of the bridge. Implementation of management actions related to protecting and enhancing river values under Alternative 5 (including actions common to all alternatives) would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 2A (East Valley) and Segment 2B (West Valley).

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

The park would increase the number of campsites under Alternative 5 over that of Alternative 2. In addition, the park would construct new walk-in campgrounds at former Upper and Lower Rivers, and Upper Pines campgrounds. The number of campsites at other existing campgrounds would also increase. Riverbank, riparian, and other restoration actions under Alternative 5 would be similar to those under Alternative 2 but less intensive. The riverbanks in the vicinities of Stoneman and Sugar Pine Bridges would be restored and/or managed; however, the bridges would be retained for the foreseeable future. Despite the previously described restoration actions that would occur under all action alternatives and those for Alternative 5, views of the Merced River with the these areas in the foreground would continue to be impacted by levels of

visitation similar to those under Alternative 1, and the physical infrastructure required to accommodate those visitors, including especially the increase facilities necessary to accommodate increased overnight visitation, including views from Happy Isles bridge (Scenic Vista point 14), Clark's Bridge (Scenic Vista point 7), Housekeeping footbridge (Scenic Vista point 92), Housekeeping Beach (Scenic Vista point 26), Housekeeping Bridge Trail, Southside Drive, and the adjacent bicycle path and trails that cross the area. In addition, views of North Dome, Glacier Point, Yosemite Falls, El Capitan, and Cathedral Rocks from the scenic vista points with the campground areas in the foreground would also continue to experience local, long-term, minor, adverse impacts under Alternative 5.

Lodging units and parking spaces would increase slightly under Alternative 5. Curry Village would add approximately 82 units. Yosemite Lodge would be retained, rather than converted to day use as under Alternative 2. However, these actions would occur within existing developed areas.

Valley visitor capacity would be maintained at levels similar to existing conditions. Described more fully in the following sections, while Alternative 5 would expand camping and overnight accommodations compared with Alternative 2, restoration activities and more active visitor capacity management would improve the scenic quality of Segment 2 and stabilize ongoing visitor use impacts on the natural resources of the area that could result in secondary effects on the scenic quality of the area. Over the long-term, implementation of management actions related to visitor use management and facilities under Alternative 5, mainly in Segment 2 (East Valley) would reduce existing local scenic resource impacts to negligible adverse levels.

Curry Village and Campground. The park would construct new units at Boys Town, bringing the total number of new and retained units at Curry Village to 482, including 301 tents, and construct 72 campsites within the previously disturbed Former Upper and Lower Rivers Campgrounds. The park would remove campsites from Lower Pines (5), North Pines (14), and Upper Pines (2) (for archeological resource concerns). The new 189-space Recreation Center parking lot and other new structures would be constructed in developed areas, generally within previously developed sites. Campsite removal would reduce human-made structures in the Curry Village and Campground areas and return them to more natural conditions. However, new lodging and campsite development would offset these benefits on scenic resources, resulting in local, long-term, minor, adverse scenic resource impacts.

Yosemite Village Day-use Parking Area and Yosemite Village. A remodeled Concessioner Maintenance and Warehouse Building with a 5,000-square-foot addition would be constructed to accommodate essential functions of the removed Concessioner General Office building. The park would construct a traffic circle at the intersection of Northside and Yosemite Village Drives, 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. The traffic circle, new intersection, and additional Yosemite Village day-use parking would increase the development footprint and bring more visitors and vehicles into these areas. However, as these projects would occur largely within the footprint of an already developed area, and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse.

Camp 4 and Yosemite Lodge. The park would demolish the Superintendent's House (Residence 1), restore the disturbed footprint of the former Yosemite Lodge units removed after being damaged by the 1997 flood, remove temporary employee housing units and return the Highland Court area to parking purposes as originally built, and redevelop an area west of Yosemite Lodge to provide an additional parking for 300 automobiles and 22 tour buses. Buses staying for 4-6 hours would park in the 22 designated bus parking spaces in the West of Lodge Parking Area. Pedestrian/vehicle conflicts on Northside Drive between

the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. Demolition of the Superintendent's House and Garage (Residence 1) would have a local, long-term, negligible, beneficial effect on the scenic quality of the area through removal of human-made structures and returning it to a more natural condition. However, additional parking at Highland Court and Yosemite Lodge would bring more visitors and vehicles into these areas. In the latter case, the proposed actions would increase the development footprint within the area. However, as these actions would occur within already developed areas and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse. The effects of the solution to the pedestrian/vehicle conflict would be further analyzed through a subsequent environmental analysis, once a preferred design alternative is identified.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, long-term minor to moderate, beneficial impacts on scenic resources within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities, including reduced total daily visitation and concessioner employee housing, and increased lodging and camping, would also have local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.

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 one-acre oak recruitment zone in the vicinity of Odger's 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. These measures would have a local, long-term, negligible, beneficial impact on scenic resources in the vicinity of the former fuel station in Segment 4.

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

New high-density housing and parking would be constructed as infill development in Rancheria and El Portal Town Center, and a new remote visitor parking area and RV campground with 40 RV campsites would be constructed at Abbieville/Trailer Village, outside the 100-year floodplain. These actions would increase the number of human-made structures in the area. However, these areas are currently developed, and the addition of these structures would not substantially decrease the scenic quality of the area. Overall, visitor use would be reduced from existing conditions, which would reduce the potential for ongoing visitor use impacts on the natural resources and associated secondary effects on the scenic quality of the area. Implementation of these actions would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 5, 6, 7, and 8: South Fork Merced River

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 would not be expected to substantially change overall visitation within Segments 5-8. As a result, the potential for ongoing visitor use impacts on the natural resources of Segments 5–8, and associated secondary effects on the scenic quality of these segments would be similar to those of Alternative 1 (No Action). Implementation of these actions would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segments 5–8.

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. These actions would reduce overnight visitation and the number of human-made structures in the vicinity, and restore the area to more natural conditions. The resulting impact on scenic resources within Segment 7 would be local, long-term, negligible, and beneficial.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would also have local, long-term, negligible, beneficial impacts on the scenic resources of Segments 5–8.

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

Alternative 5 includes restoration actions that would improve the appearance of riverbanks, meadows, and riparian vegetation, and some actions that would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in Alternative 5 management actions are proposed in existing developed areas and would not result in overall reduced scenic quality. In addition, visitor use capacity management would be implemented, allowing the NPS to manage visitor use at existing levels and to limit the potential for ongoing visitor use impacts on natural resources that could result in secondary effects on scenic resources. Overall, with implementation of MM-VEX-2, as appropriate, (see Appendix C), Alternative 5 would result in local, long-term, minor, beneficial impacts on scenic resources.

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

The discussion of cumulative impacts on scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 5. The projects identified below have the potential to affect the scenic resources of the Merced River.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions that would contribute towards cumulative effects towards scenic resources under this alternative are the same as those listed for Alternative 1.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have beneficially limited uses through planning or restored vegetation and riverbanks, and management of vegetation that is blocking scenic views, although the overall impact remains adverse. Alternative 5 would result in local, long-term, minor to moderate, beneficial impacts on scenic resources related to restoration activities throughout the planning area, removal of human-made structures, and reduced visitor use capacity, which could result in overall improvement in the scenic quality of the planning area. Cumulatively, the impact on scenic resources would be local, long term, minor to moderate, 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

As discussed in the natural resources impact subsections of this chapter, Alternative 6 would accommodate an increase in park visitation compared with Alternative 1 (No Action) and ongoing visitor use impacts on natural resources, such as creation of informal trails, trampling of vegetation, and increased bank erosion. These visitor use impacts would result in secondary scenic resources impacts where affected natural resources areas are in scenic views or are the foreground to scenic resources and could continue similar to existing conditions.

Segment 1: Merced River Above Nevada Fall

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

The Merced Lake Backpackers, Little Yosemite Valley, and the Moraine Dome Camping Areas would be retained, rather than being restored and converted to dispersed camping as under Alternative 2. Wilderness zone capacity would be maintained at existing levels, but managed to specific limitations within the river corridor. Restoration and grazing restrictions at Merced Lake East Meadow, and other general restoration activities would be implemented. As such, the scenic quality of the area would be improved, but not to the degree as would occur under Alternative 2 because of the retention of designated camping areas. Therefore, improvement in scenic quality in Segment 1 would be less under Alternative 6 than under Alternative 2 because areas of barren ground, designated camping areas, and other human-made structures would be retained and, therefore, less restoration would be implemented. Implementation of management actions related to visitor use management and facilities under Alternative 6 would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 1.

Merced Lake High Sierra Camp. Continued operation of the facility would result in impacts similar to those of Alternative 1 (No Action). The resulting impact would be local, long-term, minor, and adverse.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, negligible, beneficial impacts on scenic resources in Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Segment 2 actions under Alternative 6 would be similar to Alternative 2 and would also result in an overall improvement in the scenic quality of Segment 2. For many actions, the meadow or riverbank restoration approach proposed under Alternative 6 would be different than under Alternative 2. In addition, slightly less road area would be removed at Ahwahnee Meadow and the Sugar Pine Bridge would be retained. However, the scenic quality of the restoration areas after restoration activities would be similarly improved. Implementation of management actions related to protecting and enhancing river values under Alternative 6 (including actions common to all alternatives) would result in local, long-term, moderate, beneficial impacts on the scenic resources of Segment 2A (East Valley) and Segment 2B (West Valley).

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

A greater number of campsites would be retained under Alternative 6 than under Alternative 2. In addition, an RV campground and a walk-in campground would be developed. However, riverbank, riparian, and other restoration actions would be implemented, as under Alternative 2. The proposed expanded campgrounds are in heavily wooded areas but could be seen from bicycle paths adjacent to the river, Northdside Drive and Happy Isles Loop Road. The riverbank downstream of Stoneman and Sugar Pine bridges would be restored; however, the bridges would be retained. Restoration would occur at the former Upper River and Lower River campgrounds; however, approximately half the acreage of restoration would be implemented compared to Alternatives 2 through 4. Views of the river with the these areas in the foreground would not be improved under Alternative 6 to the same degree as under Alternative 2, including views from Happy Isles bridge (Scenic Vista point 14), Clark's Bridge (Scenic Vista point 7), Housekeeping footbridge (Scenic Vista point 92), Housekeeping Beach (Scenic Vista point 26), Housekeeping Bridge Trail, Southside Drive, and the adjacent bicycle path and trails that cross this area of Segment 2. In addition, views of North Dome, Glacier Point, Yosemite Falls, El Capitan, and Cathedral Rocks from the scenic vista points with the campground areas in the foreground would not be improved under Alternative 6 to the same degree as under Alternative 2.

In Curry Village, most lodging units and parking spaces would be retained. Yosemite Lodge would be retained, rather than converted to day use as under Alternative 2. These areas are in existing developed areas.

The Valley visitor capacity would increase compared with Alternative 1 (No Action). Alternative 6 would retain more campground and overnight accommodations compared with Alternative 2, and ongoing visitor use impacts on the natural resources of the area could result in secondary effects on the scenic quality of the area could increase compared to Alternative 2. However, extensive meadow and riverbank restoration would be implemented. Implementation of management actions related to visitor use management and facilities under Alternative 6 would result in local, long-term, negligible to minor adverse impacts on the scenic resources of Segments 2A (East Valley) and 2B (West Valley).

Curry Village and Campground. The park would construct new hard-sided units at Boys Town, bringing the total number of new and retained units at Curry Village to 453, and construct 72 campsites within the previously disturbed Former Upper and Lower Rivers Campgrounds. The park would remove campsites from Lower Pines (5), North Pines (14), and Upper Pines (2) (for archeological resource concerns). New structures would be constructed in developed areas, generally within previously developed sites. Campsite

removal would reduce human-made structures in the Curry Village and Campground areas and return them to more natural conditions. However, new lodging and campsite development would offset these benefits on scenic resources, resulting in local, long-term, minor, adverse scenic resource impacts.

Yosemite Village Day-use Parking Area and Yosemite Village. The park would expand the Concessioner Warehouse Building to accommodate Concessioner General Office functions, construct a pedestrian underpass, a traffic circle and a roundabout, 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 administrative facilities expansion, roundabout, and additional Yosemite Village day-use parking would increase the development footprint and bring more visitors and vehicles into these areas. However, as these projects would occur largely within the footprint of an already developed area, and not obstruct scenic vistas, the impacts upon scenic resources would be local, long-term, minor, and adverse.

Camp 4 and Yosemite Lodge. The park would retain the Yosemite Lodge pool, relocate bicycle rentals outside of the river corridor, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for 3 busses, and redevelop an area west of Yosemite Lodge to provide an additional parking for 300 automobiles and 15 tour busses. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. However, additional parking at Highland Court and Yosemite Lodge, along with new camping and parking at Eagle Creek Campground, would bring more visitors and vehicles into these areas. The proposed actions would increase the development footprint within the area. With respect to the former, these actions would occur within already developed areas and not obstruct scenic vistas. With respect to the latter, increased human-made structures in the mostly undeveloped West Valley would have a local, long-term, minor, and adverse effect on the scenic quality of this area. Impacts to scenic resources resulting from the solution to the pedestrian/vehicle conflict at Yosemite Lodge will be analyzed in follow-on compliance.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on scenic resources within Segments 2A (East Valley) and 2B (West Valley). Actions to manage user capacities, land use, and facilities, including increased total daily visitation, overnight lodging and camping, and reduced employee housing would have local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, adverse impacts on the scenic resources of Segment 2B (West Valley), namely through the increase in visitor-related impacts.

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 one-acre oak recruitment zone in the vicinity of the 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. These measures would have a local, long-term, negligible, beneficial impact on scenic resources in the vicinity of the former fuel station in Segment 4.

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

New high-density housing and parking would be constructed as infill development in Rancheria and Abbieville/Trailer Village, outside the 100-year floodplain. These actions would increase the number of human-made structures in the area. However, these areas are currently developed, and the addition of these structures would not substantially decrease the scenic quality of the area. Overall, visitor use would be reduced from existing conditions, which would reduce the potential for ongoing visitor use impacts on the natural resources and associated secondary effects on the scenic quality of the area. Implementation of these actions would result in local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 4. Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, adverse impacts on the scenic resources of Segment 4.

Segments 5, 6, 7, and 8: South Fork Merced River

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 would not be expected to substantially change overall visitation within Segments 5-8. As a result, the potential for ongoing visitor use impacts on the natural resources of Segments 5–8, and associated secondary effects on the scenic quality of these segments would be similar to those of Alternative 1 (No Action). Implementation of these actions would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segments 5–8.

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. These actions would reduce overnight visitation and the number of human-made structures in the vicinity, and restore the area to more natural conditions. The resulting impact on scenic resources within Segment 7 would be local, long-term, negligible, and beneficial.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would also have local, long-term, negligible, beneficial impacts on the scenic resources of Segments 5–8.

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

Alternative 6 includes restoration actions that would improve the appearance of riverbanks, meadows, and riparian vegetation, and some actions that would result in removal of human-made structures and paved/graded areas. These actions would improve the scenic quality of restoration areas, and views of the river and meadows in the vicinity of restoration areas. In addition, views from scenic vistas with restoration areas in the foreground would be improved. New facilities or structures included in management actions are primarily proposed in existing developed areas and would not result in overall reduced scenic quality. Visitor use capacity management would increase, which could increase the potential for ongoing visitor use impacts on natural resources of that could result in secondary effects on scenic resources. Overall, with

implementation of MM-VEX-2, as appropriate, (see Appendix C), Alternative 6 would result in local, long-term, minor, beneficial impacts on scenic resources.

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

The discussion of cumulative impacts on scenic resources is based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with the potential effects of Alternative 6. The projects identified below include those projects that have the potential to affect the scenic resources of the Merced River.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions that would contribute towards cumulative effects towards scenic resources under this alternative are the same as those listed for Alternative 1.

Overall Cumulative Impact

Overall development and recreational uses in the Merced River watershed have resulted in localized, long-term, minor to moderate, adverse impacts on scenic resources. A number of past, present, and future projects have beneficially limited uses through planning or restored vegetation and riverbanks and management of vegetation that is blocking scenic views, although the overall impact remains adverse. Alternative 6 would result in local, long-term, minor to moderate, beneficial impacts on scenic resources related to restoration activities throughout the planning area, removal of human-made structures, and reduced visitor use capacity, which result in overall improvement in the scenic quality of the planning area. Cumulatively, the impact on scenic resources would be local, long term, minor, and beneficial.

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Visitor Experience/Recreation

Affected Environment

Visitors to natural environments may be aware of resource conditions along trails and at recreation sites; however it is somewhat difficult to measure human perceptions of beneficial or adverse impacts in a National Park. Generally, visitors' perceptions of environmental impacts tend to be limited to what they can easily see, and different people may have different perceptions based on their prior experience, education with regards to the particular environmental issues, and the activities they engage in within any given park location. This section relies on a combination of park staff experience, published literature and public surveys to describe potential impacts to the visitor experience.

Regulatory Framework

The Wilderness Act of 1964

The Wilderness Act of 1964 directed the Secretary of the Interior to study federal lands within the national wildlife refuge and national park systems, and recommended to the President those lands suitable for inclusion in a national wilderness preservation system. The Secretary of Agriculture was similarly directed to study and recommend such lands within the national forest system. The act grants Congress the final decision regarding designations. The Wilderness Act defines wilderness as including the following characteristics:

> *…wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation…*

The Wilderness Act prohibits certain uses in designated wilderness including motor vehicles, motorized equipment, landing of aircraft, other forms of mechanized transport, and structures or installations except as necessary to meet the minimum requirements for the administration of the area for the purpose of the Act.

Segments 1, 5, and 8 are located in designated wilderness areas and are therefore subject to the management provisions of the Wilderness Act. Within Segment 1, the area surrounding the Merced Lake High Sierra Camp is a Potential Wilderness Addition. To the greatest extent possible, a Potential Wilderness Addition is managed as wilderness. This area would become wilderness when current prohibited or inconsistent uses have ceased.

Title 36 of the Code of Federal Regulations

"The regulations in this chapter provide for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the National Park Service. These regulations would be utilized to fulfill the statutory purposes of units of the National Park System: to conserve scenery, natural and historic objects, and wildlife, and to provide for the enjoyment of those resources in a manner that would leave them unimpaired for the enjoyment of future generations".

Concessions Management Improvement Act of 1998

The Concessions Management Improvement Act requires that contracts for visitor facilities and services "be limited to those that are necessary and appropriate for public use and enjoyment" of the national park area in which they are located, "and that are consistent to the highest practicable degree with the preservation and conservation of the areas." Title 36 of the Code of Federal Regulations (36 CFR 51) outlines the requirements for the preservation of the parks and administration of commercial service operations. In order to implement the requirements of law, the National Park Service has Management Policies. Management policies are guiding principles or procedures that set the framework and provide direction for management decisions. (http://www.nps.gov/policy/DOrders/thingstoknow.htm)

Superintendent's Compendium

The *Superintendent's Compendium* is a compilation of designations, closures, permit requirements, fees, and other restrictions made by the superintendent, in addition to what is contained in Title 36 of the Code of Federal Regulations and other applicable federal statutes and regulations for both the park and El Portal Administrative Site.

Director's Order #17: National Park Service Tourism

The purpose of the Director's Order #17 calls for "the promotion and support of sustainable, responsible, informed, and managed visitor use through cooperation and coordination with the tourism industry." This purpose is elaborated upon by Operating Premises and Operational Policies that guide management decisions relating to tourism activities at Yosemite National Park. (http://www.nps.gov/policy/DOrders/thingstoknow.htm)

Director's Order #83: Public Health

Director's Order #83 outlines measures the NPS will take to ensure compliance with prescribed public health policies, practices, and procedures. This order establishes NPS policy with respect to all public health activities within Yosemite National Park, regardless of whether those activities are carried out by NPS and other federal employees, or by other organizations, including the U.S. Public Health Service. The core policies include prevention; control; and investigation of food-, water-, and vector-borne diseases in the national parks (NPS 2004a).

The National Trails System Act

The National Trails System Act provides for the ever-increasing outdoor recreation needs of an expanding population. To promote the preservation of public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the nation, trails should be established primarily near the urban areas of the nation, and secondarily within scenic areas, such as Yosemite National Park, and along historic travel routes of the nation, which are often more remotely located (NPS 2009).

NPS 2006 Management Policies

The *2006 Management Policies* state that the purpose of NPS interpretive and educational programs is to advance this mission by providing 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 so by forging a connection between park resources, visitors, the community, and the national park system (NPS 2006). Yosemite National Park provides a variety of resources and support staff that allow these programs to advance the public's understanding of the park's qualities.

Overview of Visitation and Visitor Demographics

People travel to Yosemite National Park for a multitude of reasons and their experiences are highly individualized. Some visit the park in the company of friends and family to marvel at its iconic landscape features — its dramatic waterfalls and geologic wonders. Others seek the solitude and primitive nature of the park's wilderness. Some come to study the park's unique and diverse plant and animal life. Others are attracted by its excellent recreational opportunities, including rock climbing and bouldering, cross country skiing, and backcountry hiking and camping. Thus, the continuum of visitor experiences extends from highly social to isolated, from independent to directed, from spontaneous to controlled, from easy to challenging, and from natural to more urban (NPS 2000c). The Merced River plays an important role in shaping these experiences. This section describes the types of visitor facilities and services, including educational and interpretive services, overnight accommodations, and recreational opportunities available throughout the Merced River corridor within the study area, which contribute to the overall visitor experience.

Annual Parkwide Visitation

Annual park visitation has risen 22% in the last five years, from a 20-year low of 3.24 million visitors in 2006, to 3.95 million in 2011. The record for visitation was set in 1996, when the park received just over four million visitors (NPS 2012a). Park visitation over the last 20 years is shown in Table 9-99.

TABLE 9-99: ANNUAL VISITATION, YOSEMITE NATIONAL PARK 1990-2011

Year	Annual Visitation		Year	Annual Visitation
1990	3,124,939		2001	3,368,731
1991	3,423,101		2002	3,361,867
1992	3,819,518		2003	3,378,664
1993	3,839,645		2004	3,280,911
1994	3,962,117		2005	3,304,144
1995	3,958,406		2006	3,242,644
1996	4,046,207		2007	3,503,428
1997	3,669,970		2008	3,431,514
1998	3,657,132		2009	3,737,472
1999	3,493,607		2010	3,901,408
2000	3,400,903		2011	3,951,393

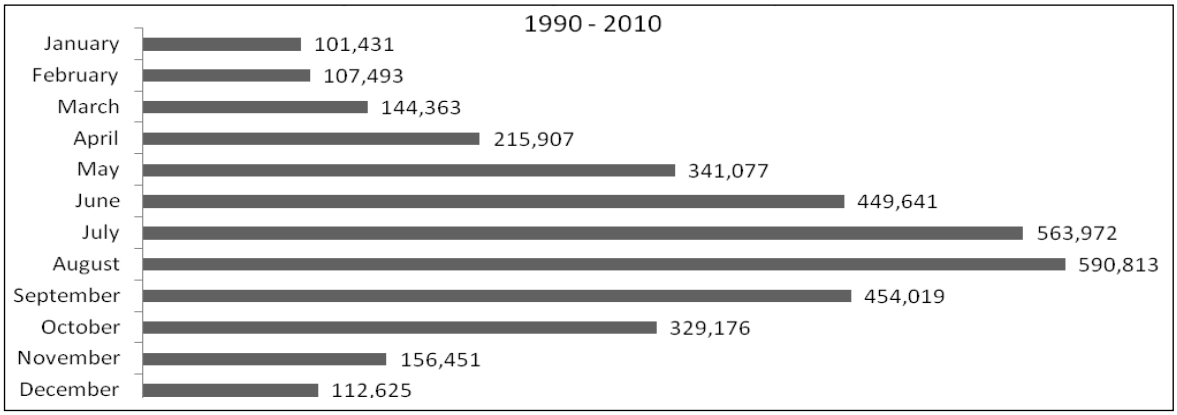
SOURCE: NPS Stats. Accessed via Internet on June 29, 2012 at http://www.nature.nps.gov/stats/park.cfm.

Monthly Parkwide Visitation

Timing and duration of park visitation varies widely throughout the year. As Figure 9-39 indicates, visitor attendance is highest between the months of May and October. Between 1990 and 2010, August has been the month of highest average visitation, while January has been the lowest.

These trends vary slightly for 2011 visitation counts; July had the highest visitation count with 704,553 people, and February had the lowest with 93,588 people (http://www.nature.nps.gov/stats/viewReport.cfm).

Figure 9-39: Average Park Visitation by Month (1990–2010)



Daily Parkwide Visitation

During July 2011, the month with the highest park visitation, there were an average of 22,728 daily visitors to the park. During February 2011, the month with the lowest park visitation, the number of average daily visitors to the park was 3,342 (NPS Stats. 2012).

Visitor Survey Responses

Parkwide Visitor Use Survey. The NPS periodically conducts visitor surveys to help park managers better understand the interests and needs of park visitors. The most recent parkwide survey was conducted in 2009. The survey looked at visitor origin and destination, reason for visit, duration of visit, activities of interest, and many other topics. Among those surveyed, 36% reported entering the park through the south entrance, while 21% reported entering through the Arch Rock entrance. The majority of those surveyed (57%) reported never having previously visited the park in their lifetime. Overnight visitors (within or near the park) constituted 69% of respondents. Duration of day visits averaged 7.2 hours, while length of stay for overnight visitors averaged 57 hours (2.4 days) (Blotkamp et al. 2009).

The survey also asked visitors about where and how they spent their time while in the park. Table 9-100 lists some of the most commonly identified destinations within the park. As the table indicates, the vast majority of respondents (70%) reported visiting Yosemite Valley generally, with specific destinations in the valley also frequently cited. Respondents named viewing scenery (93%), taking a scenic drive (64%), and day hiking (54%) as common activities within the park. When asked about primary activities in which they engaged, respondents similarly identified viewing scenery (45%), day hiking (27%), and taking a scenic drive (27%). This study indicates that visitor activities are concentrated within the Yosemite Valley and Wawona (Blotkamp et al. 2010).

River Corridor Visitor Use Survey. Completed in July of 2012, *Boats, Beaches and Riverbanks: Visitor Evaluations of Recreation on the Merced River in Yosemite Valley* (Whittaker and Shelby 2012) provides the most recent visitor use data. Data from this survey are more relevant to actions proposed for Segment 2 as this survey was specific to Yosemite Valley. The survey was conducted in July 2011 over the course of 15 days with 806 individuals completing the survey. All respondents were Merced River shore or boating users. Shore users included those who were relaxing, picnicking, swimming, hiking, or biking. Key study findings include:

- 56% of respondents were staying in Yosemite Valley.
- 85% were spending two or more days in the park.
- The most common river activities in which participants engaged during this visit were relaxing on shore (76%), swimming (58%), picnicking (48%), hiking (44%), boating (29%), biking (27%), and fishing (5%).
- Participation in activities among river users in this survey versus parkwide users in the 2009 study differed. River users were more likely to picnic (48% vs. 33%) and bicycle (27% vs. 12%), but less likely to go hiking (44% vs. 54%).

TABLE 9-100: PERCENT OF VISITORS AT COMMON VISITOR DESTINATIONS

Visitor Destination	Percent of Visitors
Yosemite Valley	70%
Yosemite Falls	59%
Bridalveil Fall	52%
El Captain Meadow	43%
Wawona	33%
Vernal Fall	28%
Half Dome	22%
Indian Cultural Museum	13%
Pioneer Yosemite History Center	12%
Little Yosemite Valley	8%
Yosemite Wilderness	5%
High Sierra Camps	3%

SOURCE: Blotkamp, Ariel et al. 2010. *Yosemite National Park Visitor Study*. NPS Science Program.

This study (Whittaker and Shelby 2012) also evaluated crowding. Generally, if greater than 80% of respondents report feeling crowded while participating in an activity, the area is considered greatly over capacity. Activities where greater than 80% of visitors reported feeling crowded were all transportation related: driving roads (90%), finding parking (99%), and riding shuttles (83%). If 65% to 80% of respondents report feeling crowded while participating in an activity, the area is considered over capacity. Activities where between 65% and 80% of visitors reported feeling crowded were hiking and biking (68%). Activities where between 35% (low normal) and 65% (high normal) of visitors reported feeling crowded were boating (60%), relaxing (54%), and swimming (45%).

The following sections generally describe the types of visitor facilities and services, overnight lodging accommodations, campgrounds, and recreation activities available throughout the Merced River corridor. This is followed by a description of the specific visitor facilities and services, overnight lodging accommodations, campgrounds, and recreation activities in each river segment.

Visitor Facilities and Services Overview

Commercial Services

Yosemite offers a variety of commercial visitor services, including lodging, food and beverage, and retail. Among those interviewed for the 2009 visitor use study, 46% reported eating in a park restaurant; 43% shopped in a store other than the Yosemite Valley Visitor Center bookstore; and 34% shopped within the

Valley Visitor Center bookstore (Blotkamp et al. 2010). The majority of the park's visitor services are concentrated within Yosemite Valley. Yosemite Village, which is approximately 90 acres, is the core area for most of the development and day use in Yosemite Valley. Visitor facilities and services are also offered at Yosemite Lodge, Curry Village, and The Ahwahnee. Beyond Yosemite Valley, commercial visitor services within the study area are relatively few and exist only in El Portal and Wawona and at the Merced Lake High Sierra Camp.

Trails

Trails and trail types within the study area range from easy to strenuous and short to long, and can be either paved or unpaved. There are 78 miles of trails within the study area — approximately 30 miles within the designated wilderness and 48 miles in non-wilderness areas.

Although no restrictions have been established for day hiking in the wilderness with the exception of hiking to Half Dome, which requires a separate permit, permits are required for overnight stays in the wilderness. Wilderness permits are issued to a limited number of people for each trailhead in order that visitors may experience solitude associated with the wilderness. Sixty percent of the permits can be reserved ahead of time and 40% are available on a first-come, first-served basis the day before departure. Wilderness permits are issued to groups of hikers. Groups are limited to 15 individuals per group when traveling on established trails and eight individuals per group when traveling off-trail more than 0.25 mile. Groups traveling with stock are limited to 25 head of pack and saddle stock per group (NPS 1999b).

Stock Use

Pack stock (horses, mules, burros and llamas) use in Yosemite National Park falls into three categories: commercial, administrative, and private. Parkwide, commercial trips account for approximately 50% of stock use parkwide and are booked through the park concessioner or pack stock operations located outside the park. Administrative stock use accounts for approximately 45% of stock use parkwide with park employees using stock to "clear trails, support trail crew camps, maintain composting toilets, perform research, perform resource management activities, conduct backcountry search and rescue activities, and conduct backcountry ranger patrols." The remaining 5% of stock use is private (Acree et al. 2010). In 2010, within the Merced River corridor, 383 stock nights (overnight trips where stock was used) were recorded (83 commercial and 300 administrative).

There are two commercial stables in the study area — the Yosemite Valley stable and the Wawona stable. Guided stock rides are available from both stables, and in 2012 rides of either two-hours or a half-day in duration were available. Guided pack and saddle trips are also available for longer visits to the wilderness and take visitors to one or more of the High Sierra Camps. The number and duration of rides varies from year to year as determined by park administration and is dependent upon trail conditions and visitation. Therefore, the actual number of days that the stables are open varies from year to year. In 2011, a total of 14,400 stock day trips (defined as one person/one horse) were taken from these two stables:

- Yosemite Valley stable
  - 2 hour = 11,250
  - half day = 1,500
- Wawona stable
  - 2 hour = 1500
  - half day = 100
  - full day = 50

Title 36 of the Code of Federal Regulations and the Superintendent's Compendium regulate stock use within Yosemite National Park. The use of horses or pack animals is permitted on all unpaved foot trails in

Yosemite Valley and in Wawona on the Wawona Meadow Loop Road, Four-Mile Road, and Eleven-Mile Road. Bicycle paths, tram roads, shuttle bus routes, and the Mirror Lake Road are specifically closed to stock use except for administrative activities. Stock use is also permitted on all park trails except the Mist Trail from Happy Isles to Nevada Fall and the Lower Chilnualna Fall Foot Trail in Wawona.

Wilderness overnight stock parties on designated trails are limited to 25 head of stock and 15 people. Wilderness overnight stock parties using authorized, non-maintained stock routes are limited to 12 head of stock and eight people. The maximum number of stock for parties not spending nights in the wilderness is 25 head of stock on designated trails and 12 head on other authorized stock routes.

Loose herding and grazing are prohibited in front-country areas, and established front-country campsites must be cleaned daily (i.e., manure and uneaten fodder removed). Watering facilities must be used when provided.

Interpretation and Education Services

A heritage of stewardship is perpetuated through opportunities for education and interpretation of the Merced River and its unique values. These opportunities represent a proactive approach to protecting the river from human impacts. Park interpreters and volunteers serve a primary natural and cultural resource preservation role in the park. Interpreters connect people to the meaning and significance of the park by conveying information and educational programs to visitors and park employees about the history and function of park ecosystems and the relationship between various park resources. Interpretive and educational services include educational/school programs; field seminars; evening programs and ranger-led walks; valley-floor tram tours; audio-visual presentations at park visitor centers; interpretive wayside exhibits; cultural history museums; park open houses (primarily a tool to provide information about park planning projects); and published materials available at entrance stations, visitor centers, and campground and lodging registration desks. Most publications, as well as Web-based and social interpretive media, address values in Segments 1–8, while on-site programs and products are focused within three segments of the river: Yosemite Valley, Merced River Gorge, and Wawona.

Information and Materials. The NPS provides visitors with published information regarding Yosemite National Park in many different formats. These include Yosemite National Park's Web site, official park mailings, and e-newsletter updates. Information is also distributed at entrance stations and visitor centers and includes the free *Yosemite Guide* newspaper (published eight times a year), a free park brochure/map, handouts on self-guided nature trails, and supplemental education materials and fact sheets. (Portions of the *Yosemite Guide* are translated into German, French, Spanish, Italian, Chinese, and Japanese.) Information includes travel and directions to the park; important information for planning visits (e.g., seasonal weather conditions and road closures); activities and special events in the park; lodging and campground reservation information; information on park planning projects; and a variety of maps and graphics to provide orientation to the park's roads, features, facilities, services, and trails. It also serves as a primer on Yosemite's natural and cultural history and scenic beauty.

Park staff offer a wide range of media (e.g., the orientation audio-visual program at the Yosemite Valley Visitor Center) and interpretive programs to assist visitors in understanding the park's natural and cultural resources. The park's primary concessioner also provides information on lodging and other visitor services on their Web site, as well as interpretive programs at guest lodges and the High Sierra Camps. In addition, park partners, such as the Yosemite Conservancy and NatureBridge, collaborate with the NPS to provide evening programs and information about park events and natural history.

Facilities. Yosemite Village and Wawona each have a visitor center and a wilderness center. In Wawona, these functions are combined at the Wawona Visitor Center at Hill's Studio. The Yosemite Valley Wilderness Center, the Nature Center at Happy Isles, and the Wawona Visitor Center are open seasonally during the summer. The Yosemite Valley Visitor Center is open year-round to provide visitors with wilderness trip planning information as well as permits during the winter when the Yosemite Valley Wilderness Center is closed. Additional information on park facilities, visitor services, and wilderness trip planning is available at the seasonal information and permit station at Big Oak Flat and from registration staff at campgrounds and lodging facilities. Commercial bus operators also provide orientation and information to visitors transported to and from the park. Visitors can also gain information from self-guided brochures and interpretive wayside exhibits throughout the park.

Programs. A wide range of interpretive programs and materials are available to the public (see Table 9-101). Programs are offered by several entities and cover a wide variety of topics, including geology, astronomy, botany, wildlife, trees, hydrology, cultural history (American Indian, Buffalo Soldiers, settlements, and modes of transportation), Junior Ranger programs, wilderness, fire, rock climbing, and bouldering. Programs range in duration from less than 1 hour to all-day hikes and multi-day seminars and residential field science experiences. Interpretive hikes venturing into the Yosemite Wilderness aim to support wilderness management by increasing visitor understanding of park resources and management concerns.

Overnight Lodging Accommodations

There are 1,160 units of overnight lodging available in the Merced River corridor at six concessioner-operated facilities: Yosemite Lodge, Housekeeping Camp, Curry Village, The Ahwahnee, the Wawona Hotel, and the Merced Lake High Sierra Camp. Facilities range from rustic tent cabins to deluxe hotel rooms and cabins. In addition, private lodging accommodations available within the corridor consist of the Yosemite View Lodge in El Portal and many independently owned, small-scale operations in Wawona.

The 2009 visitor use survey, described previously, found that 58% of visitors who stayed overnight within the park stayed in lodging (Blotkamp et al. 2010). During the summer, occupancy at lodging units in Yosemite Valley is very high.

Camping Areas

There are nine designated camping areas within the Merced River Corridor, providing 565 campsites in Yosemite Valley and Wawona and three designated camping areas in the Yosemite Wilderness. Some of these areas offer facilities, such as restrooms with flush toilets, running water, trash, and recycling collection. Others are more primitive, offering only compost toilets and food storage lockers. Camping areas within the main stem and South Fork Merced River corridor exist in the wilderness area above Nevada Fall (Segment 1), in Yosemite Valley (Segment 2), and Wawona (Segment 7). There are no designated camping areas in the Merced River gorge or El Portal (Segments 3 and 4) or in the South Fork Merced River corridor, outside of Wawona (Segments 5, 6, and 8). The 2009 visitor use survey, described previously, found that among visitors who stayed overnight within the park, 31% tent camped in a developed camping area, while 11% stayed at a backcountry campsite (Blotkamp et al. 2010). During the summer, campgrounds are usually 100% occupied on weekends and on many weekdays.

TABLE 9-101: INTERPRETIVE AND EDUCATIONAL SERVICES IN THE RIVER CORRIDOR

Organization	Yosemite Valley	Yosemite Wilderness	Wawona/El Portal
National Park Service	• Ranger-led walks, talks • Self-guided nature trails • Interpretive performances, slideshows, audio-visual programs • Interpretive wayside exhibits • Nature Center at Happy Isles • Museum, visitor center, and trail exhibits • Research library • Indian Village of Ahwahnee • Indian Cultural Center (planned) • History — Yosemite Cemetery • Interpretive publications • Evening programs • Open-air tram tours	• Multi-day ranger-guided High Sierra Camp loop trips that include a stop at the Merced Lake High Sierra Camp • Evening programs	• Environmental Living Program • Stage Coach Living History Program • Ranger-led walks, talks • Wawona Campground • Pioneer Yosemite History Center • Evening programs (EP) • Wawona Visitor Center
Delaware North Companies Parks and Resorts at Yosemite	• Rock climbing classes (Yosemite Mountain School) • Interpretive performances (Ranger Ned) • Interpretive talks, slideshows, audiovisual programs • Guided hikes • Bus tours • Open air tram tours	• Guided wilderness trips	• Interpretive talks, slideshows, audiovisual programs
Yosemite Conservancy	• Interpretive publications • Art classes and educational seminars • Yosemite Theater presentations	• Educational seminars • Scientific research and habitat restoration	• Educational seminars
NatureBridge	• Educational field-science programs for school-age children and adult groups	• Guided wilderness trips	NA
Sierra Club	• Interpretive walks and talks • LeConte Memorial Lodge exhibits and library • Interpretive exhibits • Library	• Guided wilderness trips	NA
The Ansel Adams Gallery	• Art exhibits • Photo walks and classes • Film presentation	NA	NA
SOURCE: Merced Wild and Scenic River Plan: Preliminary Alternative Concepts Summary Comparison Table. March 2012			

Recreational Activities

The Merced River and South Fork Merced River offer diverse, river-related recreational opportunities. The experience of recreating in these areas is inextricably linked to the river's dynamic natural processes, which have helped form and continue to influence the scenery and evocative landscape. In this setting, visitors are able to experience nature on a grand scale, one in which the river is paramount. Within these surroundings, people of all ages and abilities enjoy exemplary experiences that often create personal memories, traditions, and multi-generational bonding among family and friends. A few such activities include hiking, kayaking,

swimming, and fishing. The availability of these opportunities varies by location within the Merced River and South Fork Merced River corridors. A summary of recreational activities within the various segments of the corridor is provided in Table 9-102.

TABLE 9-102: RECREATIONAL ACTIVITIES WITHIN THE MERCED RIVER CORRIDOR

River	Park Area	Recreational Opportunities
Merced River	Wilderness (Segment 1)	Backpacking/hiking, camping, High Sierra Camp experience, stock use, fishing, swimming/wading, nature study, photography, cross-country skiing, snowshoeing
	Yosemite Valley (Segment 2)	Walking/hiking, picnicking, camping, rock climbing and bouldering, cross-country skiing, snowshoeing, ice skating, fishing, photography, swimming/wading, floating, nature study, stock use, sightseeing, rafting, kayaking, interpretive programs, bicycling, art classes
	Merced River Gorge (Segment 3)	Rock climbing and bouldering, fishing, swimming/wading, photography, sightseeing, nature study
	El Portal (Segment 4)	Whitewater rafting/kayaking, fishing, swimming/wading
South Fork Merced River	Wilderness (Segments 5, 6)	Backpacking/hiking, camping, stock use, fishing, swimming/wading, nature study, photography, sightseeing, cross-country skiing, snowshoeing
	Wawona (Segment 7)	Hiking, picnicking, camping, cross-country skiing, snowshoeing, fishing, photography, swimming/wading, floating, nature study, stock use, sightseeing, rafting, interpretive programs, golfing
	Wilderness Below Wawona (Segment 8)	Hiking, fishing, whitewater kayaking

Segment 1: Merced River Above Nevada Fall

Visitor Facilities and Services

Commercial Services. Commercial services in Segment 1 are minimal and consist of the Merced Lake High Sierra Camp (see description under Overnight Lodging Accommodations) and commercial guided multi-day pack trips.

Trails. There are nearly 800 miles of marked and maintained trails providing access to and throughout the Yosemite Wilderness. Within the Merced River corridor, there are approximately 30 miles of wilderness trails. The most heavily used wilderness trails are those above Nevada Fall (Segment 1). Primary access to this area is provided by the Mist and John Muir trails, which originate in Yosemite Valley. The Yosemite Falls Trail and the Four Mile Trail originate in the valley and lead to wilderness areas beyond the corridor.

Interpretation and Education. Interpretive and educational activities in Segment 1 occur at the Merced Lake High Sierra Camp and include ranger-led day walks and evening programs. There are also multi-day ranger-guided High Sierra Camp loop trips that include a stop at the Merced Lake High Sierra Camp.

Overnight Lodging Accommodations

Merced Lake High Sierra Camp. This is the largest and most remote (in terms of distance from trailhead) of the five High Sierra Camps in Yosemite. It is located on the east end of Merced Lake at 7,150 feet above sea level and can accommodate up to 60 overnight guests. Most visitors arrive on foot, but some arrive via stock from other High Sierra Camps. The camp includes 22 tents, each of which can accommodate two to four people. Two of these tents are used to house employees, and one is set aside for wranglers traveling with stock. Showers and flush toilets are available, and a dining hall accommodates 70 people. The camp also serves meals to through-hiking backpackers. Helicopters are used to transport items that are too big to safely transport with stock, responses to medical emergencies, and to facilitate transport and disposal of

solids from the camp's septic system. All refuse is packed out by stock. Occupancy rates at the Merced Lake High Sierra Camp during a typical season are high.

Camping

There are three separate designated wilderness camping areas within the Merced River corridor above Nevada Fall: Little Yosemite Valley, Moraine Dome, and Merced Lake Backpackers camping areas. These designated camping areas are popular wilderness camping destinations within the park and are heavily used during the summer months (NPS 2011e). In addition to these designated areas, campers may also engage in dispersed camping at wilderness locations with some restrictions.

There is no limit on the number of campers at any of the designated camping areas and no specific number of campers that they can accommodate. The number of permits for wilderness camping is controlled by an overnight quota system, but the individual number of campers on a given night is subject to the travel choices of each individual group, which is only partially regulated by the wilderness permit.

Little Yosemite Valley Backpackers Camping Area. This is the western-most camping area within the Merced River corridor above Nevada Fall. This location can accommodate approximately 125 overnight campers. Facilities include one composting toilet, two fire rings, 21 bear-proof boxes for food storage, and informational signage. Use of this area during the summer months (i.e., between Memorial Day and Labor Day weekends) is generally heavy.

Moraine Dome Camping Area. Also in Little Yosemite Valley, this smaller, undeveloped backpacker camping area is located just east of the Little Yosemite camping area. This location can accommodate approximately 50 overnight campers and offers no facilities.

Merced Lake Backpackers Camping Area. This location is located farther upstream, along the eastern shore of Merced Lake, near the Merced Lake High Sierra Camp. This area can accommodate approximately 90 overnight campers. Facilities include potable water, flush toilets, fire rings, and approximately eight bear boxes. As with those discussed previously, these campsites tend to be heavily used during the summer months.

Recreational Activities

Fishing. The headwater areas of both the Merced River and South Fork Merced River have mountain ponds and alpine lakes, as well as snowmelt and ephemeral streams, within their boundaries. Fishing in the wilderness lakes is a popular activity for visitors, particularly in Merced Lake at Merced Lake High Sierra Camp and farther upstream at Washburn Lake.. Wilderness lakes support nonnative brown and rainbow trout populations.

Swimming. In the wilderness, swimming occurs in certain reaches of the Merced River, and downstream from various cascades, including Bunnell Cascade. Swimming also takes place near Moraine Dome and in the many lakes in the upper Merced River corridor, particularly in Merced Lake and Washburn Lake.

Hiking. Climbing Half Dome is a popular wilderness hike. Ranging from 14 to 16 miles in length depending on the route, this hike involves scaling the backside of the dome with cables and requires a permit. The current permit system allows 300 total hikers per day — 225 day visitors and 75 overnight visitors. Permits are distributed via a lottery both at the beginning of the season and on a daily basis (NPS 2012j).

Stock Use. Visitors participate in commercial overnight stock trips to the wilderness originating from various points both inside and outside of the park. More information on stock use and stock trails can be

found in the "Visitor Facilities and Services Overview" section, above.

Other Activities in the Merced River Corridor. Visitors participate in other activities along the river that may not be specifically related to or dependent on the river. These include rock climbing and bouldering. The experiences of visitors engaged in these activities may be enhanced by the river, but the river and its values are not the primary focus of these experiences.

Segment 2: Yosemite Valley

Visitor Facilities and Services

Commercial Services. Yosemite Valley offers the broadest range of visitor facilities and services within the river corridor. Commercial services include: food and beverage, retail, lodging, and recreation rentals. Additional non-commercial services include museums, galleries, and educational and interpretive facilities. In Yosemite Valley, visitor facilities and services are located in five distinct locations — Yosemite Village, Yosemite Lodge complex, Curry Village, The Ahwahnee, and Housekeeping Camp. Table 9-103 below summarizes the visitor facilities and services in each location. Each location also provides overnight accommodations.

TABLE 9-103: VISITOR FACILITIES AND SERVICES BY LOCATION AND TYPE

Location	General Use	Specific Facilities and Services
Yosemite Village	Retail Services	Degnan's Delicatessen and gift shop, Village Store complex (gift/grocery, fast food and specialty retail), Ansel Adams Gallery
	Visitor Services	Main Yosemite National Park U.S. Post Office, ATM and check cashing facility, concessioner garage (open to visitors), medical and dental clinic, tour kiosk, recycling center
	Interpretation/Education	Visitor Center, Yosemite Museum and Research Library, Wilderness Center, Yosemite Art Center
Curry Village	Retail Services	Dining pavilion, fast food outlets, a gift/grocery store, specialty retail
	Visitor Services	Ice rink, raft and bicycle rentals, swimming pool, tour kiosk, NPS Campground Reservation Center, recycling services
	Interpretation/Education	Mountaineering school, outdoor amphitheater
Yosemite Lodge	Retail Services	Restaurant, a food court, fast food outlet, bar, a gift/grocery store, and specialty retail store
	Visitor Services	Post office, bike rental, pool, tour desk
	Interpretation/Education	Outdoor amphitheater, indoor evening program space, two meeting rooms
Housekeeping Camp	Retail Services	Camp Store
	Visitor Services	Laundry, showers
	Interpretation/Education	
The Ahwahnee	Retail Services	Dining room, bar and lounge, two gift shops
	Visitor Services	Swimming pool
	Interpretation/Education	Concessioner tours

Trails. There are over 46 miles of trails in Yosemite Valley, including approximately 7 miles of paved bike paths, 0.75 mile of boardwalks, and almost 10 miles of informal trails. The length of the trails in Yosemite Valley is illustrated in Table 9-104.

TABLE 9-104: YOSEMITE VALLEY TRAIL LENGTHS AND LEVEL OF DIFFICULTY

Trail Name	Length	Difficulty
Bridalveil Fall (Round-trip)	0.5 mile round-trip	Easy
Lower Yosemite Fall (Round-trip)	1.1 miles	Easy
Cook's Meadow Loop (Round-trip)	1 mile	Easy
Mirror Lake/Meadow (Round-trip)	2 miles	Easy
Valley Floor Loop (Round-trip)	13 miles	Moderate
Four Mile Trail (Round-trip)	9.6 miles	Strenuous
Panorama Trail via Mist Trail (One-way)	8.5 miles	Strenuous
Upper Yosemite Fall (Round-trip)	7.2 miles	Strenuous
Vernal and Nevada falls (Round-trip)	Footbridge: 1.6 miles Vernal Fall: 2.4 miles) Nevada Fall: 5.4 miles	Strenuous
Half Dome (permit required) (Round-trip)	via Mist Trail: 14 miles via John Muir Trail: 16.3 miles via Mist and John Muir Trails: 15.2 miles	Strenuous

Interpretive and Educational Services. Yosemite Valley provides numerous, diverse interpretive and education programs. At least 77 outdoor wayside exhibits reveal meaningful stories related to biology, hydrology, geology, scenery, and recreation. At least 10 different interpretive walks travel into the Merced River corridor, helping visitors gain a deeper understanding of river values. Six different curriculum-based education programs expose students to the same, as well as summer daily offerings of Junior Ranger programs. DNC Interpretation, Sierra Club at LeConte Memorial Lodge, Yosemite Conservancy, and other partners also share river stories and resource protection messages with visitors to Yosemite Valley. Campfire programs are offered on multiple topics, some river related. Programming aims to meet the goals outlined in the park's *Long Range Interpretive Plan*, and is usually modified annually to match current trends in visitation and park operational capacity. Several venues provide space for interpretive and educational programming.

- The Nature Center at Happy Isles currently sits on the historic site of the California State Fish Hatchery built by the Fish and Game Commission in 1927. The building houses wildlife dioramas, tracking tips, interactive exhibits, and four different environments including riverine. The Nature Center has been used as a hub for extensive Jr. Ranger Programs, including one- and two-hour Jr. Ranger walks and Jr. Ranger Campfires located 0.25 mile from the center at the A-frame campfire ring.
- Yosemite Valley Visitor Center was built in 1966 as part of the Service-wide Mission 66 initiative. The interior of the one-story visitor center contains updated exhibits created in 2007. Exiting the rear doors of the visitor center, one enters an open courtyard that leads to the theater where a 20-minute film, *Spirit of Yosemite*, is shown throughout the day.
- Yosemite Museum was completed in 1925, designed by architect Herbert Maier in the newly emerging National Park Service Rustic Style. It opened to the public in May of 1926 as the first building constructed as a museum within the NPS. The first floor of the building houses exhibits that are open to the public. Adjacent to the museum gift store is a small collection room that is used by NPS curatorial staff and is an area where tours are given by request. The Yosemite Museum is staffed by NPS Indian Cultural Demonstrators who demonstrate a variety of traditional skills, including basket making and preparation, acorn preparation, beading, jewelry making, string making, and flint knapping.

- Outside the back doors of the Yosemite Museum and the Valley Visitor Center, to the north, is the Indian Village of Ahwahnee. Here visitors follow a self-guided experience through the reconstructed Indian Village by way of wayside exhibits and a brochure.
- Lower Pines Campground Amphitheater is the only outdoor amphitheater located in an existing Yosemite Valley campground. Evening ranger programs are offered during summer.
- Lower River Campground Amphitheater is an outdoor amphitheater located in Yosemite Valley at the former Lower Rivers Campground. This amphitheater is used infrequently.
- LeConte Memorial Lodge, designated a National Historic Landmark in 1987, was built by the Sierra Club in 1903. LeConte Memorial Lodge is open to the public in summer and contains a library of relevant titles. Evening programs, offered Friday through Sunday, focus on natural science, and specifically the history and science of Yosemite Valley.
- NatureBridge is a primary park partner that provides curriculum-based educational programming for grades 6–12 in Yosemite National Park. Many of their programs take place in the Merced River corridor and highlight the significance of outstandingly remarkable values of the river.
- Overnight Lodging Accommodations. Lodging options available within this segment are summarized below.

Yosemite Lodge. Located near the base of Yosemite Falls, this lodge encompasses an area of about 40 acres, and offers 245 lodge and family rooms (DNC 2011a), as well as the visitor services and facilities described in the previous section. Pine and Oak Cottages, as well as cabins with and without baths that were damaged by the January 1997 flood, have been removed.

Housekeeping Camp. Currently 266 units are available for use by visitors at Housekeeping Camp (DNC 2011a). Each unit (one half of a duplex structure) can accommodate up to six people, with a total of 12 people per structure. Food preparation is allowed in Housekeeping Camp, thereby increasing its popularity with visitors. As noted in the "Hydrology" section of this chapter, several of the Housekeeping Camp units are located within the 10-year floodplain and subject to inundation (NPS 2011e).

Curry Village. The Historic District at Curry Village, about 50 acres, offers a total of 400 units, including cabins with and without private baths, tent cabins, and rooms in Stoneman Lodge (DNC 2011a). Visitor services and facilities are described in the previous section. As noted in the Geology section of this chapter, 72 Curry Village units were destroyed or removed from service following the 2008 rock fall. (http://parkplanning.nps.gov/projectHome.cfm?projectId=29566)

The Ahwahnee. The Ahwahnee, a 12-acre National Historic Landmark, offers 123 rooms and cottages. Of these, 99 are deluxe hotel rooms and 24 are cottage rooms.

Campgrounds

There are five public campgrounds within Yosemite Valley: Upper Pines, Lower Pines, North Pines, Camp 4, and Backpackers. Following the 1997 flood and related infrastructure damage, 124 sites were removed at the former Upper River Campground and 138 sites were removed at the former Lower River campground. Campground availability in Yosemite Valley is extremely limited during peak summer months, with most campgrounds operating at or near capacity during this period. In addition, as noted in the "Hydrology," "Vegetation," and "Wetlands" sections of this chapter, heavy use at campgrounds near the Merced River has given rise to an expansion of social trails across meadows, vegetation trampling, and streambank erosion (NPS 2011e).

Upper Pines Campground. Located in Segment 2A (East Valley), Upper Pines Campground has 240 total

sites. On average, 4.5 people occupy each site and stay for an average of 2.7 nights (NPS 2011d, 2011e). The 10 restrooms in the campground (NPS 2011f) are connected to the Yosemite Valley sewer collection system. An RV dump station is located at the entrance to Upper Pines Campground.

Lower Pines Campground. Located in Segment 2A (East Valley) to the west of Upper Pines Campground, Lower Pines Campground has 76 total sites. On average, 4.66 people occupy each site and stay for an average of 2.71 nights (Bryan 2011b, 2011e). The three restrooms in the campground (NPS 2011f) are connected to the Yosemite Valley sewer collection system. Lower Pines Campground has an amphitheater for ranger-led programs.

North Pines Campground. Located in Segment 2A (East Valley), to the north of Lower Pines across the Merced River, North Pines Campground has 86 total sites. On average, 4.2 people occupy each site and stay for an average of 2.71 nights. There are 23 RV-only sites at this campground (Bryan 2011b). The four restrooms in the campground (NPS 2011f) are connected to the Yosemite Valley sewer collection system.

Camp 4. Located north of Yosemite Lodge, Camp 4 has 35 sites (Bryan 2011b) which are available on a first-come, first-served basis. There is one restroom facility in the campground, which is connected to the Yosemite Valley sewer collection system. Camp 4 is listed on the National Register of Historic Places because of its nationally significant role in the development of rock climbing as a sport (NPS 2011f).

Backpackers Campground. Located to the north of North Pines Campground across Tenaya Creek, Backpackers Campground has 25 sites. Backpackers Campground allows only campers with wilderness permits. They may stay either the day before their departure into the Yosemite Wilderness or the evening of their return from the Wilderness. This campground has five vault toilets that are not connected to the Yosemite Valley sewer collection system, and no potable water (NPS 2011f).

Recreational Activities

Fishing. In the stretches of the Merced River that flow through Yosemite Valley, brown trout, rainbow trout, brook trout, and smallmouth bass are commonly sought by visiting anglers. Fishing in Yosemite National Park is regulated under state and federal (NPS) fishing regulations prohibiting the use of live bait and barbed hooks. The area between Happy Isles and Foresta Bridge is designated as catch-and-release waters for rainbow trout.

Swimming. Swimming and wading in the Merced River corridor is popular during the summer. In a 2012 study of river visitors in Yosemite Valley, 58% reported participating in swimming during their visit (Whittaker et al. 2012). The NPS does not officially designate swimming areas except those areas closed to swimming and bathing — Emerald Pool and the Silver Apron above Vernal Fall.

The park encourages visitors to avoid fast-moving water and unsafe pools above waterfalls. In the valley, swimming is a popular activity in the Merced River, Tenaya Creek, and at Mirror Lake. Most sections of the river in Yosemite Valley are within easy access from lodging areas, roads, campgrounds, and day use areas. Many of these areas are heavily used, particularly where they are adjacent to developed campgrounds and upstream or downstream of certain bridges, such as Stoneman and Swinging bridges. Two public pools at Yosemite Lodge and Curry Village are used during the summer months. There is a year-round guest pool at The Ahwahnee.

Rafting and Kayaking. Visitors can rent rafts from the primary concessioner at Curry Village if water levels are sufficient. Rafting has been popular in the valley since the 1980s, and all rafting is self-guided. The concessioner is permitted to have 100 rental rafts on the river at any time when the water level and air

temperature are within guidelines established by the Superintendent to protect visitor safety. The number of operating days varies on a yearly basis due to these factors. Visitors also use various personal rafts and flotation devices throughout the Merced River corridor. Motorized boating on the Merced River is prohibited.

All operational aspects of the raft rental system are controlled by the NPS pursuant to the terms of the *Concession Contract Operating Plan* and related direction to the concessioner provided by formal correspondence and periodic operational performance evaluations conducted by NPS staff. Per the Concession Contract, the concessioner may not exceed 100 rafts on the river at one time.

Rafting regulations have been implemented to protect river habitat and provide for visitor safety in the valley. In general, park management encourages visitors to launch and remove rafts at sandbars and beach locations. The concessioner must use designated areas for launching and removal of nonmotorized watercraft. Nonmotorized vessels are allowed on the section from Stoneman Bridge to Sentinel Picnic Area during the hours of 10:00 a.m. to 6:00 p.m. There is a raft launch site on the downstream side of Stoneman Bridge, where the river typically has slow-moving water during the summer. Concessioner nonmotorized watercraft is not permitted past the Sentinel Beach Picnic Area. Areas around launch sites can become denuded of vegetation due to heavy use, causing bank erosion and sedimentation (NPS 2011e).

Picnicking. Yosemite Valley visitors can choose from six designated picnic areas and facilities, including the Church Bowl Picnic Area near Ahwahnee Meadow, the Lower Yosemite Fall Picnic Area, the Swinging Bridge Picnic Area, the Sentinel Beach Picnic Area, the El Capitan Picnic Area, and the Cathedral Beach Picnic Area. These picnic areas offer picnic tables, vault toilets, and garbage and recycling receptacles. With the exception of the Lower Yosemite Fall and Church Bowl picnic areas, each has a grill. None has potable water. Visitor use is generally heavy at these picnic areas, often exceeding the capacity of the picnic area infrastructure during peak summer months.

Hiking. Visitors have access to Yosemite Valley trails that range from a short stroll to the base of Lower Yosemite Fall to an ambitious 14- to 16-mile round-trip day hike to the top of Half Dome. Thirty-five miles of hiking trails are available on the Yosemite Valley floor. Many of these closely parallel the Merced River, providing access to and views of the river along the way. Some of these trails are shared with bicyclists and/or stock users. Several walking loops are available in East Yosemite Valley, and there are two loops in West Yosemite Valley: (1) between Swinging Bridge and El Capitan Bridge, and (2) between El Capitan Bridge and Pohono Bridge. Day hikers can circumnavigate the valley using the Valley Loop Trail, which is shared by stock. A trail network provides multiple routes between the Happy Isles/Mirror Lake area and Yosemite Village. Self-guiding interpretive trails can be found at Mirror Lake and in the Indian Village of Ahwahnee behind the Yosemite Valley Visitor Center. A multi-use paved trail (shared by pedestrians and bicyclists) links Yosemite Lodge to the Happy Isles area on both sides of the Merced River. Paved trails (multi-use trails and roads closed to private vehicles) in the valley are approved for use by visitors with pets. Heavy and multiple uses often create congestion on paved trails, especially in Yosemite Village. Several trails have wayside exhibits to interpret features encountered along the way. The Mist Trail is one of the most popular short hikes in Yosemite National Park. It follows the Merced River, starting at Happy Isles in Yosemite Valley, past Vernal Fall and Emerald Pool, to Nevada Fall. Along the trail, the Merced River is a tumultuous mountain stream lying in a U-shaped valley. Enormous boulders are dwarfed by the sheer granite rock faces, which rise to 3,000 feet above the river. Through it all, the Merced River rushes down from its source in the high Sierra, broadening as it crosses the floor of Yosemite Valley.

Stock Use. Day rides on mule and horseback and overnight trips to the wilderness all originate in the Yosemite Valley stables in Curry Village. More information on stock use and stock trails can be found in the "Visitor Facilities and Services Overview" section above.

Other Activities in the River Corridor

Biking. Bikers can bring their own bicycles or rent them. There are two bike rental stands in Yosemite Valley, one at Curry Village and one at Yosemite Lodge. Biking is a popular activity and rentals include bikes and trailers for children as well as accessible transportation rentals such as wheelchairs, electric mobility scooters, hand crank bicycles (recumbent bicycles), and tandem bicycles. Bicycle rentals vary from day to day and year to year, depending on opening/closing dates, weather, and overall visitation.

Winter Activities. Many activities are available to park visitors during the winter months, including cross-country skiing, tubing/sledding, ice skating, and snowshoeing. Most cross-country ski routes follow summer trails or traverse the open meadows. At elevations of 4,000 feet, Yosemite Valley sometimes has snow for long periods; however, snow at lower elevations, such as in El Portal, is rare. Ice skating is available at a concessioner-operated rink at Curry Village and is used in the winter by both visitors and residents. Yosemite Valley serves as a primary lodging center for visitors pursuing winter recreation.

Other Activities. Visitors participate in other activities along the river that may not be specifically related to or dependent on the river. Among these are rock climbing and bouldering, and classes offered by the Yosemite Mountaineering School, the Art Activity Center, the Yosemite Conservancy, and the Ansel Adams Gallery.

Segments 3 and 4: Merced River Gorge and El Portal

Visitor Facilities and Services

Commercial Services. Commercial services in El Portal include a small grocery store and a gas station. Additional facilities and services include the El Portal post office, a community center, and a community park. Other services are provided on private land.

Trails. There are no hiking trails in Segments 3 and 4.

Interpretation and Education. The interpretation and education opportunities in the Merced River Canyon are currently limited to wayside exhibits. Currently, four outdoor wayside exhibits explain natural processes related to biology, hydrology, geology, scenery, and recreation.

Recreational Activities

Fishing. The Merced River between the park boundary and the Foresta Road Bridge, also known as El Portal reach, has been designated as a Wild Trout Fishery by the California Department of Fish and Game because of the favorable growing season and conditions of the river in this stretch (CDFG 2004). The popularity of angling is growing in the El Portal reach due to these favorable fishing conditions. Because anglers typically work the river as they walk upstream, there are only a few well-known fishing areas, including west of the wastewater treatment plant in El Portal, the Sand Pit, near the Highway 140 Bridge, across the road from El Portal Market, and near the confluence with Crane Creek. The California Department of Fish and Game continues to stock trout species in the Merced River just below the Foresta Road Bridge; these fish populations move upstream and have the potential to travel as far as Yosemite Valley (Stevens 2004).

Commercial fly-fishing guide services are permitted along the Merced River within the El Portal Administrative Site and the park, between the Foresta Road Bridge on the west and the confluence with Yosemite Creek on the east in Yosemite Valley. Fly-fishing is most popular in late September and early October during the caddis fly hatch (Hubner 2004). Fly-fishing is least popular during the warmest summer months because of the difficulty in finding fish and the harm to the fishery that can occur when the water levels drop and the water warms up.

Swimming. During the summer, visitors and residents alike swim in the Merced River Canyon. The river between Pohono Bridge and the intersection of El Portal and Big Oak Flat roads is a popular swimming location, despite a lack of appropriate access in many places. There are also numerous swimming holes along the Merced River Canyon, some easier to access than others.

In El Portal, Patty's Hole is a well-known swimming location just west of the El Portal Market, but is not a formally designated day use area. The January 1997 flood washed away a number of trees that had shielded this stretch of the river from view by motorists passing on Highway 140, thus increasing public awareness and use of the swimming area.

Rafting and Kayaking. Boating in Segment 3 is currently prohibited as per the Superintendent's Compendium (2011l).Whitewater rafting and kayaking occur in the El Portal (Segment 4) reach for boaters. This reach of the river is generally considered Class III-IV rapids. Certain sections can be Class V, depending on the flow rate, which attracts boaters from across the state. No commercial rafting operations are permitted upstream of the Foresta Road Bridge; however, there are no regulations on where private boaters may enter the water or when they can run the river. A launch site for private boaters is located adjacent to the Highway 140 Bridge. The NPS does not regulate private boater recreation due to low use levels. Because the Merced River is used seasonally due to the absence of dams, the highest use of the river is directly correlated with the heaviest runoff periods, typically April through mid-July (Horne 2004).

Hiking. There are no noteworthy hiking trails within the Merced River gorge segment. Similarly, few visitors hike in the area of El Portal, though day hiking is more common along the old Foresta Road and just west of El Portal along Incline Road.

Picnicking. Picnic facilities are available at Cascade Picnic Area and at the Arch Rock Entrance Station.

Segments 5, 6, 7, and 8: South Fork Merced River

Visitor Facilities and Services

Commercial Services. Dining and retail facilities, as well as a golf course, a snack stand/golf shop, and service station are available in Wawona.

Trails. Trails in Wawona, including length and difficulty, are identified in the Table 9-105 below:

Wilderness access to the South Fork Merced River (Segment 5) is from Forest Service trailheads to the south via a formal NPS trail on U.S. Forest Service land, at the Bishop Creek confluence.

TABLE 9-105: TRAILS IN THE WAWONA AREA

Trail	Distance	Difficulty
Wawona Meadow Loop (Round-trip)	3.5 miles	Easy
Swinging Bridge Loop (Round-trip)	4.75 miles	Moderate
Wawona to Mariposa Grove (One-way)	6 miles	Moderate
Mariposa Grove of Giant Sequoias		
• Grizzly Giant Tree and California Tunnel Tree (Round-trip)	1.6 miles	Moderate
• Wawona Point (Round-trip)	6 miles	Moderate
• Outer Loop Trail (Round-trip)	6.9 miles	Moderate
Alder Creek Trail (Round-trip)	12 miles	Strenuous
Chilnualna Fall Trail (Round-trip)	8.2 miles	Strenuous

Interpretation and Education. Wawona interpretive programming is provided late spring through early fall. Some programs focus on park history from 1864 to the present. The Wawona Covered Bridge is a key element in those programs. Stage rides and interpretation of the bridge (through signage and ranger-led walks) and the Pioneer Yosemite History Center help visitors understand the significance of this covered bridge. There are also several programs in Segment 7 that provide opportunities for visitors to understand more deeply the meanings associated with outstandingly remarkable values, such as geology, hydrology, cultural history, recreation, and biology. Those programs involve ranger walks and evening campfire programs. A curriculum-based Environmental Living Program is offered in Segment 7, reaching hundreds of school children each year. Several venues provide space for a myriad of interpretive and education programming.

- Wawona Visitor Center at Hill's Studio is located on the grounds of the Wawona Hotel in the historic art studio that was constructed in the early 1880s for the famous western painter Thomas Hill. It includes a bookstore, orientation area, exhibit hall, and wilderness permit station.
- Wawona Campground Amphitheater consists of wooden benches with metal supports, and a rock-lined campfire circle. The amphitheater does not have a projector screen and has no electricity, so the interpretive programs are the "classic" old-fashioned Campfire Talks.
- Pioneer Yosemite History Center is a collection of historic cabins and a Covered Bridge. The cabins (each of which represent a different chapter in the historic development of Yosemite National Park) were moved to their current location and were relocated next to the then recently restored Covered Bridge as a Mission 66 project to allow park visitors to explore and understand the growth and development of Yosemite National Park and the National Park idea in America.

Overnight Lodging Accommodations

Wawona Hotel. The 104-room Wawona Hotel, a national historic landmark, is within the river corridor. Visitor facilities and services at the Wawona Hotel are discussed in the previous section.

Campgrounds

Wawona Campground. This is the only NPS campground along the South Fork of the Merced River. It is located adjacent to the river, northwest of the Wawona Hotel and Golf Course. Wawona Campground has 96 sites including one group site, two stock-use campsites, and two campground host sites (NPS 2011f). There are 46 tent-only and four RV-only campsites. The group campsite only accommodates tents. The remaining campsites accommodate either tents or RVs. Each campsite contains a fire ring, picnic table, and food locker and is near a restroom with potable water and flushing toilets. The six restrooms in the

campground (NPS 2011f) are connected to a septic system that is not part of the Wawona sewer collection system. Heavy use at the Wawona Campgrounds can stress the septic system and leach field, creating potential water quality impacts during peak use periods.

Recreational Activities

Fishing. As described for the headwaters of the Merced River, the upper watershed of the South Fork Merced River is host to mountain ponds, alpine lakes, and ephemeral streams. Wilderness lakes support relatively good brown and rainbow trout populations. On the South Fork Merced River, however, most fishing (primarily for brown and rainbow trout) takes place downstream of the water intake and impoundment area in Wawona.

Swimming. In the South Fork Merced River, swimming is common in the vicinity of Swinging Bridge, alongside the Wawona Campground, and near the picnic area east of the campground. In recent years, swimming has also become more popular through the town of Wawona. Access to the river downstream of Swinging Bridge is somewhat limited due to private property along the river. Natural pools also exist in the upper reaches of the South Fork Merced River and are used by wilderness visitors. Swimming is prohibited at the pool of the Wawona Domestic Water Intake and 100 yards upstream. A swimming pool is located on the grounds of the Wawona Hotel and is available for hotel guests.

Rafting and Kayaking. Limited commercial rafting occurs on the South Fork Merced River between Swinging Bridge and Wawona Campground. In this reach, the river's gradient is relatively flat. As in Yosemite Valley, commercial rafting regulations have been implemented to protect river habitat and provide for visitor safety in the valley. Whitewater kayaking occurs in the wilderness area below Wawona (Segment 8). In general, park management encourages visitors to launch and remove rafts at sandbars and beach locations.

Rafting and kayaking in Wawona must adhere to the following per the *Superintendent's Compendium*, which states, "the South Fork of the Merced River is closed to all vessels, except it is open to non-motorized vessels and floatation devices downstream of the Wawona Swinging Bridge. Vessels are defined by the Coast Guard definition (36 CFR, section 1.5(a)(1); CFR, section 1.5(f)).

Picnicking. Wawona visitors have access to picnic areas near the Wawona Store which offers picnic tables, vault toilets, and garbage and recycling receptacles. The South Fork Merced River Picnic Area, which is located approximately 0.5 mile upstream of the Wawona Campground, has a vault toilet, tables, grills, garbage and recycling.

There are flush toilets and running water at both the campground and the picnic area near the store in Wawona. Presently the toilets at the picnic area are not adequate for the number of people using them, and there is often a long wait to use the facilities. This is exacerbated by the fact that the shuttle stop for Mariposa Grove, which is located there, provides inadequate parking for visitors.

Hiking. There are seven hikes in the Wawona area ranging from the easy Wawona Meadow Loop to the strenuous wilderness trails to Alder Creek and Chilnualna Fall. Moderate hikes include the Swinging Bridge Loop, the Wawona to Mariposa Grove trail, and several trails in the vicinity of Mariposa Grove that are not in the study area. There are also numerous informal trails along the river in this area.

Other Activities in the River Corridor

Golf. Golf is available in Wawona at the historic Wawona Golf Course (established in 1918). This golf

course is an organic golf course (free of pesticides and herbicides) and is also a certified Audubon Cooperative Sanctuary. Only authorized golfing parties are permitted to use the golf course because of the danger associated with being hit by golf balls. The length of time the course is open varies year by year, depending on weather conditions, but the course is generally open when the Wawona Hotel is operating between June and October. On average, 25 to 34 groups of four people golf per day. This golf course accommodates approximately 9,000 people per year (NPS 2004d). Some cross-country skiing also takes place on Wawona Meadow and the golf course. Currently, Yosemite is preparing an amendment to the National Historic Landmark District that proposes adding the golf course and Wawona Meadow to the District. The lower portion of the golf course is within the wild and scenic river corridor. The golf course is also used as the spray field for the town's sewer system.

Tennis. A tennis court is located on the grounds of the Wawona Hotel and is available for hotel guests.

Environmental Consequences Methodology

This analysis evaluates the impacts of the various alternatives on the visitor experience in the study area. The analysis considers changes in facilities and services, overnight lodging accommodations, camping, and recreation activities. Commercial services include food service, retail, equipment rentals, and other commercial activities. Non-commercial facilities and services include day use areas, trails, interpretation, information, and education. Visitor facilities also include roads and parking areas, which are discussed in detail in the transportation impact analysis and are referenced in this discussion. Overnight lodging accommodations include hotel, motel, and cottage rooms; cabins with bath; rustic canvas tent cabins; and Housekeeping Camp units. Campgrounds include facilities where visitors supply their own shelter. Recreation activities include hiking, fishing, biking, rock climbing, swimming, floating, nonmotorized boating, auto-touring, picnicking, and horseback riding.

This analysis addresses whether potential management activities under the various alternatives would result in a change in access to, availability of, type of, or quality of visitor facilities and services, overnight accommodations, campgrounds, or recreation activities. While the quality of recreation activities is affected by natural resource conditions, the current discussion does not reanalyze the natural resource impacts of each action within each alternative. Rather, this section references the natural resource impact analysis presented elsewhere in this chapter. Finally, the availability of recreation activities and overnight accommodations, including the comparison of supply and demand, overlap with aspects of the socioeconomic analysis. This section does not reanalyze the socioeconomic impacts of each alternative but instead refers to the socioeconomic analysis presented elsewhere in this chapter.

This analysis evaluates the study area of the Merced Wild and Scenic River, using the following criteria:

- **Context.** The context of the impact considers whether the impact would be local, segmentwide, parkwide, or regional. For the purposes of this analysis:
  - Local impacts would be those that occur in a specific area within a segment of the river. This analysis would further identify if there are local impacts in multiple segments.
  - Segmentwide impacts would consist of a number of local impacts within a single segment, or larger-scale impacts that would affect the segment as a whole.
  - Parkwide impacts would extend beyond the river corridor and the study area within Yosemite National Park.
  - Regional impacts would be those that extend to the Yosemite gateway region.

- **Intensity.** The intensity of the impact considers whether the impact to visitor services would be negligible, minor, moderate, or major.
  - **Negligible.** Impact would not be detectable by most visitors and would not have a discernible effect on visitor facilities and services. Where impacts are quantifiable, fewer than 2.5% of visitor services would be affected in a particular segment of the river corridor.
  - **Minor.** Impact would be slightly detectable by most visitors, but would not be expected to have an overall effect on the availability of visitor facilities and services. Where impacts are quantifiable, approximately 2.5% to 5% of visitor services would be affected in a particular segment of the river corridor.
  - **Moderate.** Impact would be clearly detectable to most visitors and could have an appreciable effect on the availability of visitor facilities and services. Where impacts are quantifiable, approximately 5% to 10% of visitor services would be affected in a particular segment of the river corridor.
  - **Major.** Impacts would have a substantial, highly noticeable influence, and could permanently alter access to and availability of visitor facilities and services. Where impacts are quantifiable, greater than 10% of visitor services would be affected in a particular segment of the river corridor.
- **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, such as short-term impacts associated with construction or restoration activities.
  - A long-term impact would have a permanent effect on the visitor experience, at least within the planning horizon for the *Merced River Plan*.
- **Type of Impact.** The type of impact considers whether the impact would be beneficial or adverse to the visitor experience and its effect on access to, availability of, type of, and quality of the visitor experience. Beneficial impacts would increase the access, availability, type, or quality of the recreation activities, facility or service, or overnight accommodation. Adverse impacts would reduce access to or availability of visitor services.
  - Access would include actions to increase access, such as Architectural Barriers Act Accessibility Standards (ABAAS)/Americans with Disabilities Act (ADA)-compliance, or changes to access to river segments for boating, etc.
  - Availability includes changes to the inventory available, such as campsites, wilderness permits, etc.
  - Type includes changes to the variety of recreation activities allowed, or the types of overnight accommodations, such as the mixture of tent cabins, hard-side cabins, hotel lodging, and Housekeeping Camp lodging.
  - Quality includes changes to natural resource conditions, trail and facility conditions, presence, or absence of crowding, etc. Judging whether changes to a visitor's experience are positive or negative is subject to personal preferences; what some may view as a desirable change could be considered undesirable by others. Therefore, this analysis considers multiple points of view when drawing conclusions about the type of impact.

Environmental Consequences of Alternative 1 (No Action)

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), restoration and resource management activities would continue at the current level as part of the park's ongoing management of natural and cultural resources. These activities include selected meadow restoration and riverbank projects, invasive species control, and limited conifer removal from meadows to improve views. Certain alterations to the biophysical environment would remain including riverbank riprap, abandoned infrastructure in the riverbed, informal meadow trails, conifer encroachment in meadows, and riverbank impacts from scouring and visitor use. For most visitors, the overall quality of the visitor experience would not be affected by current natural resource conditions. For all visitors, the encroachment of conifers into the non-wilderness meadows would reduce the views and vistas that draw many visitors to Yosemite.

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

Under Alternative 1, visitation to Yosemite Valley is anticipated to increase approximately 3% annually based on current trends. Outside of wilderness areas, where wilderness permits control the number of overnight users, no formal systems or methods for controlling access would be implemented. This annual increase in the number of visitors is likely to exacerbate crowding and congestion on roads and at key visitor sites in the valley.

Increased visitation would likely affect transportation and parking. Visitors would likely experience increased traffic congestion and increased difficulty finding parking, especially during peak visitation months.

Under Alternative 1, the types and amounts of concessioner-operated visitor services currently offered throughout the park would remain as they are currently; however, because the visitor population would continue to expand, there would likely be fewer staff per visitor, which could result in longer lines and more crowding at concessioner-operated visitor facilities and services corridorwide. Visitor facilities and services would not be adjusted to reflect increased visitation.

Under Alternative 1, the number and type of overnight accommodations and campground sites would remain as they are currently. Demand for lodging and camping currently exceeds supply, especially during the peak season. Increasing visitation is likely to exacerbate this problem.

Under Alternative 1, routine trail maintenance would occur consistent with the current programmatic categorical exclusion for trail maintenance in the park. Visitors would experience trail quality consistent with today's conditions and trail conditions would not noticeably diminish. No new trails would be added. Under Alternative 1, there may be continued conflicts between stock and hikers on trails, while some improvements to the visitor experience will continue to be made through existing restoration actions.

Under Alternative 1, educational and interpretive activities related to natural and cultural resources would be guided by current plans and the recommendations of the recent *Comprehensive Interpretive Plan*. This document guides parkwide educational and interpretive activities for the coming five to 10 years. Visitors would continue to have access to a wide variety of interpretive activities, including exhibits, signage, talks, and guided hikes.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

In Segment 1 meadows and other sensitive natural areas would continue to be affected by stock grazing and human use. NPS would continue ongoing resource management activities to improve management of stock and restore areas affected by human use.

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

Merced Lake High Sierra Camp. The Merced Lake High Sierra Camp would remain at its present size (60 beds) and operate much as it does today. The Merced Lake High Sierra Camp would remain located on land designated as a Potential Wilderness Addition. The Merced Lake High Sierra Camp is the subject of differing public opinion. Some visitors feel that, despite its location in a Potential Wilderness Addition, the Merced Lake High Sierra Camp is part of Yosemite's history and adds to their visitor experience and should remain in the wilderness. Others feel that the High Sierra Camp is a developed use that is not appropriate in the wilderness and should be removed.

Camping. Backpacking and camping in Little Yosemite Valley, Moraine Dome, and the Merced Lake Backpackers camping area would remain unchanged from current conditions. Together, the zone capacities for these areas is approximately 200 campers who mostly camp in designated camping areas. Little Yosemite Valley and Merced Lake Backpackers camping areas would retain the existing facilities including restrooms. Moraine Dome would continue to have no facilities. Backpackers could also continue to camp away from the Merced River in dispersed sites. Retention of designated campsites would be beneficial to those visitors who appreciate having some facilities (e.g. restrooms) as part of their experience in the wilderness. Some visitors, desiring a more primitive wilderness experience, would experience the designated camping areas and facilities as detracting from their experience. The Wilderness Character section of this chapter evaluates Alternatives 1 through 6 in light of the mandated characteristics of wilderness. This section addresses wilderness from the different perspective of visitor experience.

Boating. Actions that would permit private boating would not be established in wilderness segments.

Overnight Capacity and Wilderness Permits. Overnight access to the wilderness would continue to be based upon wilderness zone capacities and regulated by wilderness permits that limit the number of overnight visitors that can enter the wilderness each day at various trailheads. Despite these regulations, some visitors would perceive crowding and an unacceptable number of visitor encounters while others would not. The total capacity of the Little Yosemite Valley Zone would remain at 150. The demand for overnight use permits in the wilderness would continue to exceed supply, leaving some visitors unable to secure a permit and thus unable to have the recreational experience they planned at the time they desired. The estimated number of overnight users in Segment 1 under Alternative 1 is 350 and the estimated number of day users is 380.

Segment 1 Impact Summary. Implementation of Alternative 1 would result in segmentwide, long-term, negligible, adverse impacts on visitor experience and recreation within Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1, visitors would have much the same experience as they do today but with more people

due to a projected 3% annual increase in visitation. Baseline peak day use, or people at one time (PAOT) within Yosemite Valley under Alternative 1 would continue to be around 11,727, while maximum overnight capacity would remain at about 6,564. The visitor experience of those attuned to natural and cultural resource needs and conditions would likely be lessened by the impacts of human use on some of the valley's meadows and riverbanks and by the presence of structures, campsites, trails, and parking lots within the floodplain, which affect water quality and riverbank condition. Those visitors who are more interested in sightseeing, and who come for a day visit to a few select sites, would likely be less aware of resource impacts. Those visitors who stay longer and visit mainly for recreation may notice some impacts of human use along riverbanks and other high-use areas. All visitors would notice crowding during peak months at many destinations and along trails.

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

Activities. Under Alternative 1, a wide range of activities would continue to be provided, but many of those activities would be crowded during peak visitation months. Those visitors engaged in water-based activities, such as swimming, rafting, and paddling in the Merced River, would likely experience crowding during peak months. Visitors engaging in land-based activities, such as hiking, bike-riding, horseback riding, and scenic driving, would be similarly affected by crowding. Nonresource-based recreation, such as ice skating and swimming in pools would continue to be available, with visitors using swimming pools experiencing crowding during warm weather. Day use sites, such as Swinging Bridge, Sentinel Beach, and Cathedral Beach, would continue to exceed their intended visitor use capacity and visitors engaged in these activities would likely experience crowded conditions. Picnic facilities and restrooms at these sites would remain undersized. Key destinations, including Yosemite, Bridalveil, Vernal, and Nevada falls and the routes leading to them, would seem crowded on peak days, lessening the quality of visitors' experience of these sites.

Visitor Services. In addition to recreational activities, the valley would continue to support a wide range of visitor services, including food and beverage facilities such as snack shops, buffets and food courts, bars, restaurants, and grocery stores; and retail establishments including gift shops, sporting goods stores, and bicycle and raft rental facilities. Visitors staying in overnight accommodations do not have an option to cook and rely on the food and beverage services for their meals. Some visitors consider the existing amount of commercial activities to be more than necessary and not in keeping with the natural resource qualities of the valley.

Camping and Lodging. Under Alternative 1 in Segment 2, a total of 466 campsites would accommodate up to 2,892 people per night, and a total of 1,034 units of lodging — including hotels, lodges, and tent cabins — would accommodate up to 3,672 people per night. In both cases, demand would continue to exceed supply, especially during peak visitation months. Visitors able to secure reservations for lodging or camping may experience impacts resulting from the general crowded nature of the Merced River corridor during peak months. Those visitors unable to secure lodging in the park would be required to change their plans or stay outside the park. Under Alternative 1, for every one lodging opportunity, there would be 0.45 camping opportunities. In other words, camping would make up 31% of the total overnight accommodations in Yosemite Valley.

Parking. Under Alternative 1, approximately 2,337 parking spaces would be available for day visitors in the valley. This is a mix of spaces that includes: lot parking, endorsed parking and unendorsed parking spaces. These numbers would likely not increase with the increase in visitors. Demand for parking currently exceeds supply during peak season. As the number of visitors increases, visitors would notice related

increases in congestion, noise, and pedestrian/vehicular conflicts, as well as a reduction in air quality. All of these would negatively affect the experience of most visitors.

Transportation. Regional bus service into Yosemite Valley would be expanded during the peak summer season under Alternative 1, allowing an estimated maximum of 720 people at one time to arrive in the valley on commercial tour buses and 267 people at one time from regional transit. Within the park, shuttle service would continue to operate at seven- to ten-minute intervals. Both the number of buses and the frequency would remain constant and could be inadequate to meet the increased number of visitors.

Total Visitation. Under Alternative 1, the number of peak day use (PAOT) would be 11,727, and the maximum number of overnight visitors would be 6,564. There would be no day-use reservation system or ability to control the number of visitors before their arrival at the entrance station. Visitors would be likely to experience some degree of crowding, congestion and difficulty finding parking spaces during periods of peak visitation. The levels of crowding, congestion and difficulty finding parking would increase if numbers of visitors increase during periods of peak use.

Segment 2 Impact Summary. Implementation of Alternative 1 would result in segmentwide, long-term, major, adverse impacts on visitor experience and recreation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Segment 3 (Merced River Gorge) and Segment 4 (El Portal) experience minimal visitor use. Most visitors pass through these segments on their way to and from Yosemite Valley. There are no facilities in Segment 3. Primary facilities in Segment 4 are the El Portal Administrative Facility and the residences and limited commercial facilities in the community of El Portal. Due to the presence of both the Administrative Facility and employee housing, there are human-made features and activities in Segment 4 that affect the Merced River's natural condition, including a levee, abandoned infrastructure, riprap, and roadside parking affecting water quality and the community of valley oaks. Under Alternative 1, these features and activities would continue to affect natural resources and water quality, but would not have a significant impact on the visitor experience due to the small number of visitors to Segment 4.

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

Segments 3 and 4 under Alternative 1 would continue to be lightly used by visitors. Current visitor activities in Segments 3 and 4 include scenic driving along Highway 140, rock climbing, and river-related activities such as swimming, private boating, and fishing. Camping is not allowed in Segments 3 and 4, and no facilities would be provided for camping under Alternative 1. Due to the projected 3% annual increase in visitation, activities and recreation areas in Segments 3 and 4 may become slightly more crowded as visitors, seeking an alternative to visiting the valley, recreate in this area. NPS visitor facilities in Segments 3 and 4 include the Cascades Picnic Area and the Arch Rock Entrance Station.

Parking. Under Alternative 1, there are 180 parking spaces in Segment 3 and 214 parking spaces in Segment 4, mostly along the roadsides and at the store and gas station. Despite future increases in visitation, parking is not likely an issue for recreational visitors in Segments 3 and 4, as recreational use is limited in these segments.

Total Visitors. Under Alternative 1, the number of people recreating in these segments could increase slightly due to the projected growth in visitors, however Segments 3 and 4 would continue to provide scenery, uncrowded conditions, and a variety of water-based recreation opportunities.

Segments 3 and 4 Impact Summary. Implementation of Alternative 1 would result in segmentwide, long-term, negligible, beneficial impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

This area includes wilderness (Segment 5 and portions of Segments 6 and 7), a WSRA wild segment (Segment 8); the Wawona Impoundment (Segment 6), and Wawona (Segment 7). Segments 5 and 8 are remote and undisturbed, and resource quality is high due to low use levels. Wawona Impoundment is off-limits to visitors because of safety and water quality concerns. Resource impacts would be most noticeable in Wawona.

Low summer flows related to the Wawona Impoundment and surface water withdrawals could reduce river flows downstream. Visitors participating in water-based recreation activities, especially rafting and floating, may find there is less water available, which could alter the experience and also increase crowding as visitors seek those locations where there is the most water.

Reduced flows may also result in lower water quality due to higher sediment levels. Additionally, water quality issues that could affect the quality of visitors engaged in water-based recreation activities could be negatively affected by ground and surface water contamination from septic tanks and leech fields not functioning properly at the Wawona Campground, which could affect both ground and surface water quality if capacity is exceeded.

Some facilities and activities in Segment 7 would remain in the floodplain, including abandoned infrastructure; the Wawona Campground dumpsite; informal trails, some of which extend across private land; and a number of campsites. These activities would continue to cause riverbank erosion. Owners of the private property where visitors trespass to access the Wawona Swinging Bridge would continue to be unhappy with the unauthorized use and the related impacts to their private property. Others, including those visitors accessing the river via informal trails, would continue to seek out dispersed areas to recreate with fewer crowds. Those in the riverside campsites would continue to camp in these locations.

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

Segments 5 and 8 are remote and would continue to be used by hikers. A small amount of backpacking occurs in Segment 5, and some Class 5 boating occurs in Segment 8. These segments experience a small number of visitors and the visitor experience is satisfying to those who visit.

Facilities. In Wawona, visitors would continue to experience crowding at almost all venues during peak summer months. At the Wawona Store Picnic Area, crowding, resulting from a shortage of picnic facilities, seating, and shade, as well as undersized restrooms, would worsen as the number of visitors increases.

Recreational Activities. Visitors participating in hiking, fishing, biking, swimming, and nonmotorized boating would experience increasingly crowded conditions as the number of visitors increases. Opportunities for experiencing solitude while engaging in recreational activities would be reduced, especially during months of peak visitation at popular day-use areas along the river.

The Wawona stables would continue to offer day rides into the wilderness. This would continue to cause minor conflicts between stock and hikers and impact the quality of the trail due to stock urine, feces and flies.

Parking. Day parking capacity in Wawona would be 290 spaces, which would become increasingly inadequate as the number of visitors grows. This would increase congestion as people circle the area searching for parking.

Camping and Lodging. Under Alternative 1, a total of 99 campsites, including one group and two horse sites, would accommodate up to 618 people per night. A number of campsites would remain in the floodplain, providing a unique opportunity for visitors to camp close to the water. In terms of lodging, a total of 104 units at the Wawona Hotel would accommodate up to 247 people per night. In both cases, demand would continue to exceed supply, especially during peak visitation months.

Total Visitation. Peak day-use levels in Segments 6 and 7 under Alternative 1 would be approximately 1,295 people at one time (PAOT). Peak visitation within Segments 5 and 8 would total fewer than 30 and 10 PAOT, respectively.

Segments 5-8 Impact Summary. Implementation of Alternative 1 would result in segmentwide, long-term, moderate, adverse impacts on visitor experience and recreation within Segments 5-8.

Summary of the Alternative 1 (No Action) Impacts

Under Alternative 1, park visitation is expected to increase 3% annually (approximately 117,000 people per year based upon 2011 visitation). Visitor services and facilities, such as restaurants, shops, and raft and bicycle rentals, would continue at current levels. The number and types of overnight accommodations, both lodging and campsites, would not change, remaining at post-1997 flood and rockslide numbers. Access to, availability, and diversity of recreational opportunities in the Merced River corridor would be similar to current opportunities and include the use of nonmotorized watercraft (e.g., rafts, inner tubes, kayaks), swimming and wading, hiking, backpacking, camping, rock climbing, fishing, sightseeing, photography, nature study, bicycling, and stock use. Roads and parking would retain their current configurations.

Alternative 1 would not affect access to or types of visitor facilities and services, overnight lodging, campgrounds, or recreation activities. However, potential increased visitation over time could result in a corridor-wide, long-term, moderate to major, adverse impact on the visitor experience owing to uncontrolled crowding and congestion at existing recreation sites and visitor facilities; the continued inability to meet demand for camping and lodging; and congestion on roads and in parking lots. These impacts would likely be most noticeable during months of peak visitation.

Cumulative Impacts of Alternative 1 (No Action)

Cumulative impacts on visitor experience are based on analysis of past, present, and reasonably foreseeable future actions in and around Yosemite National Park, in combination with potential impacts of Alternative 1. The projects identified include only those that could affect visitor experience within the Merced River corridor or in the study area. See Appendix B for a full list of cumulative projects. In general, this includes construction, removal, or improvements to visitor services and does not include employee housing projects.

Past Actions

Past actions have generally resulted in beneficial impacts on the visitor experience by providing access to recreational opportunities within the Merced River corridor and the study area, and by improving existing recreation opportunities, visitor facilities and services, and overnight accommodations. However, these past park improvements could be seen as non-beneficial to some visitors who prefer less development and a more primitive experience. These past actions include:

- Various trail and road improvement projects
- Lower Yosemite Fall Project
- Yosemite Valley Campground Restroom improvements
- A range of orientation and interpretation services in and immediately surrounding the Merced River corridor, which include visitor centers, wilderness centers, ranger-led tours, and guided wilderness trips
- The Ahwahnee improvement projects
- Curry Village development
- Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation
- Yosemite Valley campground improvements
- Capital Improvement Fund ABAAS/ADA Compliance improvements

Past actions also include a decrease in overnight lodging and camping facilities in Yosemite Valley. The closure of the Upper River and Lower River campground facilities following the 1997 flood eliminated 376 campsites from use. As a result, there is a shortage of camping opportunities in the valley and demand regularly exceeds supply. Following the rock fall in 2008, an additional 122 lodging units were removed from use due to being located in the rock fall hazard zone.

Present Actions

Similar to past actions, present actions would result in beneficial impacts. New and improved facilities enhance visitor experience. However, management plans can result in both adverse and beneficial impacts on visitor experience. For example, management plans may reduce or close existing recreational opportunities that some visitors would see as adverse for the lack of access to these resources. However, limiting recreational opportunities due to congestion would improve opportunities for solitude and a primitive and unconfined recreational experience for other visitors. Specific examples of present actions include the following:

- The *Ahwahnee Comprehensive Rehabilitation Plan*, Wawona Road Rehabilitation Project, and Tioga Road Rehabilitations have each improved park facilities;
- The Wahhoga Indian Cultural Center provides visitor services in a new facility; and
- The *Half Dome Trail Stewardship Plan* and *Scenic Vista Management Plan* have reduced access for some visitors and improved the experience for other visitors.

Other ongoing planning efforts that could have an impact on visitor experience within the park are summarized below, and described more fully in Appendix B.

- *Tuolumne Wild and Scenic River Comprehensive Management Plan*. The final preferred alternative in this plan could impact visitors in the Merced River corridor and would have a long-term, minor adverse impact on the visitor experience. Reductions in capacity at the Glen Aulin HSC could impact the number of visitors who can participate in the High Sierra Loop trips that also include Merced Lake HSC. Additionally, as both Tuolumne Meadows and Yosemite Valley remove commercial horseback day-rides, great demand for this activity would likely shift to Wawona where the concession stables and commercial horseback day-rides would be retained. On busy days, where parking lots fill in Tuolumne Meadows, it is likely that these visitors would continue on to Yosemite Valley as a destination, thereby increasing the demand for Yosemite Valley visitation.
- *Restoration of the Mariposa Grove Ecosystem Project*. The final preferred alternative in this project would have local, long-term, minor, beneficial impacts on the visitor experience in the South Fork Merced River corridor. The redesign of the South Entrance Station area would have local, temporary, minor, adverse impacts on the visitor experience associated with the construction impacts. The additional parking at the South Entrance Station area will more directly address the demand for parking in this area and alleviate congestion and crowding in Wawona associated with vehicle and commercial tour bus parking for visitors accessing the Mariposa Grove via the park shuttle bus, resulting in long-term, moderate, beneficial impacts to the visitor experience.

Reasonably Foreseeable Future Actions

Future actions could result in both beneficial and adverse impacts. New and improved facilities that would enhance visitor experience include:

- Ahwahnee Dormitory Seismic Upgrades
- The Ahwahnee Improvements

Future actions that could benefit visitor services include:

- Concessioner Prospectus updates

Management plans that could result in a lack of access for some visitors and an improved experience for other visitors include:

- *Yosemite Wilderness Stewardship Plan/EIS*

Overall Cumulative Impacts of Alternative 1 (No Action)

Future management of Yosemite National Park, particularly areas within or near the Merced River corridor, could result in both beneficial and adverse impacts on visitor experience, as described above. Alternative 1, when considered with past, present, and future actions, would continue to allow for availability and diversity of recreation activities and visitor services and facilities similar to current conditions. This could result in enhanced visitor experience for some and reduced access for others. Thus long-term, adverse impacts would be moderate.

Alternative 1 would contribute to the adverse cumulative impact of crowded localized conditions along the river corridor.

Alternative 1 would not address the shortage of camping and overnight lodging opportunities in Yosemite Valley. Although this would not have a cumulatively additive impact compared with current conditions, when compared to conditions at the time of designation (1987), this would continue to be a reduction in camping opportunities in the study area. This would have a long-term, adverse impact on the availability and diversity of visitor services.

With the NPS anticipated 3% increase in annual visitation, crowding and congestion could increase in the

gateway communities as visitors seek overnight lodging, meals, supplies, and fuel outside of the park. This could be considered a regional, short-term, moderate, adverse impact. However, in the long-term, this may be a beneficial impact because more services and facilities could be provided to visitors in areas outside of the park, thus decreasing congestion and crowding within the park. The inability to meet camping and lodging demand could constitute a regional, long-term, moderate, adverse impact because some visitors would be displaced as a result of an insufficient number of campsites and lodging units in the park.

Environmental Consequences of Actions Common to Alternatives 2–6

Corridorwide Actions

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Corridorwide programmatic biological resource actions common to Alternatives 2-6 include removal and restoration of informal meadow trails; removal of conifer seedlings from meadows; restoration of eroded riverbanks; establishment of a 150-foot riparian protection zone where new development would be prohibited and removal/relocation of all campsites within 100 feet of the ordinary high water mark.

These actions would improve natural resources and the visitor experience. Eliminating informal trails would improve the overall quality of the trail system which is beneficial to the visitor experience. For a small number of visitors the closure and revegetation of meadow trails would be considered a limitation on access and availability. Associated educational and interpretive actions would improve visitor understanding of natural processes.

Actions to remove vegetation encroaching in meadows would improve views and vistas to and from key locations within the Merced River corridor and improve the visitor experience for most visitors. Being able to experience the views and vistas of important natural landmarks is a significant component of passive recreational activities, such as sightseeing, contemplation, and painting, as well as active pursuits such as hiking. If prescribed fire is used to eliminate encroaching vegetation, visitors present at the time of the burn would experience smoke and poor air quality. This would be a short-term, minor adverse impact on the visitor experience.

Removal and relocation of campsites would eliminate access to and availability of camping in close proximity to the water. This would diminish the visitor experience for those accustomed to these campsites.

Hydrologic/Geologic Resource Actions. Corridorwide programmatic hydrologic/geologic resource actions common to Alternatives 2-6 include removal of underground infrastructure that alters hydrology, removal of riprap and replacement with native vegetation, and management of large wood. These actions would improve natural resource conditions and hydrologic function throughout the corridor, thereby enhancing the quality of the visitor experience.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Programmatic biological resource actions common to all alternatives in Segment 1 include:

- Relocating trails out of sensitive habitats
- Removing informal trails and revegetating with native plants in Merced Lake Shore Meadow
- Rerouting trails from wetlands in Echo Valley and mineral spring outflow between Merced and Washburn lakes
- Rerouting trails from Triple Peak Fork Meadow

These natural resource improvements would enhance the natural character of the wilderness in Segment 1 and improve the quality of the visitor experience.

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

Boating. Under Alternatives 2-6, private boating would be allowed in Segment 1. Allowing private boating in Segment 1 by permit would provide a changed recreation opportunity for some visitors to this segment.
Segment 1 Impact Summary: Actions to protect and enhance river values within Segment 1 would have a local, long-term, negligible to minor, beneficial impact on visitor experience and recreation. Actions to manage user capacities, land use, and facilities within Segment 1 would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segment 1.

Segment 2: Yosemite Valley

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 2 under Alternatives 2-6 include: removing one and formalizing five other vehicle pullouts for river access along El Portal Road; restoring 4.5 acres of riparian habitat in the area of Yosemite Lodge and 20 acres in the area of the western portion of the Former Upper Pines Loop Campground; removing infrastructure and restorating an additional 30 acres at the Former Upper and Lower Pines campgrounds; restoring impacted areas of Ahwahnee Meadow, which includes removal of tennis courts; improving access and removing infrastructure from riparian areas at Cathedral Beach, Housekeeping Camp, and Bridalveil; 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. This work would require the use of heavy equipment, including excavators, skid steers, loaders, and dump trucks.

These projects would have significant short-term impacts on the visitor experience by limiting visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. The larger the project in size and the longer its duration, the greater the impact on the visitor. In certain circumstances, restoration activities, although beneficial to the resource, may alter the visitor's experience by limiting direct interaction with natural resources (e.g., touching versus seeing). Generally, increased visitor use results in greater restrictions in order to protect the resource and therefore would have a short-term, minor, adverse impact on visitor experience. Visitor experience benefits include improved river access, and opportunities for education and interpretation of restoration action. In the long-term, the results of these actions would improve natural resources and hydrologic function and would have moderate beneficial impact on visitor experience.

Hydrologic/Geologic Resource Actions. Programmatic hydrologic/geologic actions common to Alternatives 2-6 in Segment 2 include installation of constructed log jams and bioengineered stabilization on riprap at Superintendent's Bridge; placement of large wood to lessen scouring from Clark's Bridge and the

road bridge at Happy Isles, relocating the Upper Pines Dump Station to protect water quality, removal of 3800 feet of pack stock trail adjacent to the river, redesign of the Swinging Bridge Picnic Area, placement of large wood at Sentinel Bridge to improve free-flow, and development of a large wood management policy. These projects would all involve short-term construction impacts, and closure of the areas where work is occurring. In the long-term, these actions would have a moderate, local beneficial impact on the natural environment and hydrologic function of the river and the quality of the visitor experience. The redesign of the Swinging Bridge Picnic Area would also improve access to and the quality of this visitor facility.

Hydrologic/geologic projects also include the removal and revegetation of 3,400 feet of riprap. The 3.400 feet of restoration will take place at several locations along Leidig Meadow, along Sentinel Boardwalk, near Sentinel Crossover, on the west side near Housekeeping Camp Bridge, on both sides of the river at Stoneman Bridge, two small areas south and east of the Ahwahnee Bridge, a small area east of Lower Pines Campground, and an area northeast of the Upper Pines Campground. Also, the removal of an additional 2300 feet of riprap and riverbank stabilization is also common to all. Stabilization activities are planned at Swinging Bridge and Superintendent's Bridge; and along the northern riverbank from Ahwahnee Bridge to Sugar Pine Bridge. In the short-term, these projects would have a local, moderate, adverse impact on the visitor experience due to construction impacts, restricted access to the areas of the river where riprap is being removed, noise and dust caused by equipment use and trucks, and increased congestion caused by trucks used to haul riprap from the project area. In the long-term, this project would greatly improve the natural character and hydrologic function of the river and therefore improve the quality of the visitor experience by reducing the flood hazard, and restoring meadows and the riparian environment which is visually pleasing.

Removal of the abandoned gauging station at Pohono Bridge and removal of former Happy Isles footbridge footings and gauge station are two additional projects that are common to Alternatives 2-6 in Segment 2. These two projects would have a short-term adverse impact on the visitor experience due to construction impacts and possible closure of Pohono Bridge. The latter action would eliminate circulation involving this bridge until construction is completed. In the long-term, this project would greatly improve the natural character and hydrologic function of the river and therefore improve the quality of the visitor experience by reducing the flood hazard, and restoring meadows and the riparian environment which is visually pleasing.

Placement of eight constructed log jams in the channel between Clark's and Sentinel bridges would have a short-term adverse impact on the visitor experience due to construction impacts including closure of this stretch of the river for up to 12 weeks and noise, compaction, and dust from heavy equipment and trucks used to transport logs and place and secure the log jams. In the long-term, this project would improve hydrologic function of this stretch of the river which would lessen scouring and river widening, improving natural conditions and the visitor experience in part by removing obstacles to boating.

A final project common to Alternatives 2-6 in Segment 2 is the restoration of 8.7 acres of riparian ecosystem at Yosemite Lodge where units were lost during the 1997 flood. This action would have a short-term adverse impact on visitor experience due to construction impacts and closure of this area. Opportunities for education and interpretation of this restoration project during construction would enhance this aspect of the visitor experience. Once complete, this project would improve the natural character and hydrologic function of this area, improving the quality of the visitor experience by reducing the flood hazard, and restoring meadows and the riparian environment which is visually pleasing.

Cultural Resource Actions. Programmatic cultural resource actions common to Alternatives 2-6 in Segment 2 involve rerouting roads and trails, closure and restoration of informal trails, removal of

infrastructure, removal of graffiti, and restoration of traditionally used plant populations. Most of these actions would include some form of education and interpretation that would increase access to and availability of information and enhance visitor understanding of cultural resources. Rerouting or closing and restoring informal roads and trails and removal of infrastructure and graffiti would also improve natural resources and therefore, the visitor experience. In those areas where cultural resources are also used for climbing, eliminating access to these sites would have a short-term, local, minor adverse impact on those who use these areas.

There is one cultural resource project in Segment 2 that is common to Alternatives 2-6. This project would fence off access to a large bedrock mortar near Yosemite Lodge, eliminating the non-technical climbing on this feature. Eliminating this recreational activity would be a local, short-term, negligible adverse impact. Protection and interpretation of this resource would improve the educational and interpretive component of the visitor experience. Overall this project would have a local, minor, long-term beneficial impact on the visitor experience.

Scenic Resource Actions. There are programmatic scenic resource actions proposed for Segment 2 that are common to Alternatives 2–6.

Several projects propose the thinning and removal by mechanical methods of trees greater than 6 inches diameter at breast height (dbh) in order to improve near and distant views of meadows, waterfalls, and key features such as Half Dome and El Capitan. In the short-term, these projects would have local, minor, adverse impacts on the visitor experience as the areas where the tree removal is occurring would likely be inaccessible to visitors, and tree removal projects may create noise and dust. Once complete, these projects would improve access to views and vistas from trails, bridges, picnic areas, roads and buildings in Segment 2. Because viewing the scenery is an important aspect of the visitor experience, these projects would have a local, moderate, long-term beneficial impact on the visitor experience. Many of these projects also involve restoration of the project areas once tree removal is complete. This includes closure and revegetation of informal trails created by visitors in order to access a view and restoration of meadows and project areas once trees have been removed. These actions would improve the natural resources in those project areas where restoration in proposed which would be a local, moderate, long-term beneficial impact on visitor experience.

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

Recreation Facilities. Recreation activities removed under Alternatives 2–6 would include commercial dayrides and the Ahwahnee tennis court (currently unused).

All commercial stock day rides would be eliminated in Segment 2 under Alternatives 2-6. For those visitors who are unable to walk a great distance, stock rides provide an opportunity to access Mirror Lake and view Vernal Fall. It also provides an activity for those visitors who desire a different type of experience. However, elimination of day stock rides would improve trail conditions by eliminating the dust, feces, flies and urine related to stock use on these trails. This would be a benefit to hikers whose visit is negatively affected by such conflicts.

Also common to Alternatives 2–6 would be substantial improvements to Cathedral, Sentinel, and Swinging Bridge picnic areas. These areas are currently affected by overuse. Improvements would increase the overall quality of these areas by improving restrooms and parking, reducing crowding, and directing visitors to specific use areas.

A wide variety of nature-based recreational activities, such as hiking, visiting key destinations, contemplation, and river swimming, would remain under Alternatives 2–6.

Commercial. Commercial and visitor services that would be removed from or repurposed to a noncommercial use under Alternatives 2–6 include the Happy Isles and Yosemite Lodge snack stands, the Concessioner Garage building, the Yosemite Lodge Nature Shop, the Village Sport Shop (which would become a visitor contact center), the Yosemite Art Center, and the Concessioner General Office. Removal of these facilities would require visitors to find some commercial items elsewhere. In the case of food, many options would remain; however, for visitors needing sporting equipment, the removal/repurposing of the Village Sport Shop would be inconvenient and could alter travel plans if an essential piece of equipment was forgotten. Emergency auto services would still be available as the Concessioner Garage service would be relocated to the Government Utility Building. While these changes would eliminate visitor serving facilities within the park, the absence of these facilities would not directly affect visitors' ability to experience the river.

Interpretation. Interpretive and educational activities common to Alternatives 2–6 in Segment 2 would include the addition of an interpretive (nature) walk through the former Lower River Campground. This and other interpretive and educational activities benefit visitors and improve their experience because they are better able to understand river-related natural processes, the park's ecological restoration work, and how they can protect the river.

Transportation. Transportation improvements that would simplify visitor access under Alternatives 2–6 include the addition of shuttle stops at Camp 4 and at El Capitan Meadow. These would provide much needed visitor access to these frequently visited destinations.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in short-term, minor, adverse impacts on visitor experience. Within Segment 2B (West Valley), such management actions would result in short-term, minor, adverse impacts on visitor experience. Over the long-term, these actions would have moderate beneficial impacts on visitor experience and recreation within Segment 2. Actions to manage use capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have local, short-term, minor, adverse impacts on visitor experience. Within Segment 2B (West Valley), such management actions would result in local, short-term, minor, adverse impacts on visitor experience. Over the long-term, these actions would have minor beneficial impacts on visitor experience and recreation within Segment 2.

Segments 3 and 4: Merced River Gorge and El Portal

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 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 closure of this site, construction disturbance, and resulting noise and dust would have a local, short-term, minor, adverse impact on visitor services.

Hydrologic/Geologic Resource Actions. Programmatic hydrologic/geologic actions common to Alternatives 2-6 in Segment 4 include removal of abandoned infrastructure at Cascades Picnic Area and development of mitigation measures for revetment construction and repair. The former action would improve the Cascades Picnic Area which would improve access to this facility and the quality of the visitor

experience. This would also improve the natural character and hydrologic function of this area, another benefit to the visitor experience.

Cultural Resource Actions. There are three programmatic cultural resource actions in Segment 4 that are common to Alternatives 2-6. These actions involve removal of abandoned infrastructure, informal trails, and roads to protect cultural resource sites. Protection and interpretation of cultural resources would benefit the educational and interpretive component of the visitor experience.

Scenic Resource Actions. The Scenic Vista Management Plan in the Merced River corridor sets forth one project in Segment 3 to remove conifers at the Cascade Falls viewpoint to maintain views of the falls. This project involves the removal by mechanical methods of a maximum of 14 trees greater than 6 inch diameter breast height. In the short-term this project would have local, minor, adverse impact on the visitor experience at Cascade Falls during tree removal as this area would likely be inaccessible to visitors, and tree removal may create noise and dust. Once complete, this project would improve access to views of Cascade Falls from this viewpoint. Because viewing scenery is an important aspect of the visitor experience, this project would have a local, moderate, long-term beneficial impact on the visitor experience.

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

Visitor Facility. Under Alternatives 2–6, a public restroom would be constructed in El Portal to accommodate visitors traveling to and through the El Portal Administrative Site. Because one does not exist currently, this would improve the experience for recreational visitors.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in long-term, minor, beneficial impacts on visitor experience and recreation within Segments 3 and 4. Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, beneficial impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Actions common to Alternatives 2–6 that are designed to protect and enhance resource values in Segments 5, 6, 7, and 8 include water conservation measures to provide more water for river-dependent species. This would also improve the quality of water-based recreation activities owing to increased flows in the river. Other actions that are designed to improve flow and enhance river function include removal of abandoned infrastructure, removal of a dumpsite adjacent to the South Fork Merced River, and relocation of the Wawona Maintenance Yard away from the river. In each of these cases, the native ecosystem would be restored. As opposed to seeing facilities and infrastructure along the river, visitors would experience a much more natural corridor, which would improve the quality of their experience.

A new operations facility would be constructed, which would improve operational efficiency but would have no direct impact on visitor experience.

River access would be formalized near the Wawona Store, which would greatly improve the condition of the slope in this area. Visitors would be directed to a path that would provide river access while protecting and restoring denuded riverbanks. This would enhance visitor safety by providing a formal route to the river and improving natural resources. Similar improvements would occur at the Wawona Picnic Area along the South Fork Merced River, thus benefitting both natural resources and visitors.

Hydrologic/Geologic Resource Actions. Programmatic hydrologic/geologic actions common to Alternatives 2-6 in Segment 7 include restoration of the Greenemeyer Sandpit and formalizing roadside parking to reduce water quality contamination. The former action would improve natural resource quality and hydrologic function of the river in this segment and would therefore benefit the visitor experience. Formalizing roadside parking would provide access to removal of abandoned infrastructure at Cascades Picnic Area and development of mitigation measures for revetment construction and repair. The former action would improve the Cascades Picnic Area which would improve access to this facility and the quality of the visitor experience. This would also improve the natural character and hydrologic function of this area, another benefit to the visitor experience.

Cultural Resource Actions. There are one programmatic cultural resource action in Segment 5 and four in Segment 7 that are common to Alternatives 2-6. These actions involve removal of informal trails and parking, relocation of campsites to protect cultural resource sites from unintentional damage, and preparation of a site management plan for the Wawona hotel to reduce construction and visitor use impacts on cultural resources. Protection and interpretation of cultural resources would benefit the educational and interpretive component of the visitor experience.

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

Visitor Facilities. Under Alternatives 2–6, the visitor facilities and restrooms at the Wawona Store would be renovated. This action would add additional picnic facilities, seating, and shade and also expand the restroom facilities, which currently are undersized for the number of people served. Visitors waiting in this area for a shuttle would experience a more comfortable, less crowded environment.

The restrooms at Wawona Campground would also be renovated under Alternatives 2–6. The addition of a new, expanded facility would benefit campground visitors and replace an aging system.

Also common to Alternatives 2–6 in Segment 7 is the construction of a new trail across public land on the south side of the South Fork Merced River to access the Wawona Swinging Bridge. Restrooms, waste disposal, and parking would also be added. A formal trail would make it easier for visitors to access various parts of the river without travelling on informal trails across private land. New facilities would enhance the quality of the visitor experience, making it easier to park and spend the day on the river.

Under Alternatives 2–6, limited private boating would be allowed in the South Fork Merced River wilderness (Segments 5 and 8). Private boating in Segments 5 and 8 would provide a recreation opportunity and enhance the visitor experience for those visitors who participate in this activity.

Segments 5-8 Impact Summary: Actions to protect and enhance river values would result in long-term, minor, beneficial impacts on visitor experience and recreation within Segments 5-8. Actions to manage user capacities, land use, and facilities would also have local, long-term, minor, beneficial impacts.

Summary of Impacts Common to Alternatives 2–6

Actions common to Alternatives 2–6 serve as a basis for the improvement of biological, scenic, hydrological/geological, and cultural improvement in all alternatives. Actions to manage visitor use and experience would result in the restoration of 176 acres of meadow and riparian habitat areas. Actions to manage facilities and use eliminate many non-resource-based activities and facilities, such as ice skating, snack stands, and retail facilities; improve restrooms; allow wilderness boating; and construct new trails and access points. With implementation of mitigation measure MM-VEX-1, as appropriate (see Appendix C),

actions common to Alternatives 2–6 would have a corridorwide, long-term, moderate, beneficial impact on access to and availability of recreation and visitor services and would improve the overall quality of the visitor experience by reducing development, improving natural resource quality and increasing the natural resource focus of the visitor experience.

Environmental Consequences of Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

All River Segments

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Manage User Capacity and Facilities

Under Alternative 2 in Segment 1, the most notable changes to the visitor experience would be the removal of the Merced Lake High Sierra Camp, all designated camping converted to dispersed camping, and reduced wilderness zone capacities. Reduced capacities and dispersed camping allow for the opportunity for visitors to camp out of sight and sound from other campers.

Merced Lake High Sierra Camp. The removal of Merced Lake High Sierra Camp would eliminate overnight lodging in Segment 1. The camp and all related infrastructure would be removed. and the camp would be designated as wilderness. This would create an experience where visitors are self-reliant and the landscape is natural and undeveloped. For visitors who desire this type of experience, the removal of the camp would be beneficial; however, there are many visitors for whom the Merced Lake High Sierra Camp defines the quality of their recreational experience. Some have been visiting this and other High Sierra Camps for generations. Others support the potential Historic District designation of the High Sierra Camp, believing it is a cultural resource from the early days of the park. For these visitors, the closure of the Merced Lake High Sierra Camp would have an adverse impact on their experience both in the wilderness and generally in Yosemite.

Camping. Overnight camping at designated campsites would be eliminated under Alternative 2 in favor of dispersed camping. Dispersed camping and minimal facilities are in keeping with the undeveloped quality of the wilderness. Visitors seeking a true wilderness experience would benefit from these changes. Visitors who desire less crowding but still appreciate a designated area to camp with provision of minor facilities may have a somewhat less positive visitor experience owing to the increase in dispersed camping and removal of facilities.

Wilderness Capacity. Under Alternative 2, the capacity of the Little Yosemite Valley Wilderness Zone would be reduced by 83%, from 150 to 25. Because zone capacity and wilderness permit numbers are related, the number of wilderness permits would also be reduced which would result in even greater difficulty gaining access to the wilderness. However, the reduction in overnight visitors would improve the solitary nature of wilderness camping.

Visitor Use. The capacity of Segment 1 would be reduced from 380 people under Alternative 1 (No Action) to 195 under Alternative 2, a reduction of 49%. The number of day visitors would remain at 125 at one time. This decrease in overnight visitors would reduce the number of wilderness encounters and increase the experience of solitude in the wilderness. Some visitors would benefit from the reduction in activity and visitation; others would be less concerned with these issues because they perceive the wilderness as already uncrowded.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, moderate, adverse impact on visitor experience and recreation within Segment 1.

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, restoring areas from which Yosemite Lodge development was previously removed due to flood damage, and rerouting and revegetating a portion of the Valley Loop Trail. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities and the end result of restored natural areas, would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the impacts would be long-term and beneficial.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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.

These projects would have significant short-term impacts on the visitor experience by limiting visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. The larger the project is in size and the longer its duration, the greater the impact on the visitor. In certain circumstances, restoration activities, although beneficial to the resource, may alter the visitor's experience by limiting direct interaction with natural resources (e.g. touching versus seeing). Generally, increased visitor use results in greater restrictions in order to protect the resource and therefore would have a short-term, minor, adverse impact on visitor experience. Visitor experience benefits include opportunity for education and interpretation of restoration action. In the long-term, the results of these actions would improve natural resources and hydrologic function and would have moderate beneficial impact on visitor experience.

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 2 include: relocating unimproved parking in the Yosemite Village Day-use Parking Area and rerouting a portion of Northside Drive; demolishing 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. These actions would likely limit visitor access while these areas are being restored. Construction impacts including truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the projects would be long-term and beneficial.

The scale of restoration proposed under Alternative 2, in combination with activities common to Alternatives 2–6, would change the physical appearance of Yosemite Valley. There would be fewer roads, trails, buildings, and bridges, and noticeably more relatively undisturbed natural areas. Because the number of visitors would also be controlled under Alternative 2 (see discussion below), the reduction in roads, trails, and riverbank access under Alternative 2 would not result in crowding on the remaining roads and trails.

The interpretive and educational opportunities associated with this scale of restoration would explain these landscape-level changes to visitors. Education would benefit all visitors but would especially help explain why the appearance of the valley has changed.

Impacts of Actions to Manage User Capacity and Facilities

Visitor Use Levels. Under Alternative 2, visitors would experience much less crowding in Segment 2 because peak day use levels would decrease by 42%, from 11,727 to 6,819 PAOT; maximum overnight capacity would decrease by 28%, from 6,564 to 4,758 people per night. Access to Segment 2A (East Valley) by private vehicle would be managed through a day-use parking permit system that would require the purchase of a permit before entry. Alternative 2 would significantly reduce the maximum daily visitation to Yosemite Valley from current levels; however, demand is likely to significantly exceed supply during peak season, resulting in many dissatisfied individuals unable to access parking in Segment 2A (East Valley). Implementing the permit system would benefit those visitors who are able to secure a permit because the valley would be much less crowded during peak season and provide an improved visitor experience.

Camping and Lodging. In keeping with the resource-based experience focus of Alternative 2, total camping would be decreased in Segment 2, from the 466 existing campsites to a total of 450 campsites. More notably, lodging would decrease by 46%, from 1,034 rooms to 556 rooms, due to the removal of Yosemite Lodge and Housekeeping Camp. The total overnight capacity would decrease by 28%, from 6,564 to 4,758. The reduction in total overnight accommodations would exacerbate the demand for overnight facilities, which would continue to exceed the supply. However, under Alternative 2, the proportion of camping to lodging capacity would increase over that of Alternative 1; for every one lodging opportunity there would be 0.81 camping opportunities. In other words, camping would make up 45% of the total overnight accommodations in Yosemite Valley. This is a 14% increase over Alternative 1. So while the total number of overnight capacity would decrease under Alternative 2, a greater proportion of the remaining accommodations would be available to visitors across a broad income range.

Parking. Day parking would decrease by 23% from 2,337 spaces to 1,800 spaces, and peak day use within these areas would decrease from 10,740 to 5,858 people at one time. The greater reduction in day visitors, coupled with other transportation-related improvements and alternatives, would make finding parking much easier and reduce congestion and crowding significantly during peak months.

Recreation Facilities. Additional developed facilities removed under Alternative 2, in addition to those common to Alternatives 2–6, would include the Ahwahnee and Yosemite Lodge pools, bike rental facilities at Curry Village and Yosemite Lodge, Curry Ice Rink, the Curry Village stables and the visitor-serving retail facilities contained in Yosemite Lodge — the gift shop and Mountain Room Bar. The removal of the stables would eliminate this type of recreation from the valley. The actions common to Alternatives 2–6 would eliminate other types of active recreation, including tennis, and so forth. Removal of these additional activities would create an environment characterized mostly by nature-based activities, such as hiking, wildlife viewing, limited private boating, and swimming at designated beaches. Removal of additional retail, in addition to the actions common to Alternatives 2–6, would make the valley much less commercial,

providing mostly for basic needs, with a focus on nature-based experiences.

The removal of the Yosemite Lodge swimming pool would likely affect a large number of visitors. Currently, both the Yosemite Lodge pool and the Curry Village pool are open to the public, while the use of the Ahwahnee pool is limited to hotel guests. The pools are popular in the summer months and provide opportunities for swimming under the supervision of qualified lifeguards during periods when river conditions are not suitable for swimming. Removal of the Yosemite Lodge pool would leave only the Curry Village pool to meet the public demand for pool swimming. The Yosemite Lodge pool is larger, with greater capacity than the Curry Village pool, thus its removal is likely to result in crowding at the Curry Village pool.

All bicycle rental facilities would be removed under Alternatives 2, although visitors could still bring their own bikes for riding. The bicycle rental facilities, which are located in Curry Village and Yosemite Lodge also rent bicycles with attached trailers for children, strollers, wheelchairs, electric mobility scooters, hand crank bicycles (recumbent bicycles), and tandem bicycles for use by riders with limited vision. While the actual number of visitors who utilize these services is small in comparison to total valley visitation, the impact of eliminating the service is likely to be significant to those who need accommodation. Eliminating this service would eliminate this activity for all visitors who did not bring their own bicycle or other form of mobility equipment to address special needs. Removing bicycle rentals would reduce the number of visitors able to experience riding throughout the valley, and could increase vehicular congestion and/or shuttle bus crowding as visitors may choose to drive or take a shuttle bus to the various destinations within the valley that were easy to access by bicycle but too spread out for walking.

Commercial raft rentals would be discontinued under Alternative 2 in favor of private boating, which would be limited to 25 trips per day with designated put-in and take-out locations. This would significantly reduce access to boating in Segment 2 and affect those visitors who come to Yosemite to participate in water activities. The limit on the number of trips per day would further reduce the opportunity to participate in this experience. With limited put-in and take-out locations, which are also day use areas, crowding could increase.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience. Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access, would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.

Segment 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 oak protection areas in the Odger's fuel storage area and the parking lots adjacent to this area. Parking and new building construction would be prohibited within the oak protection areas. The restoration of this area would improve natural resources and have a local, long-term, negligible beneficial impact on the visitor experience.

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

Boating. Alternative 2 would allow for private boating in Segment 3 and implement private boating restrictions in Segment 4. Put-in and take-out locations would be limited as well as the number of boats per day. This would reduce the ability of visitors to casually boat on the Merced River in Segment 4 but would open new recreation opportunities to boat on the challenging section in Segment 3.

Parking. The day parking capacity would be the same under Alternative 2 as under Alternative 1, with 180 spaces in Segment 3 and 214 spaces in Segment 4. Parking is not likely to be an issue for visitors in Segments 3 and 4. Under Alternative 2, the number of visitors passing through Segments 3 and 4 and those recreating in Segment 3 and in Segment 4 are expected to remain constant, with no change from that under Alternative 1.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Manage User Capacity and Facilities

This area includes wilderness (Segments 5 and 8), the Wawona Impoundment (Segment 6), and Wawona (Segment 7). Segments 5 and 8 are remote and undisturbed, and resource quality is high in these segments due to very low levels of use. There are no developed activities or facilities in Segments 5 and 8. Segment 6, the Wawona Impoundment, is off limits to visitors because of safety and water quality concerns.

Camping. In keeping with the restoration theme of Alternative 2, all campsites would be removed from the 100-year floodplain. Visitors who value improved resource conditions would find removal of these campsites beneficial to their experience and in keeping with this restoration-intensive alternative. Removal of these campsites would have a negative impact on the experience of those visitors for whom camping close to the South Fork Merced River is an important part of their experience of Yosemite.

Recreation Facilities. To accommodate the increased restoration focus of Alternative 2, visitors would experience a reduction in the number of facilities and services available, including golf, tennis, and horseback riding. Most noticeably, the Wawona Golf Course and golf shop would be removed under Alternative 2 and the site restored. This would eliminate golfing in the South Fork Merced River corridor. This action would negatively affect visitors for whom golf is an important part of their experience. For those visitors who do not golf or feel golf is an inappropriate activity so close to the river, the removal of this facility and the restoration of the site would be a benefit.

Removal of the Wawona tennis courts would eliminate tennis as a recreational activity in the South Fork Merced River corridor. This might prove to be a disappointment to the hotel visitors who seek out tennis as part of their Yosemite experience. However, this likely involves a small number of guests. For most guests, the removal of tennis would have no impact on their experience in Wawona, and in the long run the removal might improve their experience by affording them more nature-based, river-dependent activities.

Removal of the Wawona stables would completely eliminate day rides from Segment 7. For visitors who participate in these activities, this action would negatively affect their visitor experience. However, participation in these activities is limited, so its removal would not affect most visitors to Wawona.

Boating. Private boating would be allowed in Segment 7, but regulations would limit put-in and take-out sites. This would negatively affect those visitors who are accustomed to unrestricted boating access in Segment 7. Private boating would be allowed in the South Fork Merced River wilderness (Segments 5 and 8). Private boating in Segments 5 and 8 would provide a recreation opportunity and enhance the visitor experience for those visitors who participate in this activity.

Parking. Total day-use parking spaces in Wawona would remain at 290 spaces. This number is currently inadequate during peak times, and visitors would continue to experience crowding and congestion as they search for parking.

Overnight Accommodations. The number of overnight lodging units at the Wawona Hotel would remain the same as under Alternative 1. Demand for overnight accommodations would continue to exceed supply throughout the season. The removal of 32 campsites from the Wawona Campground would result in a 33% reduction in the number of campsites. Demand frequently exceeds supply at this campground and removal of these sites, coupled with similar visitation levels, would exacerbate this problem.

Visitor Use Levels. Peak day use levels (PAOT) would increase over that of Alternative 1, from 1,295 to 1,321, primarily due to increased transit use.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.

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

Alternative 2 is the most restoration-intensive of all the alternatives, focusing on self–reliant visitor experiences and extensive floodplain restoration. Visitors would experience fewer roads, trails, buildings, and bridges, and noticeably more relatively undisturbed natural areas. Restoration actions would improve the quality of natural resources and thus the overall visitor experience. However, under Alternative 2, the extent of the restoration actions, a total of 342 acres in addition to those restoration actions common to Alternatives 2–6, though highly beneficial to resource conditions and river function, would noticeably reduce access to and availability of recreation and visitor services. Actions under Alternative 2 would generally eliminate recreational activities that are not directly resource based. These actions would include closure of Merced Lake High Sierra Camp; an 87% decrease in Little Yosemite Valley Wilderness Zone capacity and related reduction in wilderness permit quotas; elimination of bicycle rentals, commercial rafting, stock use, golf, tennis, and swimming pools; elimination of most nonriver-related visitor services; a 43% reduction in lodging and 8% reduction in camping; and an overall reduction in peak day use levels (PAOT) within the corridor by 12%. These actions would improve the visitor experience once they were within the Merced River corridor as a result of less congestion, but would also result in many people being unable to gain access to Segment 2A (East Valley) via private vehicle and the experiences it provides. Because there will be a reduction in the total number of visitors, these visitors would overall experience less crowding and enjoy a more natural, restored landscape. Overall, with implementation of mitigation measures MM-VEX-1 and MM-VEX-2, as appropriate (see Appendix C); these actions would result in a corridorwide, long-term, minor beneficial impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

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

Cumulative impacts on visitor experience related to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential impacts of the actions under Alternative 2. The projects identified below include only those that could affect visitor experience within the Merced River corridor or in the park vicinity.

Past Actions

The following past actions have had an effect on visitor experience within the park:

- *The General Management Plan for Yosemite National Park (1980)*. This plan is the basic document for management of Yosemite National Park. The *Merced River Plan/EIS* would amend the *General Management Plan* to meet the mandates of the Wild and Scenic Rivers Act.
- *The Concession Services Plan (1992)*. This is the 1992 amendment to the General Management Plan that guides the management of concession enterprises such a lodging, food, retail and other commercial services in Yosemite National Park. The plan serves as the basis for contracts between the National Park Service and the park's primary concessioner. The *Merced River Plan/EIS* would amend the *Concessioner Services Plan* to meet the mandates of the Wild and Scenic Rivers Act.
- *Curry Village Rock Fall Hazard Zone Structures Project*. This project addresses the structures within this zone. The outcome of this plan would affect lodging in this area. Alternative 2 removes structures from the rock fall hazard zone.

Present Actions

Projects currently underway that may have an effect on the visitor facilities and services and the visitor experience include the following plans, projects, and assessments:

- *Tuolumne Wild and Scenic River Comprehensive Management Plan*. The Tuolumne River Plan would establish long-term guidance for protecting water quality, free-flowing condition, and unique values for the portion of the Tuolumne River that flows through the park. Actions proposed in this plan's final preferred alternative could impact visitors in the Merced River corridor and would have a long-term, minor adverse impact on the visitor experience. Reductions in capacity at the Glen Aulin HSC could impact the number of visitors who can participate in the High Sierra Loop trips that also include Merced Lake HSC. Additionally, as both Tuolumne Meadows and Yosemite Valley remove commercial horseback day-rides, great demand for this activity would likely shift to Wawona where the concessioner stables and commercial horseback day-rides would be retained. On busy days, where parking lots fill in Tuolumne Meadows, it is likely that these visitors would continue on to Yosemite Valley as a destination, thereby increasing Yosemite Valley visitation.
- *Scenic Vista Management Plan: Environmental Assessment*. This plan protects Yosemite's views and vistas, which are part of the overall visitor experience. Actions set forth in this plan amend the *Scenic Vista Management Plan*.
- *Restoration of the Mariposa Grove Ecosystem*. Decisions made in this plan are expected to help manage visitor crowding and congestion in Wawona. Actions associated with the final preferred alternative for this project would have local, long-term, minor, beneficial impacts on the visitor experience in the South Fork Merced River corridor. The redesign of the South Entrance Station area would have local, temporary, minor, adverse impacts on the visitor experience associated with the construction impacts. The additional parking at the South Entrance Station area will more directly address the demand for parking in this area and alleviate congestion and crowding in Wawona associated with vehicle and commercial tour bus parking for visitors accessing the

Mariposa Grove via the in-park shuttle bus, resulting in long-term, moderate, beneficial impacts to the visitor experience.

- *Half Dome Trail Stewardship Plan.* This plan addresses wilderness character on this trail and may affect use patterns along trails between Happy Isles and Little Yosemite Valley.
- *Ahwahnee Comprehensive Rehabilitation Plan.* This plan improves visitor facilities and services at The Ahwahnee. Alternative 2 proposes removal of some facilities and services at The Ahwahnee.
- *Ansel Adams Gallery Rehabilitation Plan.* This plan improves a visitor-serving facility.
- *Yosemite Environmental Education Campus.* NatureBridge and the NPS will be constructing a new education center at Henness Ridge (and restoring the Crane Flat campus to natural conditions).

Reasonably Foreseeable Future Actions

- *Yosemite Wilderness Stewardship Plan*. This plan would utilize direction from the *Merced River Plan* to address the Merced River corridor component of this plan. Alternative 2 removes the Merced Lake High Sierra Camp and wilderness camping areas and facilities which would allow for inclusion of the current nonwilderness inholding to be designated as wilderness.

Overall Cumulative Impact from Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

The cumulative impacts of Alternative 2 management measures for visitor experience and recreation would generally be beneficial for Segments 1–8. Past and present facilities improvements and upgrades would enhance the visitor experience and reduce demand on park facilities. Visitors would also benefit from past and present habitat restoration and resource management projects and plans. As a result, the cumulative impact of Alternative 2 management measures, in light of past, present, and reasonably foreseeable future projects, would be parkwide, long-term, moderate, and beneficial.

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

Segmentwide

Impacts of Actions to Protect and Enhance River Values

With the exception of the corridorwide actions common to Alternatives 2–6, there would be no additional corridorwide actions under Alternative 3 to protect and enhance river values.

Segment 1: Merced River Above Nevada Fall

In addition to the actions common to Alternatives 2–6, there would be additional actions under Alternative 3 to protect and enhance river values in Segment 1.

Impacts of Actions to Manage User Capacity and Facilities

Merced Lake High Sierra Camp. Under Alternative 3, Merced Lake High Sierra Camp would be converted to a temporary outfitter camp providing lodging for 15 people. This would reduce lodging in Segment 1 in Alternative 3 by 75%. The Merced Lake High Sierra Camp and all related infrastructure would be removed and the area would be designated as wilderness. A maximum limit of 2.5 pack strings per week would be established for re-supply of the temporary outfitter camp for each season. This would create an

experience where visitors are self-reliant and the landscape is natural and undeveloped. For visitors who desire this type of experience, changing the camp to a temporary outfitter camp would be beneficial; however, there are many visitors for whom the Merced Lake High Sierra Camp defines the quality of their recreational experience. Some have been visiting the High Sierra Camps for generations. Others support the potential Historic District designation of the High Sierra Camp, believing it is a cultural resource from the early days of the park. For these visitors, the conversion of the camp to a temporary outfitter camp would have an adverse impact on their experience, both in the wilderness and generally in Yosemite.

Camping. Under Alternative 3, all designated camping in Segment 1 would be converted to dispersed camping. With the conversion to dispersed camping, visitors have the opportunity to camp out of sight and sound from other campers. Dispersed camping and minimal facilities are in keeping with the undeveloped quality of the wilderness. Visitors seeking a true wilderness experience would benefit from these changes. Visitors who value less crowded areas, but still appreciate organized camping and minor facilities, may have a somewhat less positive visitor experience owing to the increase in dispersed camping and removal of some facilities.

Wilderness Capacity. Under Alternative 3, the capacity of the Little Yosemite Valley Wilderness Zone would be reduced from existing levels by 50%, from 150 to 75 overnight visitors per day. This would improve the solitary nature of wilderness camping due to the reduced number of people but because zone capacity and wilderness permit numbers are related, this would result in increased difficulty gaining access to the wilderness.

Overnight Use. Segment 1 capacity would be reduced from 380 people under Alternative 1 (No Action) to 260 under Alternative 3, a reduction of 32%. The number of day visitors would remain at 125 at one time. This decrease in zone capacity would reduce the number of encounters with other visitors and increase the experience of solitude in the wilderness. The importance of these two factors varies according to visitor. For some, the reduction in activity and visitation would be beneficial; others would be less concerned with these issues because they experience the wilderness as already uncrowded.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, moderate, adverse impacts on visitor experience and recreation within Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Alternative 3 would restore more than 300 acres of meadow and riparian habitat throughout the Merced River corridor. This is not as significant as the restoration of 342 acres under Alternative 2; however, visitors would still notice the improved condition of the natural environment, including the removal of structures and facilities within the floodplain, restoration of riverbanks and meadows, removal of bridges, and an overall improvement in the functioning of the river.

Under Alternative 3, restoration activities would be similar to, but not as extensive as those proposed under Alternative 2. As under Alternative 2, certain projects, such as restoration of areas from which Yosemite Lodge development was previously removed due to flood damage would proceed. Many familiar signs of human use and activity would be removed to accommodate floodplain and meadow restoration. Visitor impacts would be similar to Alternative 2; however, campsites would be removed from within 150 feet of the ordinary high-water mark instead of from the 100-year floodplain. This would result in the removal of fewer

campsites for restoration purposes. Extensive restoration would have a number of impacts on the visitor experience, and the impacts would differ depending on the perspective of visitors. As under Alternative 2, regardless of the visitor, the scale of restoration proposed under Alternative 3, in combination with the actions common to Alternatives 2–6, would result in a physically altered Yosemite Valley. There would be fewer roads, trails, buildings, and bridges, and noticeably more relatively undisturbed natural areas. Those visitors who value an ecosystem with less human-made features and disturbances would find their experience very positive. Those visitors who have grown accustomed to more development might miss activities in which they have participated in the past, such as stock use, staying at Yosemite Lodge, and camping adjacent to the Merced River. These visitors might also be negatively affected by the diminishments of the relative freedom provided under Alternative 1, in terms of river access and areas to recreate.

The interpretive and educational opportunities associated with this scale of restoration would explain these landscape-level changes to visitors. Education would benefit all visitors but would especially help those who do not understand why the appearance of the valley has changed and who may feel that certain aspects of the Yosemite they used to know and activities in which they had once participated have either disappeared or become less available.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternative 3 include rerouting trails at Ahwahnee Meadow, 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 from within 150 feet of the ordinary high-water mark, restoring 12 acres of floodplain and riparian habitat, 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.

These projects would have significant short-term impacts on the visitor experience by limiting visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. The larger the project in size and the longer its duration, the greater the impact on the visitor. In certain circumstances, restoration activities, although beneficial to the resource, may alter the visitor experience by limiting direct interaction with natural resources (e.g. touching versus seeing). Generally, increased visitor use results in greater restrictions in order to protect the resource and therefore would have a short-term, minor, adverse impact on visitor experience. Visitor experience benefits include opportunity for education and interpretation of restoration actions. In the long-term, the results of these actions would improve natural resources and hydrologic function and would have moderate, beneficial impacts on visitor experience.

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 Yosemite Village day-use parking; demolishing 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. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise, and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term

and beneficial.

Impacts of Actions to Manage User Capacity and Facilities

Visitor Use Levels. Under Alternative 3, visitors would experience the least crowding of any alternative, as peak day-use levels would decrease by 46%, from 11,727 to 6,352 while maximum overnight capacity would fall 23%, from 6,564 to 5,027. Based on monthly visitation statistics, this projected reduction would be more consistent with current visitation in early summer. As a result the visitors at this time would experience less crowding than is normal today in peak months, although nothing like the winter visitation experience, which has approximately 87% fewer visitors than the peak.

Day Use Management. The day-use management system would have the same impacts on visitors as that under Alternative 2 — a reduction in crowding, congestion and resource damage. However, demand is likely to significantly exceed supply during peak season, resulting in many dissatisfied individuals unable to access the park. Implementing a day-use parking permit system, among other transportation-related management measures, would benefit the experience of those visitors who are able to secure a permit because the valley would experience much less crowding and traffic congestion during peak season.

Camping and Lodging. Total camping would increase by 2% in Segment 2, from the 466 existing campsites to a total of 477 campsites. Lodging would decrease by 40%, from 1,034 rooms to 621 rooms. Most notable among the overnight accommodations removed would be Housekeeping Camp and 42% of the units at Yosemite Lodge. Demand for both camping and overnight lodging, which currently exceeds supply, would be exacerbated by this reduction, and visitors would find it more difficult to secure a place to stay within the park. However, under Alternative 3, the proportion of camping to lodging capacity would increase over that of Alternative 1; for every one lodging opportunity there would be 0.77 camping opportunities. In other words, camping would make up 40% of the total overnight accommodations in Yosemite Valley. This is a 9% increase over Alternative 1. So while the total overnight capacity would decrease under Alternative 3, a greater proportion of the total accommodations would be available to visitors across a broad income range.

Parking. Day parking would be reduced from 2,337 spaces to 1,621 spaces, a 31% decrease. The reduction in day visitors, through a day-use parking permit system, coupled with increased transportation options during peak months, would make finding parking much easier and reduce congestion and crowding significantly.

Recreation Facilities. Developed facilities removed under Alternative 3, in addition to those removed under the actions common to Alternatives 2–6, would include all facilities related to Housekeeping Camp, the Ahwahnee and Yosemite Lodge pools, and bike rental facilities at Curry Village and Yosemite Lodge, and the Curry Ice Rink. The Curry Village stables and the Yosemite Lodge Gift Shop would be reduced in size. Although not as extensive as the changes to commercial facilities and services proposed in Alternative 2, these reductions would help reduce the commercial nature of the valley and focus on activities and visitor services that are nature based, but would limit access to and availability of a number of types of visitor facilities and services.

The removal of the Yosemite Lodge swimming pool would likely affect a large number of visitors. Currently, both the Yosemite Lodge pool and the Curry Village pool are open to the public, while the use of the Ahwahnee pool is limited to hotel guests. The pools are popular in the summer months and provide opportunities for swimming under the supervision of qualified lifeguards during periods when river conditions are not suitable for swimming. Removal of the Yosemite Lodge pool would leave only the Curry Village pool to meet the public demand for pool swimming. The Yosemite Lodge pool is larger, with greater

capacity than the Curry Village pool, thus its removal is likely to result in crowding at the Curry Village pool.

All bicycle rental facilities would be removed under Alternative 3, although visitors could still bring their own bikes for riding. The bicycle rental facilities, which are located in Curry Village and Yosemite Lodge also rent bicycles with attached trailers for children, strollers, wheelchairs, electric mobility scooters, hand crank bicycles (recumbent bicycles), and tandem bicycles for use by riders with limited vision. While the actual number of visitors who utilize these services is small in comparison to total valley visitation, the impact of eliminating the service is likely to be significant to those who need accommodation. Eliminating this service would eliminate this activity for all visitors who did not bring their own bicycle or other form of mobility equipment to address special needs. Removing bicycle rentals would reduce the number of visitors able to experience riding throughout the valley and could increase vehicular congestion and/or shuttle bus crowding as visitors may choose to drive or take a shuttle bus to the various destinations within the valley that were easy to access by bicycle but too spread out for walking.

Boating. Boat rentals would be discontinued under Alternative 3 in favor of private boating, which would be limited to 50 trips per day (twice as many trips as under Alternative 2), with designated put-in and take-out locations. This would significantly reduce access to boating in Segment 2 and affect those visitors who come to Yosemite regularly to participate in water activities. The limit on the number of trips per day would further reduce the opportunity to participate. With limited put-in and take-out locations, which are also day-use areas, there could be some crowding.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat, would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access, would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.

Segment 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6 in Segments 3 and 4, additional actions would improve and protect the oak habitat in Segment 4 which would improve the natural resources in this area and have a local, long-term, negligible beneficial impact on the visitor experience.

Impacts of Actions to Manage User Capacity and Facilities

Boating. Alternative 3 would allow for private boating in Segment 3 and implement private boating restrictions in Segment 4, by limiting put-in and take-out locations as well as the number of boats per day. This would reduce the ability of visitors to casually boat on the Merced River in Segment 4 but would open new opportunities to boat on the challenging section in Segment 3.

Parking Capacity. The day parking capacity would be the same as under Alternative 1 (No Action), with 180 spaces in Segment 3 and 214 spaces in Segment 4. Parking is not likely an issue for visitors in these segments.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in local,

long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

No additional resource protection actions, aside from those described as common to Alternatives 2–6, would occur in Segments 5, 6, 7, and 8 under Alternative 3.

Impacts of Actions to Manage User Capacity and Facilities

This area includes wilderness (Segments 5 and 8), the Wawona Impoundment (Segment 6), and Wawona (Segment 7). Segments 5 and 8 are remote and undisturbed, and resource quality is high in these segments due to very low use levels. There are no developed activities or facilities in Segments 5 and 8. Segment 6, the Wawona Impoundment, is off limits to visitors owing to safety and water quality concerns.

In keeping with the restoration theme of Alternative 3, 27 campsites would be removed from within 150 feet of the river, reducing the number of campsites by 28% from Alternative 1. Visitors who value improved resource conditions would find removal of these campsites beneficial to their experience and in keeping with this restoration-intensive alternative. Removal of these campsites would have an adverse impact on the experience of those visitors for whom camping close to the South Fork Merced River is an important part of their experience of Yosemite.

Recreation Facilities. Under Alternative 3, visitors would experience a reduction in the number of facilities and services available to them, including golf, tennis, and riding. Most noticeably, the Wawona Golf Course and golf shop would be removed under Alternative 3 and the site restored. This would eliminate golfing in the South Fork Merced River corridor. This action would negatively affect visitors for whom golf is an important part of their experience. For those visitors who do not golf or feel golf is an inappropriate activity so close to the river, the removal of this facility and the restoration of the site would be a benefit.

Removal of the Wawona tennis courts would eliminate tennis as a recreational activity in the South Fork Merced River corridor. This might prove to be a disappointment to the hotel visitors who seek out tennis as part of their Yosemite experience. However, this likely would involve a small number of guests. For most guests, the removal of tennis would have no effect on their experience in Wawona, and in the long run the removal might improve their experience by affording them more nature-based, river-dependent activities.

Removal of the Wawona stables would completely eliminate this type of recreation activity from Segment 7. For visitors who participate in day rides, this action would negatively affect their experience. However, a limited number of visitors participate in this activity, so its removal would not affect most visitors in Wawona.

Boating. Private boating would be allowed in Segment 7, but regulations would limit put-in and take-out locations with no limits on the number of boats. Not limiting the number of boats would be beneficial to boaters because they would continue to have access to the same level of boating as they would under Alternative 1. Private boating would be allowed in the South Fork Merced River wilderness (Segments 5 and 8). Private boating in Segments 5 and 8 would provide a recreation opportunity and enhance the visitor experience for those visitors who participate in this activity.

Camping and Lodging. The number of overnight lodging units at the Wawona Hotel would remain the same as under Alternative 1. Demand for overnight accommodations would continue to exceed supply throughout the season. The removal of 27 sites from the Wawona Campground would result in a 28% reduction in the number of campsites. Demand frequently exceeds supply at this campground and removal of these sites, coupled with visitation levels that are unchanged from under Alternative 1, would exacerbate this problem.

Parking. Total day-use parking spaces in Wawona would remain at 290 spaces. This number is currently inadequate during peak times, and visitors would continue to experience crowding and congestion as they search for parking.

Visitor Use Levels. Unlike Yosemite Valley under Alternative 1, which would experience noticeably less visitor use under Alternative 3, this area would still be crowded during peak times, lessening the quality of the visitor experience. Peak day use levels (PAOT) would increase over that of Alternative 1, from 1,295 to 1,321, primarily due to increased transit use.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.

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

The focus of Alternative 3 is on dispersed visitor experiences and extensive riverbank restoration. After Alternative 2, Alternative 3 is the most restoration-intensive of Alternatives 2–6. Visitors would experience fewer roads, trails, buildings, and bridges, and noticeably more relatively undisturbed natural areas. In general, restoration actions improve the quality of natural resources and thus the overall visitor experience. However, under Alternative 3, the extent of the restoration actions, a total of 308 acres in addition to those restoration actions common to Alternatives 2–6, although highly beneficial to resource conditions and river function, would noticeably reduce access to and availability of recreation and visitor services, and the overall visitor experience. Actions under Alternative 3 generally eliminate recreational activities that are not directly resource-based, including conversion of Merced Lake High Sierra Camp to a temporary pack camp; a capacity reduction of 50% in the Little Yosemite Valley Wilderness Zone and associated reduction in number of wilderness permits issued; elimination of bicycle rentals, commercial rafting, stock use, golf, tennis, and swimming pools; elimination of most nonriver-related visitor services; a 35% reduction in lodging and 3% reduction in camping; and an overall reduction in people in the corridor at one time during peak days by 12%. Parking capacity would be reduced by 19% and, within East Yosemite Valley, private vehicle access would be managed by a day use permit parking system. These actions would improve the visitor experience once they were within the Merced River corridor owing to less crowding and congestion, and would also address the demand for more camping in the valley. However, a significant number of visitors would be unable to gain access to Segment 2A (East Valley) via private vehicle and the experiences it provides.

Due to the improved condition of natural resources and acreage of restored areas, elimination of a number of non-river-related activities, a reduced development footprint, and an increase in camping and limits on the number of visitors, this alternative would result in a corridorwide, long-term, minor to moderate, beneficial impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

These actions would improve the experience of visitors once they were within the Merced River corridor owing to much less crowding and congestion, but would result in many people being unable to gain access to Segment 2A (East Valley) via private vehicle and the experiences it provides. Overall, with implementation of mitigation measures MM-VEX-1 and MM-VEX-2, as appropriate (see Appendix C), these actions would result in a corridorwide, long-term, major, adverse impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

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

Cumulative impacts on visitor experience related to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential impacts of the actions under Alternative 3. Cumulatively, considerable projects would be the same as those identified for Alternative 2, and include only those that could affect visitor experience within the Merced River corridor or in the park vicinity.

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

The cumulative impacts of Alternative 3 management measures on visitor experience would generally be beneficial in Segments 1–8. Past and present visitor services improvements and upgrades would enhance visitors' ability to experience the river. Changes to visitor facilities due to their removal, relocation or retrofit would be designed to protect the river corridor while maintaining opportunities for visitors to experience characteristics of the river. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans. As a result, the cumulative impact of Alternative 3 management measures, in light of past, present, and reasonably foreseeable future projects, would be parkwide, long-term, minor to moderate, and beneficial.

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

Corridorwide

Impacts of Actions to Protect and Enhance River Values

With the exception of the corridorwide actions common to Alternatives 2–6, there would be no additional actions corridorwide actions under Alternative 4 to protect and enhance river values.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6, there are additional actions proposed under Alternative 4 to protect and enhance river values in Segment 1.

Impacts of Actions to Manage User Capacity and Facilities

Merced Lake High Sierra Camp. The removal of Merced Lake High Sierra Camp would eliminate overnight lodging in Segment 1. The camp and all related infrastructure would be removed and the camp would be designated as wilderness. This would create an experience where visitors are self-reliant and the

landscape is natural and undeveloped. For visitors who desire this type of experience, the removal of the camp would be beneficial; however, there are many visitors for whom the Merced Lake High Sierra Camp defines the quality of their recreational experience. Some have been visiting this High Sierra Camp for generations. Others support the potential Historic District designation of the High Sierra Camp, believing it is a cultural resource from the early days of the park. For these visitors, the closure of the Merced Lake High Sierra Camp would have an adverse impact on their experience, both in the wilderness and generally in Yosemite.

Camping. Under Alternative 4, designated camping would remain at Moraine Dome. Designated camping at Merced Lake Backpackers Camping Area would be expanded into the High Sierra Camp site, facilities would be removed, and a composting toilet would replace the flush toilets at the backpackers camping area. At Little Yosemite Valley, the designated camping area would remain. For those visitors seeking a pristine wilderness experience, the removal of the High Sierra Camp would be beneficial; however, the retention of designated camping may not be in keeping with the wilderness experience they are seeking. The retention of designated camping would benefit those visitors who seek the quiet and solitude of the wilderness but prefer designated camping and toilet facilities.

Wilderness Capacity. Segment 1 capacity would be reduced from 380 people under Alternative 1 (No Action) to 270 under Alternative 4, a reduction of 29%. The number of day visitors would remain at 125 at one time. This would improve the solitary nature of wilderness camping owing to the reduced number of people but because zone capacity and wilderness permit numbers are related, this would make it increasingly difficult for visitors to gain overnight access to the wilderness.

This decrease in overnight visitors would reduce the number of encounters with other visitors and increase the experience of solitude in the wilderness. The reduction in activity and visitation would be beneficial to some visitors while others would be less concerned with these issues because they experience the wilderness as already uncrowded.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, moderate, adverse impacts on visitor experience and recreation within Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, visitors would experience restoration of approximately 223 acres of meadow and riparian habitat in the Merced River corridor. Coupled with the restoration actions common to Alternatives 2–6, these improvements would result in noticeable improvement to the resources over that of Alternative 1. Many of the areas proposed for restoration under Alternatives 2 and 3 would be addressed but with somewhat less intensity. Under Alternative 4, Stoneman Bridge would not be removed, but its impact on the geologic and hydrologic processes of the Merced River would be mitigated. Some restoration of Ahwahnee, El Capitan, and Stoneman meadows would occur, but not to the levels proposed in Alternatives 2 and 3. As under Alternative 3, campsites and infrastructure would be removed from within 150 feet of the ordinary high-water mark and these areas restored, as would be the area from which Yosemite Lodge development was previously removed due to flood damage. The present-day Yosemite Lodge would remain under Alternative 4, as would a portion of the units at Housekeeping Camp.

Projects proposed in Segment 2 to protect and enhance river values involve rerouting and revegetating a

portion of the Valley Loop Trail. This would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternative 4 include removing fill and constructing a boardwalk over meadow and wet areas at Ahwahnee Meadow; 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 from within 150 feet of the ordinary high-water mark; restoring 12 acres of floodplain and riparian habitat; erecting fencing, signage, and boardwalks to redirect visitor traffic; and removing informal trails at El Capitan Meadow. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

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 4 include relocating unimproved Yosemite Village day-use parking, placing large wood and constructed logjams along the base of Stoneman Bridge, demolishing the Ahwahnee and Sugar Pine Bridges, and restoring these areas to natural conditions. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

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

Visitor Use Levels. Under Alternative 4, visitors would generally experience reduced crowding in Segment 2 because peak day use levels would decrease by 36%, from 11,727 to 7,554 people at one time. However, maximum overnight capacity would increase by 10%, from 6,564 to 7,224 people per night. Visitors would experience less crowding than under Alternative 1 owing to this reduction. Visitor use would be managed through an East Valley day-use parking permit system. Once the Yosemite Valley parking capacity was reached, visitors would be directed to remote parking in the gateway communities and instructed to take public transportation, which would be expanded under Alternative 4 to meet the increase in visitors. As discussed in Alternatives 2 and 3, reducing the number of visitors would improve the visitor experience for those who are able to access the park. For those who cannot gain access, the quality of their experience would be diminished.

Camping and Lodging. Camping opportunities in Yosemite Valley would increase by 50%, from 466 sites to 701 sites. This is a significant increase in camping which would help to meet the current demand for camping in the valley. An increase in camping would provide a relatively inexpensive opportunity for many more visitors to stay overnight in the valley. Lodging would decrease by 28%, from 1,137 units to 823 units. Overall, overnight accommodations would increase by 7% under Alternative 4. It is likely that demand for overnight accommodations of all types would continue to exceed supply. However, under Alternative 4, the

proportion of camping to lodging capacity would also increase over that of Alternative 1; for every one lodging opportunity there would be 0.85 camping opportunities. In other words, camping would make up 46% of the total overnight accommodations in Yosemite Valley. This is a 15% increase over Alternative 1. So in addition to the total increase in overnight capacity within the valley under Alternative 4, a greater proportion of the total accommodations would also be available to visitors across a broad income range.

Additional facilities removed under Alternative 4 would include the Curry Village stables, the Nature Shop, and the Housekeeping Camp grocery store. Facilities reduced in size include the Yosemite Lodge Gift Shop. Picnic areas would be added in various locations throughout the valley. Although not as extensive as the changes to commercial facilities and services proposed under Alternatives 2 and 3, these reductions would help reduce the commercial nature of the valley and focus on activities and visitor services that are nature based, but would limit access to and availability of a number of types of visitor facilities and services.

Boating. Both private boating and commercial rafting would be allowed in Segment 2. Up to 100 private trips per day would be allowed by permit, and put-in and take-out locations would be limited. Commercial rafting would be available through regulated commercial operations and would be allowed with a staging area at Housekeeping Camp. Commercial trips would be limited to 75 rafts at one time or approximately 200 trips per day. The retention of commercial rafting with some restrictions would add a type of activity that is not proposed under Alternatives 2 and 3. Restricting numbers of boats and put-in and take-out locations reduces trampling and erosion and helps protect natural resources.

Parking. Day parking would be reduced by 12%, from 2,337 to 2,045 visitor parking spaces available in the valley (a reduction of 292 spaces). Coupled with the day-use management system (which would limit the number of day visitors), expanded bus service, roadway alignment and intersection performance, and new remote parking in El Portal, Alternative 4 would improve the visitor experience by reducing congestion and the time required to look for parking. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. This would also improve pedestrian safety and the overall visitor experience around Yosemite Lodge.

Recreation Facilities. Developed facilities removed under Alternative 4, in addition to those removed under the actions common to Alternatives 2–6, would include the Ahwahnee and Yosemite Lodge pools, bike rental facilities at Curry Village and Yosemite Lodge, and the Curry Ice Rink.

The removal of the Yosemite Lodge swimming pool would likely affect a large number of visitors. Currently, both the Yosemite Lodge pool and the Curry Village pool are open to the public, while the use of the Ahwahnee pool is limited to hotel guests. The pools are popular in the summer months and provide opportunities for swimming under the supervision of qualified lifeguards during periods when river conditions are not suitable for swimming. Removal of the Yosemite Lodge pool would leave only the Curry Village pool to meet the public demand for pool swimming. The Yosemite Lodge pool is larger, with greater capacity than the Curry Village pool; thus its removal is likely to result in crowding at the Curry Village pool.

All bicycle rental facilities would be removed under Alternatives 4, although visitors could still bring their own bikes for riding. The bicycle rental facilities, which are located in Curry Village and Yosemite Lodge also rent bicycles with attached trailers for children, strollers, wheelchairs, electric mobility scooters, hand crank bicycles (recumbent bicycles), and tandem bicycles for use by riders with limited vision. While the actual number of visitors who utilize these services is small in comparison to total valley visitation, the impact of eliminating the service is likely to be significant to those who need accommodation. Eliminating

this service would eliminate this activity for all visitors who did not bring their own bicycle or other form of mobility equipment to address special needs. Removing bicycle rentals would reduce the number of visitors able to experience riding throughout the valley and could increase vehicular congestion and/or shuttle bus crowding as visitors may choose to drive or take a shuttle bus to the various destinations within the valley that were easy to access by bicycle but too spread out for walking.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.

Segment 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6 in Segments 3 and 4, additional actions would improve and protect the oak habitat in Segment 3 which would improve the natural resources in this area and have a local, long-term, negligible beneficial impact on the visitor experience.

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

Boating. Alternative 4 would implement private boating restrictions in Segments 3 and 4. Segment 3 would allow a capacity of 10 people per day. This would increase the ability for visitors to boat on challenging sections of the Merced River as this segment of river is currently closed to boating. Segment 4 would allow 10 boats per day. This would reduce the ability of visitors to casually boat on the river in Segment 4 as this use is currently unlimited.

Parking. The day use parking capacity would be 180 spaces in Segment 3 and 414 spaces in Segment 4. Parking is not likely an issue for visitors in these segments. Under Alternative 4, the number of visitors passing through Segments 3 and 4 would decrease from under Alternative 1; however, those recreating in Segment 3 and 4 are expected to remain constant with no change from Alternative 1.

Alternative 4 would add a 200-vehicle parking lot in El Portal, which would provide remote parking for valley visitors. This would be a valuable addition for those visitors who prefer to avoid the lines and permits required to access the valley, but it would not affect those who choose to recreate in Segments 3 and 4.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

In addition to the resource actions common to Alternatives 2–6, 27 sites would be removed from the

Wawona Campground to protect cultural resources and the 100-foot riparian buffer. Visitors who value improved resource conditions would find removal of these campsites beneficial to their experience and in keeping with this restoration-intensive alternative. Removal of these campsites would have a negative impact on the experience of those visitors for whom camping close to the South Fork Merced River is an important part of their experience of Yosemite.

Impacts of Actions to Manage User Capacity and Facilities

Recreation Facilities. The Wawona Golf Course, golf shop, and tennis courts would be retained under Alternative 4. This would be a beneficial decision for the relatively small number of golfers and tennis players, but an adverse impact on those who believe that golf is an inappropriate activity so close to the South Fork Merced River. For most guests, the availability of tennis and golf does not have an effect on their visitor experience. The retention of these facilities is not in keeping with a visitor experience characterized by nature-based, river-dependent activities.

Removal of the Wawona stables would completely eliminate this type of recreation activity from Segment 7. For visitors who participate in day rides, this action would adversely affect their visitor experience. However, a limited number of visitors participate in this activity, so its removal would not affect most visitors to Wawona.

Boating. Private boating would be allowed in Segment 7, but regulations would limit put-in and take-out sites and the number of boats to five boats per day. This would adversely affect those visitors who are accustomed to unrestricted boating access. Private boating would be allowed in the South Fork Merced River wilderness (Segments 5 and 8) for 5 boats per day. Private boating in Segments 5 and 8 would provide a recreation opportunity and enhance the visitor experience for those visitors who participate in this activity.

Overnight Accommodations. The number of overnight lodging units at the Wawona Hotel would remain the same as under Alternative 1. Demand for overnight accommodations would continue to exceed supply throughout the season. The removal of 27 sites from the Wawona Campground would result in a 28% reduction in the number of campsites. Demand frequently exceeds supply at this campground and removal of these sites, coupled with visitation levels that are equal to the current levels, would exacerbate this problem.

Parking. Total day-use parking spaces in Wawona would remain at 290 spaces. This number is currently inadequate during peak times, and visitors would continue to experience crowding and congestion as they search for parking.

Visitor Use Levels. The total number of visitors to Segment 7 under Alternative 4 is expected to be the same as under Alternative 1. Crowding and congestion occur in Wawona and along the river during peak times, and this would continue. Peak day use levels (PAOT) would increase over that of Alternative 1, from 1,295 to 1,399, primarily due to increased transit use.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.

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

The focus of Alternative 4 is on resource-based visitor experiences and targeted riverbank restoration. Alternative 4 strikes a balance between restoration and visitor use. Under Alternative 4, the extent of restoration actions would be 225 acres, in addition to those restoration actions common to Alternatives 2–6. Restoration activities would be noticeable to visitors but less extensive than the restoration proposed under Alternatives 2 and 3. In general, restoration actions improve the quality of natural resources and hydrologic function of the river and thus the overall quality of the visitor experience.

Actions under Alternative 4 generally reduce recreational activities that are not directly resource based. These actions would include removal of Merced Lake High Sierra Camp; a capacity reduction of 33% in the Little Yosemite Valley Wilderness Zone and associated reduction in number of wilderness permits issued; elimination of bicycle rentals, stock use, and swimming pools; elimination of most nonriver-related visitor services; a 20% reduction in lodging and a 37% increase in camping; and an overall reduction in peak day use levels (PAOT) within the corridor by 5%. Commercial rafting in the valley would be allowed under Alternative 4, and a remote parking lot would be added in El Portal to reduce congestion in the valley. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. Visitor use in Yosemite Valley would be reduced by 17% and access controlled by an East Valley day use parking permit system. Once maximum parking capacity in the valley was reached, access would be limited to overflow parking. These actions would improve the experience of visitors once they were within the Merced River corridor owing to less crowding and congestion, and would also address the demand for more camping in the valley. However, some visitors would be unable to gain access to the East Valley via private vehicle and the experiences it provides.

Due to the improved condition of natural resources and acreage of restored areas, elimination of a number of non-river-related based activities, a reduced development footprint, an increase in camping and limits on the number of visitors, and with implementation of mitigation measures MM-VEX-1 and MM-VEX-2, as appropriate (see Appendix C), this alternative would result in a corridorwide, long-term, minor to moderate, beneficial impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

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

Cumulative impacts on visitor experience related to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential impacts of the actions proposed under Alternative 4. Cumulatively considerable projects would be the same as those identified for Alternative 2, and include only those that could affect visitor experience within the Merced River corridor or in the park vicinity.

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

The cumulative impacts of Alternative 4 management measures on visitor experience would generally be beneficial in Segments 1–8. Past and present visitor services improvements and upgrades would enhance visitors' ability to experience the river. Changes to visitor facilities due to their removal, relocation or retrofit

would be designed to protect the river corridor while maintaining opportunities for visitors to experience characteristics of the river. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans. As a result, the cumulative impact of Alternative 4 management measures, in light of past, present, and reasonably foreseeable future projects, would be parkwide, long-term, minor to moderate, and beneficial.

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

Corridorwide

Impacts of Actions to Protect and Enhance River Values

With the exception of the corridorwide actions common to Alternatives 2–6, there would be no additional actions corridorwide actions under Alternative 5 to protect and enhance river values.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6, there would be additional actions under Alternative 5 to protect and enhance river values in Segment 1.

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

Merced Lake High Sierra Camp. Visitors to Segment 1 would continue to have a wilderness-oriented experience, characterized by self-reliance and opportunities for solitude. The Merced Lake High Sierra Camp would be reduced by 30%, from 60 beds (removing 11 of the 22 historic canvas tents) to 42. This would make the camp equal in size to other High Sierra Camps. Tent pads would be retained for those 11 historic canvas tents that are removed and the "u" shape configuration of the camp would also be retained. The level of support needed to supply the Merced Lake High Sierra Camp would be limited to 7.5 average strings per week (or an average of 30 strings per month) would be established for resupply trips to this camp. Composting toilets would be installed in this location. This size reduction would be beneficial to the experience of some visitors as it would retain the historical use and provide a different type of accommodation for visitors. The reduction in the size of the camp and replacement of the flush toilets with a composting toilet, although not as desirable as eliminating the entire camp to those who oppose it, would reduce the impact of this developed facility on the wilderness landscape.

Camping. Little Yosemite Valley Backpackers, Moraine Dome, and the Merced Lake Backpackers camping areas would remain as designated camping areas under Alternative 5, with maximum overnight visitation set by zone capacity, or 150 for the Little Yosemite Valley Zone and 50 for the Merced Lake Zone. The existing wastewater system would be replaced with composting toilets in the Merced Lake Backpackers Camping Area. Little Yosemite Backpackers Camping Area would retain the existing facilities, including restrooms. Moraine Dome would continue to have no facilities. Backpackers could also continue to camp away from the Merced River in dispersed sites. Some visitors would experience crowding and an unacceptable number of visitor encounters, which would impinge on the solitude they desire in the wilderness. Others would perceive the number of overnight visitors in Segment 1 as low and would benefit from the opportunity to experience camping in the relatively uncrowded wilderness. Retention of designated campsites would be

beneficial to those visitors who value minimal facilities as part of their wilderness experience. Some visitors, desiring a more primitive wilderness experience, would experience the designated camping areas and facilities as contrary to the wilderness experience.

Boating. Allowed as an activity in Segment 1, under Alternative 5, private boating would be limited to 20 people per day, which is consistent with other backcountry trailhead quotas and zone capacities for this Segment (see Appendix R). This would improve the visitor experience for those who want to boat in Segment 1 and may reduce the number of visitors along some trail segments.

Wilderness Capacity. Due to the reduction in the capacity of the Merced Lake High Sierra Camp, the capacity of Segment 1 would be reduced from 380 people under Alternative 1 (No Action) to 362 under Alternative 5, a reduction of 5%. The number of day visitors would remain at 125 at one time. As is currently the case, demand for overnight use permits in the wilderness would continue to exceed supply, leaving some visitors unable to secure a permit and thus unable to have the recreational experience they planned at the time they desired. The retention of the existing wilderness zone capacities would likely have an adverse impact on those individuals who feel the wilderness should be less crowded, with fewer visitor encounters.

The slight decrease in overnight visitors would reduce the number of encounters with other visitors and increase the experience of solitude in the wilderness. The importance of these two factors varies according to visitor. Some would benefit from the reduction in activity and visitation, while others would be less concerned with these issues, as they experience the wilderness as already uncrowded.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, minor, adverse impacts on visitor experience and recreation within Segment 1.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, visitors would experience restoration of approximately 197 acres of meadow and riparian habitat in the Merced River corridor. Coupled with the restoration actions common to Alternatives 2–6, these improvements would result in noticeable improvements to the resources over that of Alternative 1. Education and interpretation related to the widespread restoration and enhancement activities in Segment 2 would help visitors understand the changes to the natural landscape, the beneficial impacts of restoration to the natural environment and the function of the river, and the techniques used to achieve these changes.

Projects proposed in Segment 2 to protect and enhance river values involve restoring areas from which Yosemite Lodge development was previously removed due to flood damage and rerouting, revegetating, and constructing a boardwalk along a portion of the Valley Loop Trail. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities, and the end result of restored natural areas, would be beneficial to the visitor experience. The impacts of these actions would be local, minor, short-term and adverse. Once these projects are completed, the impacts would be long-term and beneficial.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternatives 5 include removing fill and constructing a boardwalk over

meadow and wet areas at Ahwahnee Meadow; installing culverts beneath Northside Drive; reconfiguring the Curry Orchard parking lot; removing campsites from within 100 feet of the ordinary high-water mark and restoring 6.5 acres of floodplain and riparian habitat; erecting fencing, signage, and boardwalks to redirect visitor traffic; and removing informal trails at El Capitan Meadow. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

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 Yosemite Village day-use parking, placing large wood and constructed logjams along the base of Stoneman Bridge, and improving trail connectivity and routing in the vicinity of the Ahwahnee Bridge. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Under Alternative 5, Sugar Pine Bridge is retained. To address the localized impacts that have been attributed to Sugar Pine Bridge, the NPS will initiate a study to assess the merits of various long-term bridge management strategies. The study will first assess the nature and extent of impacts associated with the bridge and then identify and test potential mitigation measures. If mitigation measures fail to meet defined criteria for success, consideration of bridge removal would involve a public review process and additional environmental compliance. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

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

Under Alternative 5, actions to manage visitor use and facilities include a traffic management system; additional parking, camping, and overnight accommodations; and a range of activities designed to complement and respect natural resources. Peak day-use levels under Alternative 5 would be 9,479 PAOT, a decrease of 19% from existing conditions. Over the long-term, total daily visitation to the valley during peak visitation days would be capped at 4% below Alternative 1 totals, resulting in a local, minor, adverse impact during peak visitation days as some would-be visitors would not be able to experience Segment 2. However, under Alternative 5, overnight capacity would increase to 7,831 people per night, constituting a 19% increase over Alternative 1 conditions. This increase represents a long-term, segmentwide, major, beneficial impact on overnight visitors.

Parking. The El Capitan Cross-Over Traffic Diversion is the primary mechanism for managing capacity and vehicles in East Yosemite Valley. Upon full implementation of this alternative, this traffic diversion would limit traffic within the Valley to 5,300 vehicles at one time. In the future, if traffic diversions are no longer adequate or appropriate to manage traffic in East Yosemite Valley, the park may consider an East Valley day-use parking permit system to further manage private automobile use within the East Valley and reduce crowding and congestion in Segment 2 on peak use days. Both regional transit and valley shuttle options would be expanded, and visitors would be encouraged to park outside of the park and take public transit or shuttle service into the valley. For some day visitors, taking a shuttle into the park would improve their experience because they would not be subject to parking in remote lots or parking reservation requirements. The Yosemite Lodge day-use parking area would add 300 day-use parking spaces,

accommodate 22 tour buses at one time, and include 6 loading and unloading parking spaces proposed south of the Yosemite Lodge Registration Building.

Day-use parking would increase by 8%, from 2,337 to 2,520 visitor parking spaces available in the valley. This increase would reduce the number of vehicles circulating through the valley looking for parking. Transportation improvements, including a round-about at the intersection of Camp 6/Yosemite Valley Day-use Parking Area and Northside Drive and improved roadway alignment and intersection performance would result in less congestion and enhance pedestrian safety. A tiered NEPA/NHPA compliance effort would evaluate a range of alternatives to address pedestrian and vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area.

Although the total number of daily visitors to the park is only slightly reduced from existing numbers, the implementation of the East Valley traffic management program additional parking spaces and transportation system improvements would greatly improve the visitor experience. These improvements would lessen traffic jams; ensure that visitors entering the park have a place to park, thus eliminating unnecessary circling; allow visitors to participate in scenic driving; and get to their ultimate destination sooner.

Camping and Lodging. The number of campsites would increase from 466 to 640 sites, a 37% increase in the number of campsites in Segment 2. In addition to traditional campsites, new walk-in, RV, and groups sites would broaden camping opportunities for visitors. The overall increase would help meet the current unmet demand for campsites. The amount of overnight lodging would increase under Alternative 5, from 1,034 units to 1,082 units. This increase would not meet the demand for overnight lodging during peak months, and some visitors would not be able to reserve lodging at the times they desire.

Under Alternative 5, the proportion of camping to lodging capacity would also increase over that of Alternative 1; for every one lodging opportunity there would be 0.59 camping opportunities. In other words, camping would make up 37% of the total overnight accommodations in Yosemite Valley. This is a 6% increase in the proportion of camping over Alternative 1. So with the increase in valley overnight capacity under Alternative 5, a greater proportion of the total accommodations would also be available to visitors across a broad income range.

Commercial. Unnecessary or redundant visitor-serving facilities would be reduced in Segment 2 under Alternative 5. Grocery stores and dining facilities would remain at Curry Village, Yosemite Village, Yosemite Lodge, and The Ahwahnee. The grocery store at Housekeeping Camp would remain. These actions, coupled with the removal of facilities common to Alternatives 2–6, would result in a visitor experience that is less focused on commercial activities. As these changes would eliminate facilities within the park that are unnecessary or redundant, the absence of these facilities would not reduce the quality of the visitor experience within the park generally and the Merced River specifically.

Recreational Activities. A wide variety of nature-based recreational activities, such as hiking, biking, visiting key destinations, contemplation, rafting, and swimming, would continue as an integral part of the visitor experience. These activities are the reason most visitors come to Yosemite and would continue as popular activities. Bike rentals would be relocated outside of river corridor. In addition, the Ahwahnee and Yosemite Lodge pools would be retained. The Curry Ice Rink would be removed from its current location and relocated to its historical location within Curry Village outside of the river corridor.

Boating. In Segment 2A (East Valley) from Stoneman Bridge to Sentinel Beach commercial raft rentals would be limited to 100 boats per day (50 boats at one time). These would be available through a regulated commercial operation. Commercial raft rentals would be reduced by half of current use levels, have no permanent infrastructure in the river corridor, provide safety talks and a put-in near the Lower River Campground redevelopment, and provide a take-out at Sentinel Beach Picnic Area (same as current). Private boats would also be limited to 150 boats per day between Stoneman Bridge and Sentinel Beach. In addition, 45 people per day would be permitted to put-in at Clark's Bridge and float through to Sentinel Beach. In Segment 2B (West Valley) 45 people per day would be allowed to boat between Sentinel Beach and Pohono Bridge (see Appendix R). Boating restrictions would substantially limit visitors' ability to experience the river via commercial raft rental. However, private boats would still be allowed at present levels and for a longer stretch of the river than previously allowed.

Because the total number of visitors would not noticeably change under Alternative 5, visitors engaged in these activities would likely experience crowded conditions during certain times of day, especially during the peak season.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access once inside East Yosemite Valley would also have minor beneficial impacts on park and river-related visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, negligible, beneficial impacts on park and river-related visitor experience and recreation.

Segment 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6 in Segments 3 and 4, additional actions would improve and protect the oak habitat in Segment 3 which would improve the natural resources in this area and have a local, long-term, negligible beneficial impact on the visitor experience.

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

Boating. Alternative 5 would implement private boating restrictions in Segments 3 and 4. Segment 3 would allow a capacity of 10 people per day. This would increase the ability for visitors to boat on challenging sections of the Merced River as this segment of river is currently closed to boating. Segment 4 would allow 50 people per day. This would reduce the ability of visitors to casually boat on the river in Segment 4 as this use is currently unlimited.

Parking. The day-use parking capacity would be 180 spaces in Segment 3 and 514 spaces in Segment 4. Parking is not likely an issue for visitors in these segments.

Alternative 5 would add a 300-vehicle parking lot in El Portal, which would provide remote parking for valley visitors and would be serviced by a seasonally-available shuttle to Yosemite Valley. This would be a valuable addition for those visitors who prefer to avoid the lines and permits required to access the valley but would not affect those who choose to recreate in Segments 3 and 4.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in local,

long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

In addition to the resource actions common to Alternatives 2–6, 27 sites would be removed from the Wawona Campground to protect cultural resources and the 100-foot riparian buffer. Visitors who value improved resource conditions would find removal of these campsites beneficial to their experience and in keeping with this restoration-intensive alternative. Removal of these campsites would have a negative impact on the experience of those visitors for whom camping close to the South Fork Merced River is an important part of their experience of Yosemite.

Impacts of Actions to Manage User Capacity and Facilities

Recreation Facilities. The Wawona Golf Course, golf shop, and tennis courts would be retained under Alternative 5. This would be a beneficial decision for the relatively small number of golfers and tennis players, but an adverse impact on those who believe that golf is an inappropriate activity so close to the river. For most guests, tennis and golf do not have an effect on their visitor experience. The retention of these facilities is not in keeping with a visitor experience characterized by nature-based, river-dependent activities.

Boating. Private boating would be allowed in Segment 7 but regulations would limit put-in and take-out sites, and the number of people allowed to boat per day would be 50. This would negatively affect those visitors who are accustomed to unrestricted access in this segment. In Segments 5 and 8, 25 private boaters would be allowed on each segment per day.

Overnight Accommodations. The number of overnight lodging units at the Wawona Hotel would remain the same as under Alternative 1. Demand for overnight accommodations would continue to exceed supply throughout the season. The removal of 13 sites from the Wawona Campground would result in a 14% reduction in the number of campsites. Demand frequently exceeds supply at this campground and removal of these sites, coupled with visitation levels that are equal to the current levels, would exacerbate this problem.

Parking. Total day-use parking spaces in Wawona would remain at 290 spaces. This number is currently inadequate during peak times, and visitors would continue to experience crowding and congestion as they search for parking.

Visitor Use Levels. Crowding and congestion occur in Wawona and along the South Fork Merced River during peak times and this would continue. Peak day use levels (PAOT) would increase over that of Alternative 1, from 1,295 to 1,606, primarily due to increased transit use.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.

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

The focus of Alternative 5 is on enhanced visitor experiences and essential riverbank restoration. Alternative 5 strikes a balance between restoration and visitor use and would provide a number of methods to manage crowding and congestion and improve the visitor experience. Restoration activities would be noticeable to visitors but less intense than the restoration proposed under Alternatives 2 and 3. In general, restoration actions improve the quality of natural resources and thus the overall visitor experience. Under Alternative 5, the extent of the restoration actions would be 189 acres, in addition to those restoration actions common to Alternatives 2–6. These actions are highly beneficial to resource conditions and river function and somewhat limit access to and availability of recreation and visitor services, and the overall visitor experience. Actions under Alternative 5 reduce recreational activities that are not directly resource based. These actions would reduce Merced Lake High Sierra Camp by 30%, maintain the current capacity of the Little Yosemite Valley wilderness zone and related wilderness permit numbers, eliminate stock use and tennis, reduce commercial rafting, eliminate most nonriver-related visitor services, increase lodging by 5% and camping by 37%, and reduce peak day use levels (PAOT) within the corridor by 4%. A traffic circle would be constructed in the valley, and a remote parking lot would be added in El Portal to reduce park traffic congestion. Parking capacity would be increased by about 3%. These actions would improve the experience of visitors once they were within the Merced River corridor due to less crowding and congestion, and would also address the demand for more camping in the valley. Alternative 5 would allow access to slightly fewer visitors compared with current conditions. However, with congestion and crowding controls, most visitors would still be able to gain access to the East Valley via private vehicle and the experiences it provides. Overall, with implementation of mitigation measures MM-VEX-1 and MM-VEX-2, as appropriate (see Appendix C), these actions would result in a corridorwide, long-term, minor, beneficial impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

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

Cumulative impacts on visitor experience related to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions in Alternative 5. Cumulatively considerable projects would be the same as those identified for Alternative 2, and include only those that could affect visitor experience within the Merced River corridor or in the park vicinity.

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

The cumulative impacts of Alternative 5 management measures on visitor experience would generally be beneficial in Segments 1–8. Past and present visitor services improvements and upgrades would enhance visitors' ability to experience the river. Changes to visitor-serving accommodations, transportation, parking, and other facilities would be designed to protect the river corridor, while maintaining many of the recreational opportunities that directly facilitate visitors' ability to experience the park and the Merced River. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans. As a result, the cumulative impact of Alternative 5 management measures, in light of past, present, and reasonably foreseeable future projects, would be parkwide, long-term, minor to

moderate, and beneficial.

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

Corridorwide

Impacts of Actions to Protect and Enhance River Values

With the exception of the corridorwide actions common to Alternatives 2–6, there would be no additional actions corridorwide actions under Alternative 6 to protect and enhance river values.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

With the exception of the actions common to Alternatives 2–6, there would be no additional actions under Alternative 6 to protect and enhance river values in Segment 1.

Impacts of Actions to Manage Use and Facilities

Under Alternative 6, actions to manage visitor use and facilities are similar to Alternative 1 (No Action) and include:

- Retain Merced Lake High Sierra Camp with 60 beds;
- Retain Merced Lake Backpackers Camping Area for designated camping and replace flush toilets with composting toilets;
- Retain designated camping and infrastructure at Little Yosemite Valley Backpackers Camping Area;
- Retain designated camping at Moraine Dome;
- Little Yosemite Valley wilderness quota remains at 150 overnight visitors.

Merced Lake High Sierra Camp. Visitors to Segment 1 would continue to have a wilderness-oriented experience, characterized by self-reliance and opportunities for solitude. The Merced Lake High Sierra Camp would remain at its present size (60 beds), benefitting visitors who value this experience. Those visitors who believe the High Sierra Camp site should be returned to wilderness, with little evidence of human-made facilities, would continue to be dissatisfied with the presence of the High Sierra Camp. The removal of the flush toilets and replacement with composting toilets would reduce the impact of this developed facility on the wilderness landscape. In addition, a limit of 7.5 pack strings-per-week (for an average of 30 strings-per-month) for resupply would be established for each season.

Camping and Lodging. Little Yosemite Valley Backpackers Camping Area would be retained. Designated camping would remain at Merced Lake Backpackers Camping Area and composting toilets would be installed. Moraine Dome Camping Area would retain its designated sites and would remain without facilities. Backpackers could also continue to camp away from the Merced River in dispersed sites throughout Segment 1. Some visitors would experience crowding and an unacceptable number of visitor encounters, which would impinge on the solitude they desire in the wilderness. Others would perceive the number of overnight visitors in Segment 1 as low. Retention of designated campsites would be beneficial to those visitors who appreciate minimal facilities as part of their wilderness experience. Some visitors, desiring a more primitive wilderness experience, would experience the designated camping areas and

facilities as contrary to the wilderness experience.

Wilderness Capacity. Wilderness Zone capacities in Segment 1 would remain at 380 people (as under Alternative 1 (No Action)). The number of day visitors would remain at 125 at one time. As is currently the case, demand for overnight use permits in the wilderness would continue to exceed supply, leaving some visitors unable to secure a permit and thus unable to have the recreational experience they planned at the time they desired. However, Alternative 6, like Alternative 1, would provide for the greatest number of wilderness permits and therefore provide wilderness access to the greatest number of visitors. Maintaining the existing wilderness capacity would likely have an adverse effect on those individuals who feel the wilderness should be much less crowded, with fewer visitor encounters. The number of visitor encounters in the wilderness would remain the highest of any action alternative and reduce opportunities for solitude in the wilderness. Crowding in the wilderness would be similar to present day.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segment 1.

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 and would likely close these areas to visitors during this time. These actions would have a short-term, local, minor adverse impact on the visitor experience due to construction impacts including noise, temporary resource disturbance.

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 from within 100 feet of the ordinary high-water mark 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. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term and beneficial.

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 6 include: relocating unimproved Yosemite Village day-use parking and placing large wood and constructed logjams along the bases of Stoneman, Sugar Pine, and Ahwahnee Bridges. These actions would likely limit visitor access while these areas are being restored. Construction activities resulting in truck congestion, noise and dust would negatively impact the visitor experience. Educating visitors about ongoing restoration activities would be beneficial to the visitor experience. The impacts of these actions are local, minor, short-term and adverse. Once these projects are completed, the resulting improvements to natural resources would be long-term

and beneficial.

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

Day use levels and maximum overnight capacities in Segment 2 under Alternative 6 would be the highest of any alternative. Under this alternative, peak day use (PAOT) would decrease by 19%, from 11,727 to 9,449; while maximum overnight capacity would increase by 37%, from 6,564 to 9,006 people per night. To help manage this increase in visitation and ease crowding and congestion, a range of transportation management measures, including a traffic diversion system at El Capitan Cross-over, would be implemented to ease crowding and congestion in Segment 2 on peak use days.

Transportation. Both regional transit and valley shuttle options would be expanded and visitors would be encouraged to park outside of the park and take public transit into the valley. Vehicles driving into the valley could be diverted at the El Capitan Cross-over during peak season days to ensure traffic entering the East Valley does not exceed capacity. Under this alternative, the park would also consider implementing a day-use parking reservation system if the traffic diversion at El Capitan Cross-over is no longer sufficient or reasonable to manage the level of use experienced in East Yosemite Valley. In Segment 2, there would be a total of 2,598 day-use parking spaces, an 11% increase over the spaces currently available. Within the valley, roundabouts would be added to control traffic flow and a pedestrian underpass would be constructed at Yosemite Village Day-use Parking Area to improve traffic flow and visitor safety. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. These improvements would reduce traffic jams; assure that visitors have a place to park, thus eliminating unnecessary circling; allow visitors to participate in scenic driving free of congestion; and get to their ultimate destination sooner. For some day visitors, taking a shuttle into the park would improve their experience because they would not be subject to parking reservation requirements.

Camping and Lodging. The number of campsites would increase from 466 to 739 sites, a 59% increase in the number of campsites and the most campsites of any alternative. In addition to traditional campsites, new walk-in, RV, and groups sites would broaden camping opportunities for visitors. The overall increase would help meet the current unmet demand for campsites. The amount of overnight lodging in Segment 2 under Alternative 6 would increase by 20% over Alternative 1, from 1,034 units to 1,248 units. This increase would not meet the demand for overnight lodging during peak months, and some visitors would not be able to reserve lodging at the times they desire. However, under Alternative 6, the proportion of camping to lodging capacity would also increase over that of Alternative 1; for every one lodging opportunity there would be 0.59 camping opportunities. In other words, camping would make up 37% of the total overnight accommodations in Yosemite Valley. This is a 6% increase over Alternative 1. So with the increase in valley overnight capacity under Alternative 6, a greater proportion of the total accommodations would also be available to visitors across a broad income range.

Commercial. Visitor-serving facilities would be reduced in Segment 2 under Alternative 6 and would be focused on serving immediate visitor needs for food and beverages. Grocery stores and dining facilities would remain at Curry Village, Yosemite Village, Yosemite Lodge, The Ahwahnee, and Housekeeping Camp. Some retail facilities would also be removed. These actions, coupled with the removal of facilities common to Alternatives 2–6, would result in a visitor experience that is less focused on commercial activities. While these changes would eliminate visitor serving facilities within the park, the absence of these facilities would not directly affect visitors' ability, nor diminish their opportunity to experience the river.

Recreation Activities. A wide variety of nature-based recreational activities, such as hiking, biking, visiting key destinations, contemplation, rafting, and swimming, would continue as an integral part of the visitor experience. Commercial rafting would be available through regulated commercial operations. These activities are the reason most visitors come to Yosemite and would continue as popular activities. Bike rentals would be relocated outside of the river corridor. In addition, the Ahwahnee and Yosemite Lodge pools would be retained. The Curry Ice Rink would be removed from its current location and re-located to its historical location within Curry Village outside of the river corridor.

Segment 2 Impact Summary: Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.

Segment 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

In addition to the actions common to Alternatives 2–6 in Segments 3 and 4, additional actions would improve and protect the oak habitat in Segment 3.

Impacts of Actions to Manage User Capacity and Facilities

Boating. Alternative 6 would implement private boating restrictions in Segment 3, allowing for a capacity of 10 people per day. This would increase the ability for visitors to boat on challenging sections of the Merced River as this segment of river is currently closed to boating. In Segment 4 boating put-in and take-out locations would be limited; however, the number of boaters would continue to be unlimited. This would not change the ability of visitors to casually boat on the Merced River.

Total Visitors. Under Alternative 6, the number of visitors passing through Segments 3 and 4 is expected to remain constant with no change from Alternative 1.

Parking. The day use parking capacity would be 180 spaces in Segment 3 and 414 spaces in Segment 4. Parking is not likely an issue for visitors in these segments. Segments 3 and 4 would continue to be characterized by scenery, lack of crowds, and variety of water-based recreation opportunities.

Alternative 6 would add a 200-vehicle parking lot in El Portal, which would provide remote parking for valley visitors. This would be a valuable addition for those visitors who prefer to avoid the lines and permits required to access the valley but would not affect those who choose to recreate in Segments 3 and 4.

Segments 3 and 4 Impact Summary: Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 and 4.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

In addition to the resource actions common to Alternatives 2–6, 13 sites would be removed from the Wawona Campground to protect cultural resources and the 100-foot riparian buffer. Visitors who value improved resource conditions would find removal of these campsites beneficial to their experience and in keeping with this restoration-intensive alternative. Removal of these campsites would have a negative impact on the experience of those visitors for whom camping close to the South Fork Merced River is an important part of their experience of Yosemite.

Impacts of Actions to Manage User Capacity and Facilities

Recreation Facilities. The Wawona Golf Course, golf shop, and tennis courts would be retained under Alternative 6. This is a beneficial decision for the relatively small number of golfers and tennis players, but an adverse impact on those who believe that golf is an inappropriate activity so close to the river. For most guests, tennis and golf do not have an effect on their visitor experience. The retention of these facilities is not in keeping with a visitor experience characterized by nature-based, river-dependent activities.

Removal of the Wawona stables would completely eliminate day rides from Segment 7. For visitors who participate in this activity, this action would negatively affect their experience. However, a limited number of visitors participate in this activity, so its removal would not affect most visitors in Wawona.

Boating. Private boating would be allowed in Segment 7 but regulations would limit put-in and take-out sites and the number of boats to 10. This would negatively affect those visitors who are accustomed to unrestricted access. Private boating would be allowed in the South Fork Merced River wilderness (Segments 5 and 8) for 10 boats per day in each segment. Private boating in Segments 5 and 8 would provide a recreation opportunity and enhance the visitor experience for those visitors who participate in this activity.

Overnight Accommodations. The number of overnight lodging units at the Wawona Hotel would remain the same as under Alternative 1. Demand for overnight accommodations would continue to exceed supply throughout the season. The removal of 13 sites from the Wawona Campground would result in a 14% reduction in the number of campsites. Demand frequently exceeds supply at this campground and removal of these sites, coupled with visitation levels that are equal to the current levels, would exacerbate this problem.

Parking. Total day-use parking spaces in Wawona would remain at 290 spaces. This number is currently inadequate during peak times, and visitors would continue to experience crowding and congestion as they search for parking.

Visitor Use Levels. The total number of visitors to the South Fork Merced River under Alternative 6 is expected to stay the same as under Alternative 1. Crowding and congestion occur in Wawona and along the South Fork Merced River during peak times, and this would continue. Peak day use levels (PAOT) would increase over that of Alternative 1, from 1,295 to 1,606, primarily due to increased transit use.

Segments 5-8 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.

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

The focus of Alternative 6 is on diversified visitor experiences and selective riverbank restoration. Alternative 6 would achieve this, but not without having some impacts on visitor use and experience. Like Alternative 5, Alternative 6 also attempts to balance restoration and visitor use and provides a number of methods to manage crowding and congestion and improve the visitor experience. Restoration activities would be noticeable to visitors, but less intense than the restoration proposed under other alternatives. In general, restoration actions improve the quality of natural resources and thus the overall visitor experience. Under Alternative 6, the extent of the restoration actions is 176 acres, in addition to those restoration actions that are common to Alternatives 2–6, and presents the least amount of restoration of any action alternative. These actions are highly beneficial to resource conditions and river function and slightly limit access to and availability of recreation and visitor services, and the overall visitor experience.

Actions under Alternative 6 would reduce recreational activities that are not directly resource-based. Under Alternative 6, Merced Lake High Sierra Camp would be retained; Little Yosemite Valley wilderness zone capacity and overnight wilderness permits would remain as under current conditions; commercial stock use, tennis, and other nonriver-related visitor services would be eliminated; lodging would increase by 18% and camping by 46%; and peak day use levels (PAOT) would increase throughout the corridor by an average of 12%. A traffic circle and pedestrian underpass at Yosemite Village and a roundabout at Sentinel Road in the valley, as well as remote parking lot in El Portal, would be added to address expanded visitation and reduce congestion in the valley. Total parking capacity would increase by 7%. These actions would improve the experience of visitors once they were within the Merced River corridor due to less congestion, and would also address the demand for more camping in the valley. Because Alternative 6 would increase visitor access and add congestion and crowding controls, more visitors than under current conditions would be able to gain access to Segment 2A (East Valley) via private vehicle and the experiences it provides. Overall, with implementation of mitigation measures MM-VEX-1 and MM-VEX-2, as appropriate (see Appendix C), these actions would result in a corridorwide, long-term, moderate, adverse impact on access to and availability of recreation and visitor services and the overall quality of the visitor experience.

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

Cumulative impacts on visitor experience related to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions under Alternative 6. Cumulatively considerable projects would be the same as those identified for Alternative 2, and include only those that could affect visitor experience within the Merced River corridor or in the park vicinity.

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

The cumulative impacts of Alternative 6 management measures on visitor experience would generally be beneficial in Segments 1–8. Past and present visitor services improvements and upgrades would enhance visitors' ability to experience the river. Changes to visitor facilities due to their removal, relocation or retrofit would be designed to protect the river corridor while maintaining opportunities for visitors to experience characteristics of the river. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans. As a result, the cumulative impact of Alternative 6

management measures, in light of past, present, and reasonably foreseeable future projects, would be parkwide, long-term, minor to moderate, and beneficial.

Wilderness Character

Affected Environment

Regulatory Framework

The Wilderness Act of 1964

The Wilderness Act of 1964 is one of the country's most notable pieces of environmental legislation. The act requires that federal land managers preserve and protect the character of lands formally designated as Wilderness, defining wilderness as:

> *. . .wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation. . .*

The Wilderness Act prohibits certain uses in designated wilderness including motor vehicles, motorized equipment, landing of aircraft, other forms of mechanized transport, and structures or installations except as necessary to meet the minimum requirements for the administration of the area for the purpose of the Act.

The California Wilderness Act of 1984

With passage of the California Wilderness Act of 1984, the majority of Yosemite National Park was designated as wilderness. Certain other lands, some of which involved uses prohibited under the Wilderness Act of 1964, were identified as potential wilderness additions. According to the act, potential wilderness additions would become designated wilderness upon the Secretary of the Interior's publication in the *Federal Register* of a notice that all prohibited uses have ceased.

Management Policies 2006

The National Park Service (NPS) *Management Policies 2006* provide guidance to park managers on several wilderness-related topics. These policies specify that the NPS will manage wilderness areas for the physical protection of wilderness resources, but also the preservation of the area's wilderness character. In carrying out these objectives, the superintendent of each park containing wilderness is tasked with developing and implementing a wilderness management plan to guide the preservation, management, and use of wilderness resources. The plan identifies desired future conditions and thresholds beyond which management actions will be taken to reduce human impacts on wilderness resources. In Yosemite, wilderness areas are managed under the 1989 *Yosemite Wilderness Management Plan* (described below).

Director's Order 41: Wilderness Preservation and Management

Director's Order 41 builds on the wilderness-related policies set forth in the NPS *Management Policies 2006*, providing additional detail and instruction regarding the stewardship of NPS lands designated or having the

potential to be designated wilderness. To further wilderness preservation and stewardship objectives, Director's Order 41 approved a wilderness guidance manual (*Reference Manual #41*), established a wilderness stewardship steering committee, and set forth a framework for wilderness stewardship responsibility and accountability. Director's Order 41 also identifies and provides guidance on specific wilderness stewardship issues, such as the types of activities that may or may not be authorized under the Wilderness Act's administrative exception to the general use prohibitions (that is, use of motorized equipment, etc.).

Yosemite Wilderness Management Plan (1989)

The Yosemite Wilderness was established by the California Wilderness Act of 1984. The committee report accompanying the 1984 act contains recommendations for managing Yosemite Wilderness regarding operational and environmental impacts. The *Yosemite Wilderness Management Plan* responded to those recommendations in addition to a number of objectives identified through condition reports and other research. In the near future, the NPS anticipates development of *The Yosemite Wilderness Stewardship Plan* and accompanying environmental impact statement.

Wilderness Character

The California Wilderness Act of 1984 (Public Law [PL] 98–425) directs the NPS to manage areas designated as wilderness according to provisions of the Wilderness Act of 1964. Although many intangible aspects of wilderness character are important, the NPS (Landres et al. 2008) has identified four qualities that are practical and measurable and rooted in the Wilderness Act. They are:

- **Untrammeled** – Wilderness is essentially unhindered and free from modern human control or manipulation. This quality is diminished by modern human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness.
- **Natural** – Wilderness ecosystems are substantially free from the effects of modern civilization. This quality is diminished by intended or unintended effects of modern people on the ecological systems inside the wilderness since the area was designated.
- **Undeveloped** – The Wilderness Act states that wilderness is "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation," "where man himself is a visitor who does not remain" and "with the imprint of man's work substantially unnoticeable." This quality is diminished by the presence of structures, installations, and habitations and by the use of motor vehicles, motorized equipment, or mechanical transport that increases people's ability to occupy or modify the environment. Development in the wilderness such as trails, designated camping areas, composting toilets and bear boxes is intended, not for the convenience of visitors, but to protect the wilderness character.
- **Solitude or Primitive and Unconfined Recreation** – The Wilderness Act states that wilderness has "outstanding opportunities for solitude or a primitive and unconfined type of recreation." This quality is about the *opportunity* for people to experience wilderness; it is not directly about visitor experiences in itself. This quality is diminished by settings that reduce these opportunities, such as visitor encounters, signs of modern civilization, recreation facilities, and management restrictions on visitor behavior.

Yosemite Wilderness

Bounded by the Emigrant Wilderness to the north, the Hoover Wilderness to the east, and the Ansel Adams Wilderness to the south, the Yosemite Wilderness encompasses an area totaling 706,624 acres, which is approximately 95% of the total park area. Another 927 acres of the park are identified as potential additions to the Yosemite Wilderness.

In comparison to the non-wilderness areas, there is generally less visitor use in wilderness areas. Wilderness visitation in Yosemite is generally concentrated within a few popular locations, campsites, and trails. The majority of wilderness visitor use occurs within less than 30% of the park's wilderness areas, with most use distributed along approximately 70 miles of the park's 800-mile wilderness trail system (Newman 2001). The majority of Yosemite's trails evolved from travel routes created and used by American Indians, cattle and sheep herders, the U. S. Cavalry, and the NPS. In contrast, a small number of trails in Yosemite were created specifically for tourism. These include many of the trails that lead out of Yosemite Valley, as well as the trails that lead up the rocky canyons of both the Merced and Tuolumne Rivers. These routes are in steep, rugged terrain and required prodigious efforts to construct. These trails provide access to areas that would otherwise be very difficult for most hikers to reach without technical rock climbing or canyoneering skills.

In Yosemite, overnight access to the wilderness is controlled by a system of permits and the wilderness trailhead quota system based upon wilderness zones. The wilderness is divided into 53 wilderness travel zones. Zone boundaries are generally based on watershed boundaries. In order to limit use and preserve resource integrity, each zone has a designated carrying capacity based on its physical and ecological factors. Based on the capacity of the zones through which the trail travels, each wilderness trailhead is assigned a numeric quota that equals the number of overnight visitors who can depart from that trailhead each day. Day users are not included in this quota and are not required to have a permit except to climb Half Dome.

A wilderness permit is required for all groups planning an overnight stay in the wilderness. Permits are given to groups of hikers, with a maximum of 15 hikers in a group. Therefore, a trailhead with a 30 people per day quota could be made up of 2 permits for two groups of 15, 6 permits for six groups of 5, or 15 permits for 15 groups of two. Table 9-106 indicates overnight visitation in the wilderness from 2006 through 2010. In 2010, the average group size in the wilderness, based upon the data in Table 9-106, was 2.9 and the average visit duration was 2.7 nights.

In addition, to minimize resource impacts, park wilderness and resource management staff identify and restore areas exhibiting visitor use impacts. Restoration measures include removing illegal and/or excessive campsites, reducing in size certain fire rings and removing associated trash and charcoal, obliterating obsolete or informal trails, and using control measures for non-native vegetation growth.

TABLE 9-106: YOSEMITE WILDERNESS OVERNIGHT VISITOR USE

	2006	2007	2008	2009	2010
Total Overnight Visitors	40,804	43,401	45,907	52,610	53,139
Total Permits Issued (*)	14,141	15,125	15,156	18,777	18,632
Total Overnight Stays	82,484	112,049	124,817	142,623	142,864
SOURCE: NPS 2011a					

Study Area Wilderness

Approximately 70% of the Merced River in Yosemite flows through designated wilderness. Within the study area, which extends 1.25 miles on either side of the Merced River, there is a total of approximately 95,980 acres of designated wilderness, which is about 14% of the entire Yosemite Wilderness. There are 141 miles of wilderness trails within the study area.

River Corridor Wilderness

Within the river corridor itself, there are 18,677 acres of wilderness. Along the river's main stem, the wilderness boundary begins approximately 100 feet upstream of Nevada Fall (in Segment 1). The South Fork Merced River above Wawona (Segment 5) is also in wilderness. The entirety of Segment 1 (12,000 acres) and Segment 5 (5,500 acres) are designated wilderness with the exception of the eight-acre area around Merced Lake High Sierra Camp, which is a potential wilderness addition. The acreages of wilderness within each segment are shown in Table 9-107 (note that Segments 4 and 8 do not contain any designated wilderness, and Segment 6 contains wilderness on the lands adjacent to the Wawona Impoundment).

TABLE 9-107: ACRES OF WILDERNESS IN RIVER CORRIDOR BY SEGMENT

Segment Number	Total Acres in Segment	Acres of Wilderness in Segment	Percent of Segment in Wilderness	Miles of Trails in Wilderness Portion of Segment
1	12,104	12,104	100%	26.0
2	3,648	667	18%	0.8
3	2,240	61	3%	0.1
5	5,507	5,507	100%	4.1
6	17	15	88%	0.8
7	1,446	323	22%	0
River Corridor Total	**24,961**	**18,677**		**31.8**

Trails. As Table 9-107 indicates, in the Merced River corridor wilderness above Nevada Fall (Segment 1), there are approximately 26 miles of trail, some of which are heavily used. Primary access to this area is provided by the Mist Trail and John Muir Trail, which originate in Yosemite Valley. Wilderness access along the South Fork Merced River (Segment 5), which includes approximately 4 miles of trail, is more limited and is accessed from U.S. Forest Service trailheads that enter the park at Chiquito Pass and Fernandez Pass.

Wilderness Zones. The River Corridor contains portions of 15 wilderness zones as indicated in Table 9-108.

TABLE 9-108: WILDERNESS ZONES WITHIN THE RIVER CORRIDOR

Wilderness Zone #	Wilderness Zone	Acres within the River Corridor	Segment(s)
61	Washburn Lake	5,060	1
50	South Fork Merced River	3,379	5
58	Clark Range	2,418	1, 5
60	Merced Lake	2,026	1
62	Mount Lyell	1,965	1
52	Chilnualna Creek	1,169	5, 6
59	Little Yosemite Valley	1,145	1
51	Johnson Creek	758	5
47	Half Dome	282	1, 2
68	Yosemite Creek	187	2
55	Bridalveil Creek	121	2
57	Illilouette Creek	70	1, 2
56	Buena Vista Creek	69	5
66	Sunrise Creek	16	1
67	Snow Creek	14	2
	Total Acres Wilderness	**18,679**	

Overnight access to the wilderness is controlled by daily visitor quotas established for each wilderness zone. The Mist Trail and John Muir Trail, originating within Yosemite Valley, are most commonly used to access the Merced River corridor, accounting for 67% of visitors to Little Yosemite Valley and 26% of visitors to access Merced Lake. Other trailheads providing access to these areas include Glacier Point and some of the Tuolumne Meadows trailheads. The quotas associated with the trailheads from which most wilderness visitors to Segment 1 originate are:

- Happy Isles to Sunrise/Merced Lake Pass Thru (no camping in Little Yosemite Valley) – 10
- Happy Isles to Little Yosemite Valley (first night at Little Yosemite Valley camping area) – 30
- Happy Isles to Illilouette – 10
- Glacier Point to Little Yosemite Valley(first night at Little Yosemite Valley camping area) – 10

Under these quotas, use in Segment 1 is steady, as shown in Table 9-109. The designated wilderness camping areas within Little Yosemite Valley and Merced Lake wilderness zones typically experience heavy use, especially throughout the peak visitation season, between Memorial Day and Labor Day weekends (Fincher 2010).

On the trails providing access to Segment 5, wilderness trailhead quotas are 40 at Chilnualna Falls, 15 at Alder Creek, and 25 at Deer Camp. However, the majority of Segment 5 hikers originate on U.S. Forest Service land outside of the park. Because segments 1 and 5 contain almost all the designated wilderness in the corridor, the discussion of impacts to wilderness character below focuses on these two segments. The small amounts of wilderness in segments 2 and 6 are included in the discussion of segments 1 and 5, respectively.

TABLE 9-109: TRAIL USE ABOVE LITTLE YOSEMITE VALLEY TO MERCED LAKE (2010) (WILDERNESS-BOUND HIKER TRAFFIC)

Month	Average Daily Use	Total
July	31	952
August	34	1,063
September	23	677
October[a]	10	117
Total Season (July to September)	30	2,864

NOTE:
[a] Use counts were taken from October 1 through October 12.

SOURCE: NPS 2011h

Segment 1: Merced River Above Nevada Fall

Untrammeled. Human activities and actions that control or manipulate the components or processes of ecological systems in Segment 1 include the following:

- hazard tree removal at the designated camping areas, ranger stations, and High Sierra Camp
- restoration projects of all types
- diversion of water for the High Sierra Camp, and
- management of lightning-caused fire.

Natural Condition. Effects of modern civilization on the ecosystem in Segment 1 include the following:

- climate change
- airborne contaminants
- vegetation changes due to fire suppression
- vegetation damage and soil loss along trails, in designated camping areas and dispersed campsites due to off-trail use and concentrated use
- unburied human waste
- wildlife accustomed to human use
- vegetation damage from meadow grazing by livestock
- trail and meadow damage from stock use
- spread of invasive plant, animal, and fungal species

Undeveloped. Permanent/semi-permanent improvements or human habitation in Segment 1 include the following:

- Trail signage at various locations.
- Little Yosemite Valley Ranger Station has three canvas-wall tents, an outdoor roofed cooking area, corral, and storage sheds.

- Merced Lake Ranger Station - This three-room cabin, constructed in 1927, was originally constructed for winter service in connection with the acquisition of hydrologic data. Today, wilderness patrol, resource management staff, and trail workers use the cabin.
- Three wilderness camping areas:
  - Little Yosemite Valley, with two fire rings, a composting toilet, and several bear-proof food storage boxes.
  - Merced Lake, with a drinking water fountain, two flush toilets, a septic system, and several bear-proof food storage boxes.
  - Moraine Dome, with several bear-proof food storage boxes.
- The Merced Lake High Sierra Camp, which accommodates 60 overnight guests and has 22 tents, a kitchen and dining hall, barn, ice house (used for perishable food storage), toilet building with eight water closets, and separate men's and women's shower houses with eight total shower stalls and eight sinks. The kitchen, ice house, and toilet building are permanent wooden structures built on concrete slabs. The barn is a wooden structure with wood flooring. Canvas tents are used for the guest quarters, shower houses, and dining hall. These tents are erected with steel poles on concrete slabs at the beginning of each season and dismantled at the end of the season. The guest cabins do not have woodstoves, but there is a woodstove in the dining hall. The sewer system consists of a septic tank, lift station (powered by solar panels), dosing tank, leach field, and associated piping. The water system consists of a chlorinator shed, water pump (powered by solar panels), sand filter, three 1,500-gallon tanks, and associated piping. This area is a potential wilderness addition. It is visible from adjacent wilderness, and maintenance and upkeep of the camp involves packstock resupply trips through wilderness as well as occasional helicopter flights over wilderness.

Solitude or Primitive and Unconfined Recreation. The discussion of this component of wilderness character is broken down into its three sub-components.

Solitude. Factors that reduce visitors' ability to experience solitude include:

- Number of visitors
- Length of stay
- Group size
- Encounters with other visitors. The frequency of encounters with other people or groups along trails is often used to evaluate opportunities for solitude in wilderness settings. Park staff regularly measure encounter rates through indirect counts utilizing automated trail counters as a component of the Visitor Use and Impacts monitoring program. Increased encounters with other parties in the wilderness can diminish the feeling of solitude. Newman (2002) found that visitors will tolerate higher numbers of encounters while hiking than while in camp. Actual encounter rates are collected using established methodologies (Broom and Hall 2010) at three trail sections along the Merced River Corridor. The most recent actual encounter rates collected in 2010 are shown in Table 9-110.

TABLE 9-110: WILDERNESS ENCOUNTERS OBSERVED IN UPPER MERCED RIVER CORRIDOR (2010)

Trail Section	Mean Hourly Encounter Rates [a]			
	2010	2011	2012	2013
Above Little Yosemite Valley Campground to Bunnell Cascade	2.11	1.64	1.75	1.98
Echo Creek to Lewis Creek	3.67	-[b]	4.34	4.52
Lewis Creek to Lyell Fork	-[b]	.61	1.02	1.55

[a] The "mean number of hourly encounter rates" is quantified using the predicted hourly encounter rate based on a ten hour day and averaged over the season. Predicted encounter rates are generated from daily automated counter measurements that have been correlated with actual encounters, as reported by trained observers.
[b] Data is not available for these years.

Primitive Recreation. Factors that reduce the visitors' ability to experience self-reliance and the use of traditional skills include:

- Presence of structures and installations
- Use of helicopters and other motorized equipment
- Recreation Activities. The majority of types of recreation activities in Segment 1 (hiking, backpacking, fishing and camping) have the dimensions of simplicity, lack of technology, and self-reliance. Photography, swimming, wildlife viewing, and contemplation are also activities that enable wilderness visitors to experience the sense of solitude, self-reliance, exploration, and adventure that contribute to a fulfilling wilderness experience. Guided pack trips and commercially guided and NPS-guided hiking trips are less primitive (because they are less self-reliant) and less solitary (due to generally larger group sizes) forms of recreation that occur in Segment 1.

Unconfined Recreation. Factors influencing unconfined recreation in Segment 1 include management restrictions on visitor behavior once inside the wilderness, such as requirements to camp in designated camping areas or to avoid other areas, regulations prohibiting fires or pets, the need to show a wilderness permit upon demand, and rules requiring the use of existing fire rings.

Segment 5: South Fork Merced River above Wawona

Untrammeled. Human activities and actions that control or manipulate the components or processes of ecological systems are limited in Segment 5 but include restoration activities and suppression of fires caused by lightning.

Natural Condition. Effects of modern civilization on the ecosystem in Segment 5 would be similar to those in Segment 1.

Undeveloped. The only permanent/semipermanent improvements or human habitation in Segment 5 are trails and trail signs. There are no designated camping areas within the wilderness areas of the South Fork Merced River corridor. Horse Thief Camp is an established primitive stock camp occasionally visited by guided pack trip parties and containing a "drift fence" to contain stock when the camp is in use. Between 2004 and 2010, commercially guided pack trips in Segment 5 averaged 13 stock-use nights, with a high of 50 in 2009. All use occurred at Horse Thief Camp (NPS 2011i).

Solitude or Primitive and Unconfined Recreation.

Solitude. Visitation within Segment 5 is considerably lower than in Segment 1. Encounter rates are expected to be low and opportunities for solitude relatively high within the wilderness areas of the South Fork Merced River corridor.

Recreation. As with Segment 1, the most common wilderness visitor activities along the South Fork Merced River are primitive in nature. These include hiking and backpacking, with a small amount of private and commercial stock use. Access is via both formal trails and cross country travel. Both day use and dispersed overnight camping occur in this segment.

Unconfined Recreation. Management restrictions on visitor behavior once inside the wilderness are limited in Segment 5 as there are no designated camping areas. Wilderness regulations would continue to prohibit pets and camping in certain areas, as well as requiring the use of existing fire rings.

Environmental Consequences Methodology

This analysis evaluates how wilderness character in the Merced River corridor might be affected by the actions described in the alternatives. The elements of wilderness character that are examined are untrammeled, undeveloped, natural character, and opportunities for solitude or primitive and unconfined recreation (with each of those three subcomponents discussed separately).

- **Context.** The context of the impact considers whether the impact would be local, segmentwide, parkwide, or regional. For this analysis, local impacts would be those that occur in a specific area within a segment of the river. This analysis further identifies if there are local impacts in multiple segments. Segmentwide impacts would consist of a number of local impacts within a single segment, or larger-scale impacts that would affect the segment as a whole. Parkwide impacts would extend beyond the river corridor and the study area within Yosemite. Regional impacts would be those that extend to the Yosemite gateway region.
- **Intensity.** The intensity of the impact considers whether the impact on the elements of wilderness character would be negligible, minor, moderate, or major.
    - ***Negligible:*** There would be no effect or effects would not be measureable. Any affects to wilderness would be slight, short term, and localized to the study area.
    - ***Minor:*** Effects on wilderness character, including changes in encounter rates, agency imposed restrictions, or natural character, would be detectable.
    - ***Moderate:*** Effects on wilderness character would be readily apparent, affect the river segment, and possibly extend beyond the river corridor. Mitigation would probably be necessary to offset adverse impacts.
    - ***Major:*** Effects would be readily apparent and would substantially change wilderness character locally as well as parkwide. Extensive mitigation would likely be necessary to offset adverse impacts and success could not be guaranteed. Major impacts could include adding or removing permanent installations.
- **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, such as impacts associated with construction or restoration activities. A long-term impact would have a permanent effect on wilderness character, at least within the planning horizon for the Merced River Plan.
- **Type of Impact.** Impacts were evaluated in terms of whether they would be beneficial or adverse to wilderness character. Identification of beneficial and adverse impacts on each of the elements of wilderness character follows:
    - ***Untrammeled.*** The quality of wilderness character protects wilderness areas from modern human control or manipulation of the biophysical environment. An action is considered adverse when there is manipulation of the biophysical environment (such as restoration or controlling fires caused by lightening) and beneficial if it reduces the effects of such manipulation. Generally, an action would only benefit the untrammeled quality if it was a policy change such as no longer suppressing fires in the wilderness.
    - ***Natural.*** This factor considers whether wilderness ecological systems are substantially free from the effects of modern civilization. The effects of an action are considered to be adverse when it increases the effects of modern humans on ecological systems. Effects are considered beneficial when they decrease such effects, through either natural recovery or intentional restoration.
    - ***Undeveloped.*** The Wilderness Act states that wilderness is "an area of undeveloped Federal land . . . without permanent improvements" and "with the imprint of man's work substantially unnoticeable." This element considers the amount and type of permanent

improvements, structures, installations, and administrative use of motorized tools and mechanized transportation. Improvements in wilderness are generally judged by a number of criteria. Developments in wilderness are generally judged by both number and type. Actions that increase the number of developments or the visual obtrusiveness, permanence, or technological sophistication of the development are considered to be adverse; actions that result in fewer developments or that are less obvious, more temporary, or more primitive are considered beneficial.

- ***Opportunities for Solitude.*** In wilderness areas, visitor experience is influenced by the number of other groups encountered during a given time period. Actions that increase crowding are considered adverse, while those that reduce crowding are considered beneficial. In high-use wilderness areas such as Segment 1 of the Merced River corridor, solitude is determined to be an area free from crowding. The threshold for crowding is determined in part through visitor surveys that indicate values and attitudes on crowding and congestion. These survey results are compared to encounter rates, people at one time, and/or people per viewshed to determine how visitor-informed thresholds for crowding compare with actual visitor use.
- ***Primitive Recreation.*** The opportunity for primitive recreation and the quality of primitiveness were considered as having the dimensions of simplicity, lack of technology, and self-reliance (Johnson, Hall, and Cole 2005). Actions that decrease the opportunities for this type of recreation are considered adverse; those that increase such opportunities are considered beneficial.
- ***Unconfined Recreation.*** This factor considers the difficulty for visitors to travel freely once inside the wilderness and the extent of regulatory requirements placed on them. Actions that increase the managerial control and oversight of wilderness visitors, such as requiring visitors to camp in designated areas, are considered adverse, while those that reduce managerial control and oversight are considered beneficial.

Environmental Consequences of Alternative 1 (No Action)

The following section provides an overview of the types of impacts on wilderness character that could occur within the Merced River corridor under Alternative 1 (No Action). This analysis of impacts is limited to Segments 1 and 5. The entirety of Segments 1 and 5 are designated wilderness.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Untrammeled. Under Alternative 1 (No Action), current activities and actions that exhibit human control and manipulation of the landscape would continue. These management activities strive to repair visitor impacts and include restoration, removal of non-native vegetation, obliterating informal trails, and removal of illegal campsites, fire rings and trash. Although beneficial to other aspects of wilderness character, these activities would have the effect of further manipulating the natural environment. Because these activities are generally over relatively small areas, the impacts of these activities on the untrammeled character of the wilderness would be local, negligible, long-term, and adverse.

Natural. Under Alternative 1 (No Action) the current management activities described above would serve to improve the natural conditions in Segment 1. Removal of non-native vegetation, obliteration of informal trails, educational and enforcement efforts to alter visitor behavior and lessen their impact, and other management activities would allow natural processes to continue with reduced interference from human

impacts. The impact of these activities on the natural character of the wilderness would be local, minor, long-term and beneficial.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Untrammeled. Under Alternative 1 (No Action) activities such as hazard tree removal to protect visitors to the Merced Lake High Sierra Camp, would maintain the human control and manipulation of a natural processes. However, such actions occur infrequently.

Undeveloped. Under Alternative 1 (No Action), the permanent and semi-permanent structures and facilities in Segment 1 would remain as they are currently and be managed and maintained as they are today. These include the structures and infrastructure at Merced Lake High Sierra Camp, the designated camping areas, and the ranger stations. Motorized equipment would remain in use to operate the High Sierra Camp. Occasional helicopter use would continue to be used to transport goods, materials and waste that cannot be transported by stock to and from the High Sierra Camp. There would be no additional development or improvements under Alternative 1 (No Action).

Natural. Under Alternative 1 (No Action), most wilderness natural resources and ecosystems would remain intact because of the relationship between resource protection and wilderness quotas. In areas of more intense visitor use (designated camping areas, Merced Lake High Sierra Camp, and along trail corridors), natural resources, such as high- and mid-elevation meadows and riparian habitat, would continue to show impacts of human use although some restoration and repair would continue to occur. Wilderness patrols, permit requirements, and educational efforts designed to help visitors understand and protect natural resources by altering their behavior would also benefit the natural component of wilderness character. Impacts to meadows and other sensitive resource areas would continue from stock grazing (see Chapter 5, discussion of ORVs 1 and 2 for a more detailed discussion of high- and mid- elevation meadow health in Segment 1). The projected increase in day visitors in Little Yosemite Valley due to increased park visitation may increase human impacts on the natural resources in this portion of Segment 1. This increase would be small because day hikers must hike 2.5 miles before reaching the Segment 1 wilderness. (Day hikers (except those climbing Half Dome) do not require a permit to hike into the wilderness). Current activities have both adverse and beneficial impacts on the natural character of the wilderness.

Solitude. Under Alternative 1 (No Action), wilderness encounter rates closest to the wilderness boundary would be expected to increase slightly from current rates due to increased visitation to the park. This increase would be small because day hikers must hike 2.5 miles before reaching the Segment 1 wilderness. (Day hikers (except those climbing Half Dome) do not require a permit to hike into the wilderness). Encounter rates would remain at current levels farther into the wilderness as the wilderness zone capacities are not expected to change. The total wilderness zone capacity in Segment 1would remain at 380 people. Conflicts and encounters between stock and hikers would also continue under Alternative 1 (No Action). Designated camping areas would remain in Alternative 1 and are less conducive to solitude than dispersed camping.

Primitive. Under Alternative 1 (No Action), most experiences in the Yosemite Wilderness would remain as they are today—primitive in nature and exhibiting simplicity, self-reliance, and a lack of technology. Predominant activities, which would continue under Alternative 1, are hiking and backpacking. Camping would continue to be a mix of dispersed camping and camping in the three wilderness camping areas in Segment 1 (Merced Lake and Little Yosemite Valley, which have developed facilities including restrooms, and Moraine Dome, which does not have any developed facilities). Fishing would also continue in

Segment 1 under this alternative. Private boating would continue to be prohibited in designated wilderness. Activities that would continue and are less primitive in nature include overnight concessioner pack trips. Areas that would continue to promote a less primitive experience are the Merced Lake High Sierra Camp, a developed overnight facility with 60 beds, food service, and restrooms.

Unconfined Recreation. Under Alternative 1 (No Action), the ability for visitors to travel freely once inside the wilderness and the regulatory requirements placed upon them would remain as they are today. Permit regulations would remain unchanged. Day hikers not going to Half Dome do not need a day-use permit to hike in the wilderness and therefore would continue to have the greatest opportunity for unconfined recreation.

Segment 1 Impact Summary: Implementation of Alternative 1 would result in segmentwide and local, long-term, minor, adverse impacts on wilderness character within Segment 1.

Segment 5: South Fork Merced River Above Wawona

Impacts of Actions to Protect and Enhance River Values

Untrammeled. Management activities in Segment 5 to protect and enhance river values would be similar to those in Segment 1, but occurring on a smaller scale due to the inaccessibility of most of Segment 5.

Natural. Under Alternative 1 (No Action), the ecosystem in Segment 5 would continue to function with limited human interference due to the near absence of facilities in this segment and the rugged nature of the landscape.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Undeveloped. There are no developed facilities in Segment 5. Therefore, Alternative 1 (No Action) would have no impact on the undeveloped character of the wilderness.

Solitude. Under Alternative 1 (No Action), a wide range of opportunities for solitude would continue. Encounter rates in Segment 5 are not well studied, but this segment is less frequently visited than Segment 1. The total capacity of the wilderness zones in Segment 5 would remain at 15.

Primitive. Under Alternative 1, there would be no changes to the trailheads providing access to the wilderness in Segment 5; thus, opportunities for recreation characterized by simplicity, self-reliance, and a lack of technology would remain unchanged.

Unconfined Recreation. Under Alternative 1 (No Action), the wilderness permit system would continue to regulate certain activities while visitors are in the wilderness including the use of existing fire rings and the minimum distance a camp site can be from the water.

Segment 5 Impact Summary: Implementation of Alternative 1 would result in segmentwide, long-term, negligible, adverse impacts on wilderness experience within Segment 5.

Summary of Impacts from Alternative 1 (No Action)

Under Alternative 1 (No Action), the greatest impacts on the wilderness character in Segment 1 would be from the infrastructure and visitor use associated with the Merced Lake High Sierra Camp and from improvements to and concentrated visitor use of the three wilderness camping areas in this segment— Little

Yosemite Valley, Moraine Dome, and Merced Lake. In addition, under Alternative 1, the wilderness permit requirements detract from the character of unconfined recreation. Alternative 1 would have a local, minor, long-term, adverse impact on wilderness character in Segment 1. In Segment 5, the impact of Alternative 1 (No Action) on wilderness character would be negligible.

Cumulative Impacts of Alternative 1 (No Action)

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region. The projects identified below include only those projects that could affect wilderness character within the river corridor or in the study area.

Past Actions

The wilderness permit/trailhead quota system, established in the mid-1970s, set limits for the number of people allowed entering the wilderness per day per trailhead. These limits were based on extensive research and monitoring to assess capacity based on ecological and social considerations, and were established in response to exceptionally high levels of use at that time. This system has had beneficial impacts on the wilderness character by protecting natural resources; by contributing to the untrammeled, undeveloped, and natural character of the wilderness; and by providing opportunities for solitude or primitive and unconfined recreation. However, this system represents an agency restriction that affects unconfined recreation in the wilderness.

Present Actions

The wilderness permit/trailhead quota system continues to limit and/or disperse use based on trailhead access. Limiting the number of overnight visitors is likely to protect natural values and promote solitude but affects the unconfined component of wilderness character.

The *Half Dome Trail Stewardship Plan* addresses crowding along the length of the two-mile trail and by doing so addresses congestion on the final 400 feet of the trail to the summit. The Half Dome trail is outside the Merced River corridor but within the study area.

Several other plans or restoration efforts are in various stages of development and implementation, including the following:

- *Fire Management Action Plan for Wilderness* (U. S. Forest Service [USFS])
- Sierra Nevada Framework for Conservation and Collaboration (USFS)
- Management Direction for the John Muir, Ansel Adams and Dinkey Lakes, and Monarch wildernesses (USFS)
- *Pinecrest Basin Forest Plan Amendment* (USFS, Stanislaus National Forest)
- *Tuolumne Wild and Scenic River Comprehensive Management Plan* (NPS)

Reasonably Foreseeable Future Actions and Conditions

Two reasonably foreseeable future actions proposed in the Yosemite region could have a cumulative beneficial effect on wilderness character. The first is the *Yosemite Wilderness Stewardship Plan/EIS*, which will provide overall direction for the management of the Yosemite Wilderness. The plan will address visitor

use, administrative use, commercial use, stock use, vegetation management, noise issues and other natural, cultural, and social resource issues. The plan update will also address the use of the five High Sierra Camps in Yosemite. The second set of actions is Clean Water Act and Health and Food Safety Code regulatory updates, which could result in required upgrades and improvements to water and wastewater treatment facilities at the Merced Lake High Sierra Camp.

Overall Cumulative Impact

The past, present, and future actions, when considered with Alternative 1 (No Action), would result in continued protection of wilderness resources; continued limits on overnight use; and retention of manmade structures and facilities. The overall cumulative impact of Alternative 1 (No Action) on wilderness character would be local, minor, long term and adverse.

Environmental Consequences of Actions Common to Alternatives 2–6

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Programmatic biological resource actions common to all alternatives include:

- Re-route trails out of sensitive habitats through wetlands. New trail routes should avoid wetlands and special status habitat.
- Merced Lakeshore Meadow: Remove informal trails, decompact soils, fill ruts with native soils, and revegetate denuded areas with native plants.
- Relocate sections of trail through wetland in Echo Valley and mineral spring outflow between Merced Lake and Washburn Lake to less sensitive areas.
- Reroute the Triple Fork Peak meadow trails to upland where possible.

Untrammeled. Biological resource actions, although beneficial to other aspects of wilderness character, would have a local, minor, long-term, adverse impact on the untrammeled quality of wilderness character as restoration involves human manipulation of ecological systems.

Natural. Biological resource actions would have a local, minor, long-term beneficial impact on the natural component of wilderness character in Segment 1 as eliminating grazing, removing non-native species, and restoring impacted areas would allow ecological processes to recover and lessen some of the evidence of modern civilization on natural areas. Wilderness patrols, permit requirements, and educational efforts designed to help visitors understand and protect natural resources by altering their behavior would also benefit the natural component of wilderness character.

Unconfined. Biological resource actions involving closure, rerouting, and revegetation of informal trails would have a local, minor, short-term, adverse impact on unconfined recreation because these actions would limit the visitor's ability to travel freely in the areas being restored.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

There is one programmatic action proposed to manage use and facilities for Segment 1 that is common to Alternatives 2–6. This action is to allow private boating in the wilderness (though the amount of boating

would vary by alternative). Because of the difficulty of getting any type of boat or raft into the wilderness, it is unlikely that this would become a widespread activity in Segment 1. Because private boating is not a permanent action, it would have no impact on the untrammeled, natural, undeveloped, primitive, unconfined, and solitary aspects of wilderness character.

Segment 1 Impact Summary: Actions to protect and enhance river values would have local, long-term, minor, beneficial impacts on wilderness experience within Segment 1. Actions to manage user capacities, land use, and facilities would have local, long-term, minor, adverse impacts on wilderness experience within Segment 1.

Segment 5: South Fork Merced River Above Wawona

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

There are two actions proposed to manage use and facilities in Segment 5 that are common to Alternatives 2–6. These are to allow private boating in the wilderness (at levels that vary across the alternatives) and remove informal trails and charcoal rings to protect cultural resources. Because of the difficulty of getting any type of boat or raft into the wilderness, it is unlikely that this would become a widespread activity in Segment 5. Because private boating is not a permanent action, it would have no impact on the untrammeled, natural, undeveloped, primitive, unconfined, and solitary aspects of wilderness character. The removal of informal trails and charcoal rings would have a local, long-term, minor, adverse impact on the untrammeled quality of the wilderness due to the manipulation required to remove the trails and fire rings. It would also have a local, long-term, negligible, beneficial impact on the natural character of the wilderness in Segment 5. This action would have no impact on the other aspects of wilderness character.

Management of wilderness in Segment 5 will not vary by alternative; all alternatives would continue the existing trailhead quotas for this area. Consequently, the following discussion of impacts to the wilderness character of Segment 5 is common to alternatives 2-6.

Untrammeled. No actions are planned in Segment 5, so the untrammeled nature of this Segment would be unaffected.

Natural. No actions are planned in Segment 5, so natural forces and processes in this Segment would be unaffected.

Undeveloped. There are no developed facilities in Segment 5.

Solitude. Under Alternatives 2-6, a wide range of opportunities for solitude would continue. The total wilderness zone capacity of Segment 5 is currently 15 and would remain so. Encounter rates in Segment 5 are not well studied but these segments are known to be less frequently visited than Segment 1.

Primitive. Opportunities for recreation characterized by simplicity, self-reliance, and a lack of technology will remain unchanged.

Unconfined Recreation. Under Alternatives 2-6, the requirements set forth in the wilderness permits would reduce the ability to “recreate freely in the wilderness” and have a negligible adverse effect on the quality of unconfined recreation for the limited number of visitors to Segment 5.

Segment 5 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, beneficial impacts on wilderness experience within Segment 5.

Summary of Impacts from Alternatives 2–6

The management actions common to Alternatives 2–6 focus on restoration and repair of natural resources in Segments 1 and 5. Restoration actions could have a local, minor, long-term, adverse effect on the untrammeled quality of the Merced Lake Shore Meadow and East Meadow and a local, minor, beneficial impact on the natural qualities of the Yosemite Wilderness.

Cumulative Impacts Common to Alternatives 2–6

Cumulative effects on wilderness character are based on consideration of past, present, and reasonably foreseeable future actions in the Yosemite region, in combination with potential effects of measures common to Alternatives 2–6. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

Overall Cumulative Impact from Actions Common to Alternatives 2–6

The cumulative impact of the wilderness management measures common to Alternatives 2–6 in conjunction with past, present, and reasonably foreseeable future projects would be local (in Segments 1 and 5), long term, minor, and beneficial. The management measures common to Alternatives 2–6 for Segment 1 would improve the natural and undeveloped aspects of wilderness character by eliminating informal trails. Planned present and future actions would improve wilderness protection and enhancement and limit access to protect wilderness character.

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

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological resource actions under Alternative 2 include removing grazing from the Merced Lake East Meadow permanently, and requiring all administrative pack stock passing through the Merced Lake area to carry pellet feed. This action would have no impact on the untrammeled, undeveloped, primitive, or unconfined qualities of the wilderness experience. Removal of grazing on Merced Lake East Meadow would benefit the natural quality of the meadow. This action would have a local, minor, long-term, beneficial impact on the natural quality of the wilderness in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 2, a number of actions are proposed to manage visitor use and facilities including:

- Discontinue designated camping at Little Yosemite Valley camping area, and remove infrastructure, including composting toilet. Allow dispersed camping in this area.
- Close Merced Lake High Sierra Camp and allow dispersed camping at Merced Lake Backpackers Camping Area into the High Sierra Camp footprint. Convert area to designated Wilderness.

- Discontinue designated camping at the Merced Lake Backpackers Camping Area. Allow dispersed camping in the areas of the former Merced Lake Backpackers Camping Area and the Merced Lake High Sierra Camp; remove flush toilets and septic system.
- Discontinue designated camping at Moraine Dome. Allow dispersed camping in this area.
- Manage to a capacity of 25 (an 83% reduction) in the Little Yosemite Valley Zone using a zone quota or zone pass-through system. All other zone capacities within the Merced WSR Corridor would remain the same.

Impacts of these actions on wilderness character include:

Untrammeled. Under Alternative 2, restoration activities required at Merced Lake High Sierra Camp and in the designated camping areas would have a short-term minor adverse impact on the untrammeled character of the wilderness due to the control and manipulation required to restore the area. Over the long-term, removal of the High Sierra Camp and reduction in zone quotas for the Little Yosemite Valley Zone would benefit the untrammeled character of Segment 1.

Undeveloped. Under Alternative 2, the removal of the permanent and semi-permanent improvements and infrastructure in Segment 1 and restoration to natural conditions would greatly improve the undeveloped character of the wilderness and would also substantially reduce the use of motorized equipment and eliminate the need for routine helicopter trips. By removing the High Sierra Camp and providing the most dispersed camping, Alternative 2 would exhibit the most undeveloped character of any alternative.

Natural. Under Alternative 2, the removal of facilities and infrastructure and conversion to dispersed camping, and the reduced number of visitors would improve the natural character of Segment 1. Ecological patterns and processes would be subject to fewer concentrated human impacts and would be allowed to recover. Under Alternative 2, concessioner stock use would be eliminated due to the removal of the Merced Lake High Sierra Camp. Administrative trail crew stock use would be substantially reduced as trails would require less frequent maintenance due to the removal of the High Sierra Camp. The reduction in stock use would improve the natural character of the wilderness due to reduced introduction of non-native species by stock and reduction of meadow grazing which would improve the natural condition of the meadows.

Solitude. Under Alternative 2, wilderness encounter rates would decrease due to the 83% reduction in wilderness zone capacity for the Little Yosemite Valley zone, from 150 to 25 overnight visitors per day. The conversion of all designated camping areas to dispersed camping would also improve the experience of solitude as visitors could camp apart from other campers rather than confined to a designated camping area. These two factors would noticeably improve the experience of solitude for wilderness visitors in Segment 1.

Primitive. Compared to other alternatives, the lower quotas in this alternative and elimination of the Merced Lake High Sierra Camp will mean there will be fewer opportunities to pursue activities that exhibit simplicity, self-reliance, and a lack of technology.

Unconfined Recreation. Unconfined recreation is affected by management restrictions placed on visitors once they are inside the wilderness. Under Alternative 2, the requirements set forth in the wilderness permits would slightly reduce the ability to "recreate freely in the wilderness" and have a negligible, adverse effect on the quality of unconfined recreation. Day hikers not going to Half Dome do not need a permit and would continue to have the greatest opportunity for unconfined recreation. The conversion of all designated camping areas to dispersed camping would have a beneficial effect on unconfined recreation as visitors would be free to choose where they camp.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, moderate, beneficial impacts on wilderness character within Segment 1.

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

Under Alternative 2, the park would eliminate most of the facilities, infrastructure, and activities that diminish wilderness character; reduce the number of overnight visitors to the Yosemite Wilderness; eliminate overnight stock trips; and close Merced Lake High Sierra Camp, restore the area and designate the area as wilderness. Together, with implementation of mitigation measures MM-NOI-1 through MM-NOI-3 and MM-VEX-1 through MM-VEX-2, as applicable (see Appendix C), these actions would have a segmentwide, long-term, moderate, beneficial impact on wilderness character in Segment 1. Alternative 2 would have no impact on wilderness character in Segment 5.

Cumulative Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions under Alternative 2. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

Overall Cumulative Impact from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Management measures for the wilderness in Alternative 2 would improve the natural, and undeveloped character of the wilderness by removing manmade facilities and stock use. Reducing the number of wilderness visitors and conversion from designated to dispersed camping increases opportunities for solitude. Planned present and future actions would improve wilderness management and limit access to protect wilderness character. The cumulative impact of the wilderness management measures outlined for Alternative 2 in conjunction with past, present, and reasonably foreseeable future projects would be segmentwide (in Segments 1 and 5), long term, moderate, and beneficial.

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

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological resource actions under Alternative 3 include developing preliminary grazing capacities for the Merced Lake East Meadow. When the meadow recovers, administrative grazing at established capacities will be allowed, and NPS will monitor annually for five years, adapting use levels as needed.

This action would have no impact on the untrammeled, undeveloped, primitive, or unconfined qualities of the wilderness experience. Initially this action would have the same impact on the natural quality of the wilderness as Alternative 2 – grazing would be removed from the meadow, with stock continuing to be present in the same

numbers on the trails and elsewhere in the Merced Lake area. Allowing the meadow to recover and then monitoring and adapting grazing levels would improve the natural quality of the wilderness in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 3, a number of actions are proposed to manage visitor use and facilities including:

- Discontinue designated camping at Little Yosemite Valley camping area, and remove infrastructure, and retain composting toilet. Allow dispersed camping in this area.
- Discontinue designated camping at the Merced Lake Backpackers Camping Area. Allow dispersed camping in the areas of the former Merced Lake Backpackers Camping Area and portions of the Merced Lake High Sierra Camp; replace flush toilets with composting toilet and remove septic system.
- Convert Merced Lake High Sierra Camp to a temporary pack camp with a maximum of 15 people per night. Establish a maximum limit of 2.5 pack strings-per-week for re-supply of the temporary outfitter camp for each season. Remove all permanent infrastructure. Convert area to designated Wilderness.
- Discontinue designated camping at Moraine Dome. Allow dispersed camping in this area.
- Manage to a capacity of 75 (50% reduction) in the Little Yosemite Valley Zone using a zone quota or zone pass through system. All other zone capacities within the Merced WSR Corridor remain the same.

Impacts of these actions on wilderness character include:

Untrammeled. Under Alternative 3, restoration activities at Merced Lake High Sierra Camp and in the designated camping areas would have a short-term minor effect on the untrammeled character of the wilderness due to the control and manipulation required to restore this area. Over the long-term, removal of the High Sierra Camp and reduction in zone quotas for the Little Yosemite Valley Zone would benefit the untrammeled character of Segment 1.

Undeveloped. Under Alternative 3, the removal of most of the permanent and semi-permanent improvements and infrastructure in Segment 1 and restoration to natural conditions would greatly improve the undeveloped character of the wilderness and would also substantially reduce the use of motorized equipment and eliminate the need for routine helicopter trips. The Merced Lake High Sierra Camp area would be designated as wilderness once the character of this potential wilderness addition had been restored. Together these actions would improve the undeveloped quality of Segment 1.

Natural. Under Alternative 3, the removal of facilities and infrastructure and conversion of all of the camping areas to dispersed camping, and the reduced number of visitors would improve the natural character of Segment 1. Ecological patterns and processes would be subject to fewer concentrated human impacts and would be allowed to recover. Two composting toilets, one at Merced Lake and the other at Little Yosemite Valley, would lessen the impact of human use on the natural environment. Under Alternative 3, concessioner stock use would be eliminated due to the removal of the Merced Lake High Sierra Camp. Administrative trail crew stock use would be substantially reduced as trails would require less frequent maintenance due to the removal of the High Sierra Camp. The reduction in stock use would improve the natural character of the wilderness due to reduced introduction of non-native species by stock and reduction of meadow grazing.

Solitude. Under Alternative 3, the capacity of the Little Yosemite Valley zone would be reduced by 50%, from 150 to 75 visitors per day. This reduction in the number of visitors would lessen encounter rates and noticeably

improve the experience of wilderness solitude. Conversion of all designated camping areas to dispersed camping would allow campers to camp away from other groups and increase the experience of solitude.

Primitive. Compared to other alternatives, the lower quotas and elimination of the Merced Lake High Sierra Camp in this alternative will mean there will be fewer opportunities to pursue activities that exhibit simplicity, self-reliance, and a lack of technology.

Unconfined Recreation. Unconfined recreation is affected by management restrictions placed on visitors once they are inside the wilderness. Under Alternative 3, the requirements set forth in the wilderness permits would reduce the ability to "recreate freely in the wilderness" and have a negligible adverse effect the quality of unconfined recreation. Day hikers not going to Half Dome do not need a permit and would continue to have the greatest opportunity for unconfined recreation.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, moderate, beneficial impacts on wilderness experience within Segment 1.

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

Under Alternative 3, the park would eliminate most of the facilities, infrastructure, and activities that affect wilderness character, reduce Little Yosemite Valley wilderness zone capacity by 50%, reduce stock use, and remove the Merced Lake High Sierra Camp, restore the area and designate it as wilderness while providing a temporary pack camp. Together, with implementation of mitigation measures MM-NOI-1 through MM-NOI-3 and MM-VEX-1 through MM-VEX-2, as applicable (see Appendix C), these actions would have a local, long-term, moderate, beneficial impact on wilderness character in Segment 1. Alternative 3 would have no impact on wilderness character in Segment 5.

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

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions under Alternative 3. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

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

Management measures for the Yosemite wilderness in Alternative 3 would improve the untrammeled, natural, and undeveloped wilderness qualities by removing the Merced Lake High Sierra Camp and infrastructure, converting designated camping areas to dispersed camping, reducing infrastructure, and reducing stock use. Reducing the number of wilderness visitors increases opportunities for solitude. Planned present and future actions would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures outlined for Alternative 3 in conjunction with past, present, and reasonably foreseeable future projects would be segmentwide (in Segments 1 and 5), long term, moderate, and beneficial.

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

Segment 1: Merced River Above Nevada Fall

Biological resource actions under Alternative 4 include removing the Merced Lake East Meadow from grazing permanently, and requiring all administrative pack stock passing through the Merced Lake area to carry pellet feed. This action would have no impact on the untrammeled, undeveloped, primitive, or unconfined qualities of the wilderness experience. Removal of grazing on Merced Lake East Meadow would benefit the natural quality of the meadow. However, stock will still be present on the trails and in the vicinity of Merced Lake. This action would improve the natural quality of the wilderness in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 4, a number of actions are proposed to manage visitor use and facilities including:

- Decrease the designated camping area at Little Yosemite Valley; retain composting toilet.
- Expand Merced Lake Backpackers Camping Area, which is designated camping, into the area of former Merced Lake High Sierra Camp; replace flush toilets with composting toilet and remove septic system.
- Close Merced Lake High Sierra Camp and restore the area to natural conditions. Area would be converted to designated Wilderness.
- Continue designated camping at Moraine Dome.
- Manage to a capacity of 100 in the Little Yosemite Valley Zone using a zone quota or zone pass through system. All other zone capacities within the Merced WSR Corridor remain the same.
- Allow private boating, with use limited to 5 boats per day with backcountry permit.

Impacts of these actions on wilderness character include:

Untrammeled. Under Alternative 4, restoration activities required at Merced Lake High Sierra Camp would have a short-term, negligible, adverse impact on the untrammeled character of the wilderness due to the control and manipulation required to restore this area. Over the long-term, removal of the High Sierra Camp and reduction in zone quotas for the Little Yosemite Valley Zone would benefit the untrammeled character of Segment 1.

Undeveloped. Under Alternative 4, the permanent and semi-permanent improvements in Segment 1, including the concrete foundations and permanent structures at Merced Lake High Sierra Camp, would be removed. These actions would improve the undeveloped quality of the wilderness in Segment 1.

Natural. Under Alternative 4, the removal of facilities and infrastructure at Merced Lake High Sierra Camp, a small decrease in designated camping, and the reduced number of visitors would improve the natural character of Segment 1. The retention of most designated camping areas would have more concentrated human impacts than Alternatives 2 and 3. However, retaining composting toilets would be beneficial to the natural quality of the wilderness. Under Alternative 4, concessioner stock use would be eliminated due to the removal of the Merced Lake High Sierra Camp. Administrative trail crew stock use would be substantially reduced as trails would require less frequent maintenance due to the removal of the High Sierra Camp. The reduction in stock use would improve the natural character of the wilderness due to

reduced introduction of non-native species by stock and reduction of meadow grazing which would improve the natural condition of the meadows.

Solitude. Under Alternative 4, the capacity of the Little Yosemite Valley zone would be reduced by 33%, from 150 to 100 visitors per day. This would improve the opportunity for solitude for wilderness visitors in Segment 1. However, because most of the designated camping areas are being retained, Alternative 4 would be less beneficial to wilderness solitude than Alternatives 2 and 3.

Primitive. Compared to other alternatives, the lower quotas in this alternative and elimination of the Merced Lake High Sierra Camp will mean there will be fewer opportunities to pursue activities that exhibit simplicity, self-reliance, and a lack of technology.

Unconfined Recreation. Unconfined recreation is affected by management restrictions placed on visitors once they are inside the wilderness. Under Alternative 4, the requirements set forth in the wilderness permits would reduce the ability to "recreate freely in the wilderness" and have a negligible adverse effect on the quality of unconfined recreation. Day hikers not going to Half Dome do not need a permit and would continue to have the greatest opportunity for unconfined recreation.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, minor, beneficial impacts on wilderness experience within Segment 1.

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

Under Alternative 4, the park would eliminate most of the facilities, infrastructure, and activities that affect wilderness character, reduce by 33% the capacity of the Little Yosemite Valley zone, and remove all infrastructure and facilities at Merced Lake High Sierra camp restore the area and designate it as wilderness. Together, with implementation of mitigation measures MM-NOI-1 through MM-NOI-3 and MM-VEX-1 through MM-VEX-2, as applicable (see Appendix C), these actions would have a segmentwide, long-term, minor, beneficial impact on wilderness character in Segment 1. Alternative 4 would have no impact on Segment 5.

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

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions under Alternative 4. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

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

Management measures for the wilderness in Alternative 4 would improve the natural and undeveloped wilderness qualities by removing and restoring the Merced Lake High Sierra Camp. The number of wilderness visitors would be reduced, which increases opportunities for solitude. Planned present and future actions would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures under Alternative 4 in conjunction with past,

present, and reasonably foreseeable future projects would be segmentwide (in Segments 1 and 5), long term, minor, and beneficial.

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

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological resource actions under Alternative 5 include developing preliminary grazing capacities for the Merced Lake East Meadow by limiting grazing to 58 grazing nights/year. When the meadow recovers, NPS would allow administrative grazing at established capacities, monitor annually for five years, and adapt use levels as needed. This action would have no impact on the untrammeled, undeveloped, primitive, or unconfined qualities of the wilderness experience. Initially this action would have the same impact on the natural quality of the wilderness as Alternative 2 – grazing would be removed from the meadow but the stock would continue to be present in the same numbers on the trails and elsewhere in the Merced Lake area. Allowing the meadow to recover and then monitoring and adapting grazing levels would benefit the natural quality of the wilderness in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 5, actions to manage visitor use and facilities include:

- Continue designated camping at Little Yosemite Valley camping area. Retain infrastructure, including the composting toilet.
- Retain location of the Merced Lake Backpackers Camping Area as a designated camping area. Replace flush toilets with composting toilet.
- Retain the Merced Lake High Sierra Camp, reducing the capacity to 42 beds. Establish a limit of 7.5 pack strings-per-week (for an average of 30 strings per month) for resupply for each season. Replace the flush toilets with composting toilet.
- Continue designated camping at Moraine Dome.
- Retain all existing wilderness zone capacities within the Merced WSR Corridor.
- Allow private boating, with use limited to 20 people per day with backcountry permit

Impacts of these actions on wilderness character include:

Untrammeled. Under Alternative 5, the minor restoration activities due to the reduction in the size of Merced Lake High Sierra Camp would benefit the untrammeled character of the wilderness. At the same time, many of the visitor-related impacts occurring under existing conditions would continue within this segment as the number of visitors to these areas, as determined by zone capacities, would not be appreciably different from those under Alternative 1.

Natural. Under Alternative 5, the natural character of Segment 1 would be similar to that in Alternative 1 (No Action) due to the retention of most of the manmade facilities and visitation remaining at levels similar to existing conditions within in Segment 1.

Undeveloped. Under Alternative 5, Merced Lake High Sierra Camp would experience a reduction in the number of beds, from 60 to 42 beds. The amount of needed infrastructure, food, and supplies would also be reduced, thus lessening the number of trips required to stock the camp. Retention of the Merced Lake High Sierra Camp would prevent this area from receiving a wilderness designation unless and until the high camp was removed. This alternative would also require retention of the existing septic system to support showers and dishwashing. Alternative 5 also retains designated camping and infrastructure at the Little Yosemite Valley and Merced Lake camping areas. Compared to no action, Alternative 5 would have negligible effects on the overall undeveloped quality of the wilderness in Segment 1.

Solitude. Under Alternative 5, the capacity of the Little Yosemite Valley wilderness zone would remain at the current level of 150 visitors per day; designated camping would remain in all three camping areas; and the High Sierra Camp would only be reduced by 18 beds. Opportunities for solitude would not noticeably change in Segment 1.

Primitive. Under Alternative 5, opportunities for primitive recreation would remain abundant, due to the retention of the designated camping areas at their existing capacities and the Merced Lake High Sierra Camp at a capacity that is 70% of the existing.

Unconfined Recreation. Unconfined recreation is affected by management restrictions placed on visitors once they are inside the wilderness. Under Alternative 5, the requirements set forth in the wilderness permits would reduce the ability to "recreate freely in the wilderness" and have a negligible adverse effect on the quality of unconfined recreation. Day hikers not going to Half Dome do not need a permit and would continue to have the greatest opportunity for unconfined recreation.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on wilderness experience within Segment 1.

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

Alternative 5 actions in Segment 1 would retain all three designated camping areas at their current size and configuration, and reduce the capacity of the Merced Lake High Sierra Camp by 18 beds. Stock use in the wilderness would be retained to serve the High Sierra Camp and maintain the trails, and the capacity of the Little Yosemite Valley zone would remain at 150 visitors per day, thus maintaining current trail quotas for this zone. Compared with Alternative 1 (No Action), Alternative 5 would include actions that together with implementation of mitigation measures MM-NOI-1 through MM-NOI-3 and MM-VEX-1 through MM-VEX-2, as applicable (see Appendix C), would have a local, long-term, negligible to minor, beneficial impact on the untrammeled, natural, and undeveloped character of wilderness. Opportunities for wilderness solitude or primitive and unconfined recreation would remain unchanged. Under Alternative 5, no actions would affect Segment 5.

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

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of the actions in Alternative 5. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

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

Management measures for the wilderness under Alternative 5 include reducing the Merced Lake High Sierra Camp capacity, establishing a limit on stock use to the camp, maintaining the three existing Segment 1 designated camping areas, and maintaining the current wilderness quotas. Planned present and future actions would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures under Alternative 5, in conjunction with past, present, and reasonably foreseeable future projects, would be segmentwide (in Segments 1 and 5), long term, negligible to minor, and beneficial. Displacement of visitors or commercial operators would not be appreciable under this alternative.

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

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Biological resource actions under Alternative 6 include developing preliminary grazing capacities for the Merced Lake East Meadow. When the meadow recovers, NPS would allow administrative grazing at established capacities, monitor annually for five years, and adapt use levels as needed. This action would have no impact on the untrammeled, undeveloped, primitive, or unconfined qualities of the wilderness experience. Initially this action would have the same impact on the natural quality of the wilderness as Alternative 2 – grazing would be removed from the meadow but the stock would continue to be present in the same numbers on the trails and elsewhere in the Merced Lake area. Allowing the meadow to recover and then monitoring and adapting grazing levels would benefit the natural quality of the wilderness in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 6, actions to manage visitor use and facilities are similar to Alternative 1 (No Action) and include:

- Continue designated camping at Little Yosemite Valley camping area. Retain infrastructure, such as composting toilet.
- Retain location of the Merced Lake Backpackers Camping Area as a designated camping area. Replace flush toilets with composting toilet.
- Retain the Merced Lake High Sierra Camp, keeping 22 units (60 beds). Establish a limit of 7.5 pack strings-per-week (for an average of 30 strings-per-month) for resupply for each season. Replace the flush toilets with composting toilet.
- Continue designated camping at Moraine Dome.
- Retain all existing wilderness zone capacities within the Merced WSR Corridor.
- Allow private boating, with use limited to 10 people per day with backcountry permit

Impacts of these actions on wilderness character include:

Untrammeled. Under Alternative 6, the effects on the untrammeled quality of Segment 1 would be similar to Alternative 1 (No Action) as NPS activities would remain at similar levels, along with visitor use and associated impacts.

Natural. Under Alternative 6, the natural character of Segment 1 would be similar to that in Alternative 1 (No Action) due to the retention of all of the manmade facilities and visitation remaining at levels similar to existing conditions within Segment 1. However, restoration actions that are common to all action alternatives would occur, so Alternative 6 would benefit natural processes in the Yosemite Wilderness.

Undeveloped. The effects of Alternative 6 on the undeveloped quality of the wilderness are similar to Alternative 1 (No Action). All of the existing facilities, infrastructure, and designated camping areas would be retained, resulting in a level of development very similar to what exists today. A septic system would be retained at the High Sierra Camp in order to support showers and dishwashing. The same amount of use of machinery and equipment would be necessary. Retention of the Merced Lake High Sierra Camp would prevent this area from being added to the Yosemite wilderness. Alternative 6 would result in no change to the undeveloped character of the wilderness in Segment 1.

Solitude. Under Alternative 6, the capacity of the Little Yosemite Valley wilderness zone would remain at the current level of 150 overnight visitors per day and all designated camping areas would remain. Under Alternative 6, opportunities for solitude would remain unchanged from Alternative 1.

Primitive. Under Alternative 6, opportunities for primitive recreation would remain abundant, due to the retention of the designated camping areas and the Merced Lake High Sierra Camp at their existing capacities.

Unconfined Recreation. Unconfined recreation is affected by management restrictions placed on visitors once they are inside the wilderness. Under Alternative 6, the requirements set forth in the wilderness permits would reduce the ability to "recreate freely in the wilderness" and have a negligible adverse effect on the quality of unconfined recreation. Day hikers not going to Half Dome do not need a permit and would continue to have the greatest opportunity for unconfined recreation.

Segment 1 Impact Summary: Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, beneficial impacts on wilderness experience within Segment 1.

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

Under Alternative 6, the wilderness character would remain much the same as it is today. The Merced Lake High Sierra Camp, designated camping areas and supporting infrastructure would be similar to today. The Little Yosemite Valley wilderness zone capacity would remain the same as under Alternative 1 (No Action), and pack stock would continue to access the wilderness. Therefore, Alternative 6 would improve wilderness character slightly but not to the extent it would be improved with Alternatives 2 and 3. Alternative 6 with implementation of mitigation measures MM-NOI-1 through MM-NOI-3 and MM-VEX-1 through MM-VEX-2, as applicable (see Appendix C), would have a local, long-term, negligible, beneficial impact on wilderness character in Segment 1. Alternative 6 would not affect wilderness character in Segment 5.

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

Cumulative effects on wilderness character are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of Alternative 6. The past, present, and reasonably foreseeable projects are the same as listed for Alternative 1 above.

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

Management measures for the Wilderness in Alternative 6 would be similar to those that exist currently. The Merced Lake High Sierra Camp, stock use, designated camping areas, and wilderness quotas would not change. Planned present and future actions would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures under Alternative 6, in conjunction with past, present, and reasonably foreseeable future projects, would be segmentwide (in Segments 1 and 5), long term, negligible, and beneficial. Displacement of visitors or commercial operators would not be appreciable under this alternative.

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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 makings 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; Yosemite Medical Clinic; 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, open-air tram tours, and the Park VIP Program. 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, and the operation and staffing of all park campgrounds and entrance stations. 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; and galleries. 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, campground offices and kiosks, employee housing, 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 eight beds reserved for administrative staff.

Segment 2A (East Valley). Over the years, a considerable amount of that demand for employee housing was met through development of employee housing within the East Yosemite Valley. As shown in Table 9-113, the vast majority of park and concessioner employee housing within the Merced River corridor is found in East 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.

TABLE 9-113: EXISTING CONCESSIONER HOUSING WITHIN YOSEMITE VALLEY

Location	Capacity (beds)
Yosemite Village	431
The Ahwahnee Hotel	48
Curry Village	582
Yosemite Lodge	90
Total	1,151

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 104 and 80, respectively. There are also 36 employee beds in the Abbieville/Trailer Court Village 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 2a, 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. 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 Tuolumne Meadows. 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 of potable water 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 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 geologic and hydrologic 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 (582 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 411 beds would continue to be occupied by park or concessioner employees, fulfilling existing demand within Segments 3 and 4. Among those units, Abbieville and the Trailer Village would continue to provide housing in close proximity to the park. 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 Appendix B.

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.
- Implementation of the *East Yosemite Valley Utilities Improvement Plan* allows efficient relocation and upgrading of utility systems to provide for utility needs while reducing long-term environmental impacts from utility repair and maintenance activities. Construction of phase 1 of the improvement began in 2005 and has been ongoing with implementation of the utility improvements occurring in three phases over 10 years.

Present Actions

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

- 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.
- 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.

Other ongoing planning efforts that could have an effect on park operations and facilities within the park are summarized below, and described more fully in Appendix B.

- *Tuolumne Wild and Scenic River Comprehensive Management Plan*. Seasonal, temporary NPS staffing and housing needs will be affected by utility upgrades, reductions in commercial stock use and associated trail maintenance by the NPS and improvement project such as the planned elimination of some roadside parking spaces. In the balance, however, housing needs will increase by staffing needs for the user capacity management program, enforcement of parking regulations, implementation of the ecological restoration program and projects, site restoration, maintenance and visitor roadside assistance.

- Seasonal, temporary housing supply will increase to serve the needs of 163 employees, with a maximum 133 units to be provided at Tuolumne Meadows and a proposed temporary labor camp of up to 60 units at Gaylor Pit. 101 beds are currently provided for concessioner employees at Tuolumne Meadows Lodge and 2 at the concessioner stable.
- Administrative and maintenance facilities would be consolidated at the existing Civilian Conservation Corps mess hall and at the wastewater treatment facility, reducing travel distance and improving efficiency of operations. Visitor service facilities, including a visitor center and wilderness center, would remain separate.
- The preferred alternative would provide a comparable level of facilities and services when compared to the no-action alternative, though staffing requirements would increase temporarily to conduct restoration activities.
- *Restoration of Mariposa Grove Ecosystem Project*. The annual costs of maintaining dispersed facilities and aging infrastructure would be reduced under the preferred alternative. Although the long-term costs in operating and maintaining the proposed shuttle system, the parking facility and restrooms would shift to new locations, these costs would be reduced by the consolidation of visitor use facilities in one larger site, the use of new materials that have a longer life span, and the employment of best management practices intended to address issues such as transportation demand, visitor use and waste management, and site drainage.
- Park operations are described by the draft EIS as sustaining temporary, short-term, and minor adverse impacts. Staff time would have to be allocated to coordinate construction activities and manage visitor use. Construction vehicles and traffic delays would disrupt traffic patterns, parking and visitor activities.
- Visitor services and interpretive programs would be consolidated near the South Entrance Station, removing overflow parking demand from the Merced River corridor. Transit service would be reduced between the Mariposa Grove and Wawona Store, eliminating several shuttle runs per day while shifting shuttle operations to the use of more frequent, shorter-distance shuttle bus trips between the South Entrance and Lower Mariposa Grove. The annual operating cost would be comparable to that of providing for current shuttle service costs.
- A proposed elimination of tram service would reduce annual profits for the park concessioner, even though tram service carries high operational costs and the revenue is a very small percentage of the annual profits that accrue to the park concessioner.
- No employee housing or guest accommodations are currently provided at the Mariposa Grove, and none are proposed.

Reasonably Foreseeable Future Actions

The following is a list of cumulatively notable, 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.
- *Wilderness Stewardship Plan*. A nascent planning effort will focus on issues such as commercial services and commercial stock use, limitations on visitor use and the disposition of High Sierra Camps in Yosemite Wilderness, which comprises 94 percent of the park. Federally-designated wilderness areas overlap substantial amounts of both the Merced and Tuolumne River corridors. The Wilderness Stewardship Plan will take the amount of existing development into consideration, and has the potential to remove unnecessary or obsolete uses or development. Under the Wilderness Act, no further development of facilities, guest accommodations or administrative support facilities (such as park housing) will be permitted. Park employees will continue to have

access to wilderness for purposes of law enforcement, search and rescue, maintenance of existing facilities, and to conduct research and restoration activities. Administrative uses and employee access comprise a modest amount of visitation in wilderness, and administrative uses will either remain the same or decrease, but are not expected to increase in the future.

- *Camp Wawona Expansion*. Mariposa County has received an application for upgrades to Camp Wawona, a 30-acre camp, which for 75 years has been owned and operated by the Central California Conference of the Seventh-Day Adventist Church. The camp is located on privately-owned property within Section 35 – an area of Wawona within the park boundary, under the management authority of Mariposa County. Under agreement between NPS and Mariposa County, planning and development decisions in Section 35 are governed by the Wawona Town Planning Area Specific Plan, last updated in January of 2012 (see Appendix B for additional discussion of land use planning and development jurisdiction in this area). The Camp proposes a 20-year redevelopment plan that includes replacing or expanding the existing camp facilities, modifying necessary planning policies and designations to resolve inconsistencies within the existing land use plan, and maintaining an effective buffer between the developed camp facilities and operations and the designated Yosemite Wilderness Area. Facility improvements proposed under the redevelopment plan, which is generally consistent with the provisions of the Specific Plan, would effectively extend the life of the Camp, but would not provide for increases in the numbers of camp visitors.
- 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. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, including utilities and emergency services. 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 parkwide, 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, 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, Highland Court, Huff House, and Boys Town.

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 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.

Yosemite Village Day-use Parking Area 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. Select Housekeeping Camp units would be removed. The park would also construct a new maintenance building near the Government Utility Building. Roadside parking along Sentinel Drive would be removed and Yosemite Village day-use parking expanded into the footprint of the Concessioner Garage. To improve visitor access between the day-use parking area and Village, the park would construct a pathway connecting the new 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.

Camp 4 and Yosemite Lodge. The park would remove the NPS Volunteer Office, post office, 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 Nature 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 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 later in this document, in the context of the respective alternatives.

Under each alternative, the park would construct infill housing in El Portal Town Center and remove or relocate 36 private residences in Abbieville and Trailer Village. The removal or relocation of residences from the Abbieville and Trailer Village area of El Portal would slightly reduce the supply of housing in close proximity to the park. In the absence of such housing, some employees may have to travel farther from the park to find housing if additional housing is not constructed in other areas (as proposed under Alternatives 2, 4, 5, and 6). 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 removal, 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 Yosemite Village day-use parking and rerouting a portion of Northside Drive; demolishing 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.

Despite the addition of new units at Huff House (164), 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 Yosemite Village, and 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 remove the Ahwahnee swimming pool and 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.

Yosemite Village Day-use Parking Area 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 reconfigure the on-grade pedestrian crossing between Camp 4 and Yosemite Lodge. The park would convert the Highland Court area to a walk-in campground; relocate the Superintendent's House (Residence 1) to the NPS housing area; reconfigure the pedestrian crossing of Northside Drive and Yosemite Lodge Drive, remove the Yosemite Lodge swimming pool, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour buses. 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 Town Center. This would increase the total number of concessioner-assigned housing units within El Portal from 220 to 599. 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. The implementation of the *East Yosemite Valley Utilities Improvement Plan* has further reduced demands for park utilities. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, such as wastewater treatment capacity. 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 within 150 feet of the river 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 Yosemite Village day-use parking; demolishing 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.

Despite the addition of new units at Huff House (164) and Yosemite Lodge (104), 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 develop a new RV campground loop (36 spaces) at Upper Pines and would remove campsites from Lower Pines (15), North Pines (34), and Upper Pines (2). In addition, the park would remove the Ahwahnee swimming pool and 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.

Yosemite Village Day-use Parking Area 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 the on-grade pedestrian crossing to west of the Northside Drive and Yosemite Lodge Drive, relocate the Superintendent's House (Residence 1) to the NPS housing area, relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three buses, remove the Yosemite Lodge swimming pool, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour buses. 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 be constructed in El Portal Town Center. The park would also remove units from Abbieville/Trailer Court. Total concessioner-assigned housing units within El Portal would decrease from 220 to 205. These actions would have an adverse impact on new and existing employees of El Portal because they would reduce housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would decrease 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; while the opposite would be the case for the law enforcement and emergency medical services required to accommodate the resulting decrease 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. Under Alternative 3, demands for administrative space, utilities, and housing would be expected to decrease parkwide. However, with the proposed shift in 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 1, 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, the implementation of the *East Yosemite Valley Utilities Improvement Plan* has further reduced demands for park utilities. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, including utilities and emergency services. 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 within 150 feet of the river 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 Yosemite Village day-use parking; placing large wood and engineered logjams along the base of Stoneman Bridge; demolishing 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 a 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.

Despite the addition of new units at Huff House (164), Lost Arrow (50), and Yosemite Lodge (104), 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. While overnight visitation would increase, the net reduction in visitation and relocation of employee housing outside of the corridor 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 develop new campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51) and a new RV campground loop (36). The park would remove campsites from Lower Pines (15), North Pines (34), and Upper Pines (2). In addition, the park would remove the Ahwahnee swimming pool and 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.

Yosemite Village Day-use Parking Area 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 relocate the existing bus drop-off area to the Highland Court area to accommodate loading/unloading for three buses, relocate the Superintendent's House (Residence 1) to the NPS housing area, remove the Yosemite Lodge swimming pool, and redevelop an area west of Yosemite Lodge to provide an additional parking for 150 automobiles and 15 tour buses. Potential solutions to the pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area would be addressed in a tiered NEPA/NHPA compliance effort. 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, campsites, and remote day-use visitor parking 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 be constructed in El Portal Town Center. The park would also remove units from Abbieville/Trailer Court. This would decrease the total number of concessioner-assigned housing units within El Portal from 220 to 190. These actions would have an

adverse impact on new and existing employees of El Portal because they would reduce housing opportunities in an area of high demand.

Demand for utilities and administrative space within Segment 4 would decrease 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; while the opposite would be the case for the law enforcement and emergency medical services required to accommodate the resulting decrease 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 facilities from the valley to El Portal, the latter would experience an 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 1, 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, implementation of the *East Yosemite Valley Utilities Improvement Plan* has further reduced demands for park utilities. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, including utilities and emergency services. 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 day use capacity management system. The system would include use of the El Capitan Cross-over Traffic Diversion system, under which the maximum number of people at one time (PAOT) in East Yosemite Valley would be limited to 18,710 (managed through 5,318 vehicles at one time and 40 busses at one time). In addition, the park could also consider implementing a day-use parking reservation system if the traffic diversion at El Capitan Cross-over is no longer sufficient or reasonable to manage the level of use experienced in East Yosemite Valley. Development, implementation, and maintenance of these systems would have a long-term, minor to moderate, adverse impact on park operations. Management of the systems would require a long-term commitment of staff time and resources. However, once the programs were 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 beds 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 opportunities for camping within the Merced River corridor's wilderness. Designated camping at Moraine Dome, Little Yosemite Valley Backpackers and Merced Lake Backpackers Campgrounds would remain, along with an ability to camp in open wilderness (subject to existing restrictions and permit requirements). The long-term impact associated with maintenance of these 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 boardwalks in meadows. 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 Meadow; installing culverts beneath Northside Drive; reconfiguring the Curry Orchard parking lot; removing campsites within 100 feet of the river 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 Yosemite Village day-use parking; 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. Under Alternative 5, the Sugar Pine Bridge would remain in place for the near term. The park would commission a third party study concerning hydrologic impacts of the bridge. Along with this information, the park would evaluate the cultural, physical, biological, and operational/economic tradeoffs associated with retention versus removal of the bridge. A decision regarding whether to remove the bridge would be made within three years of the Record of Decision on this EIS. The work associated with bridge removal would involve 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 4% decrease in daily Yosemite Valley visitation, from approximately 20,900 under Alternative 1 to 20,100. Daytime visitation would decrease by nearly 561 (4%). However, due largely to increases in lodging and campground facilities, overnight visitation would increase by about 1,400(18%). 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 5% 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 1,082. 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 park operations associated with managing and maintaining these facilities.

Despite the retention of some units at Huff House (24), and the addition of permanent units at Lost Arrow (87) and Yosemite Lodge (104), concessioner employee housing within the valley would be reduced by 25%—from 1,151 beds to 869 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 available housing in the Valley, 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 new units at Boys Town, bringing the total number of new and retained units at Curry Village to 482. The NPS would develop new walk-in and pull-through campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51), and a new RV campground loop at Upper Pines (36).The NPS would remove campsites from Lower Pines (5), North Pines (14), and Upper Pines (2 for archeological resource concerns). In addition, the park construct a new 189 space Recreation Center parking facility and 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. The addition of new facilities would have a parkwide, long-term, negligible, adverse impact on park operations through increased maintenance and management burdens.

Yosemite Village Day-use Parking Area and Yosemite Village. A total of 34 lodging units would be removed from Housekeeping Camp and 232 lodging units would be retained. The park would construct a roundabout at the intersection of Northside and Village Drives, provide walkways leading to Yosemite Village, 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. Essential functions of the removed Concessioner General Office would be infilled into a remodeled Concessioner Maintenance and Warehouse Building with a 5,000 square-foot addition outside the River corridor. 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 remove temporary employee housing units and return the site to parking purposes, as originally built, demolish the Superintendent's House (Residence 1) and garage; and redevelop an area west of Yosemite Lodge to provide an additional parking for 300 automobiles and 22 tour buses. Potential solutions to pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area would be addressed in a tiered NEPA/NHPA compliance effort. The planning, design, contracting, monitoring, restoration, and maintenance associated with these activities would require further consultation and 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, campsites, and remote visitor parking 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 medium- and high-density concessioner 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. The park would also remove units from Abbieville/Trailer Court. Total concessioner-assigned housing units within El Portal would increase from 220 to 320 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. An El Portal Remote Visitor Parking Area would be developed in the Abbieville/Trailer Village area to provide 300 spaces (within the proposed development footprint) of visitor parking serviced by a seasonally-available shuttle to Yosemite Valley. Forty RV campsites with hook-ups would be incorporated into the redesign of the Abbieville/Trailer Village area adjacent to the El Portal Remote Parking Area. These campsites would be used for both visitors and administrative use (for seasonal employee housing).

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

Cultural Resource Actions. Specific projects to protect and enhance the river's cultural 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 remain the same under Alternative 5, with planned improvements to infrastructure. In addition, the new facilities for maintenance and firefighting staff operations proposed for Alternatives 2–6 would 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, the NPS would restore natural resources 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 management system, and increase Yosemite Valley parking capacity. The NPS would increase the number of lodging units (5%) and campsites (37%) within the valley. Nonetheless, overall valley visitation would fall under Alternative 5 by an estimated 4%, 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, demand 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 1, 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 benefit from past and present habitat restoration and resource management projects and plans.

As previously noted, implementation of the *East Yosemite Valley Utilities Improvement Plan* made park utilities more reliable and efficient. Nonetheless, the burdens of managing operations for high levels of visitation would continue to have a visible impact on park operations. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, including utilities and emergency services. 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 NPS would implement a phased, adaptive day-use traffic and parking management program, utilizing fee structures, transit service expansion, managed access and diversions through eventual 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 within 100 feet of the river 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 Yosemite village day-use 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.

Despite the addition of new units at Huff House (164), Lost Arrow (50), and Yosemite Lodge (104), 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 develop new campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51) and a new RV campground loop (36), 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.

Yosemite Village Day-use Parking Area and Yosemite Village. The park would construct a pedestrian underpass a traffic circle and a roundabout, 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 with a 5,000 square foot addition 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 relocate the existing bus drop-off area to the Highland Court **area to** accommodate loading/unloading for three buses, retain the Superintendent's House (Residence 1), 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 buses. Potential solutions to pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area would be addressed in a tiered NEPA/NHPA compliance effort. 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.

Farther to the west, the park would construct a new campground west of El Capitan Picnic Area, and a new remote parking lot south of Southside Drive. The camping area would include parking for 79 vehicles and the West Valley Parking Area would accommodate up to 250 vehicles. Shuttle service would be expanded to the West Valley. The planning, design, construction, 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. However, long-term maintenance of the campground would require additional staff time, resulting in a parkwide, negligible, adverse effect on park operations.

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 campsites, and remove visitor parking 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 Town Center. The park would also remove units from Abbieville/Trailer Court. Total concessioner-assigned housing units within El Portal would increase from 220 to 488. 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 1, 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, implementation of the *East Yosemite Valley Utilities Improvement Plan* has further reduced demands for park utilities. Improvements to Camp Wawona would extend the life of the facility; but because total camp visitation would not increase, these changes would have a negligible effect on park operations or facilities, including utilities and emergency services. 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.

Transportation

Affected Environment

Regulatory Framework

Management Policies 2006

The National Park Service (NPS) *Management Policies 2006*, the basic service-wide policy document of the NPS, establishes provisions for management of a wide range of activities within the park. Transportation-related topics addressed include the management of roads, traffic, parking, trails, bicycle paths, and many others. For example:

- Park roads will be well-constructed, sensitive to natural and cultural resources, reflect the highest principles of park design, and enhance the visitor experience. Before roads are chronically at or near capacity, the use of alternative destination points or transportation systems or limitation on use will be considered as alternatives to road expansion.
- All trails and walks will be carefully situated, designed, and managed to
    - reduce conflicts with automobiles and incompatible uses;
    - allow for a satisfying park experience;
    - allow accessibility by the greatest number of people; and
    - protect park resources.
- Parking areas and overlooks will be located to not unacceptably intrude, by sight, sound, or other impact, on park resources or values. When parking areas are deemed necessary, they will be designed to harmoniously accommodate motor vehicles and other appropriate users. Permanent parking areas will not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use.

Yosemite General Management Plan

The 1980 *General Management Plan* for Yosemite National Park establishes general management planning and policy direction for the park. The document sets forth specific management goals, including markedly reducing traffic congestion, among others. In keeping with this vision, the plan sets forth specific measures intended to reduce and ultimately eliminate private automobile use within Yosemite Valley, including the removal of excess day parking spaces, improvement of the shuttle system, creation of opportunities for bicycling throughout the Valley, and enforcement of the park's automobile capacity limitations.

The Superintendent's Compendium

The *Superintendent's Compendium* sets forth park policy on a wide range of specific activities within the park, including road closures; parking restrictions; vehicle load, weight, and size limits; speed limits; and bicycling, among many other provisions under the discretionary authority of the Superintendent. With regard to traffic management, the *Superintendent's Compendium* helps guide park staff decision-making when traffic conditions reach certain threshold conditions. For example, the document states, "Visitors may enter Yosemite Valley until westbound traffic is backed-up from Lower Yosemite Falls to Curry Village Four-Way intersection or all day use parking spaces have been filled, and/or the 18,241-person capacity has

been reached" (NPS 2011a). Other traffic management items in the *Superintendent's Compendium* include the following:

- All buses visiting Yosemite Valley, not including vans, are required to unload and pick up their passengers, and park only in areas designated by their commercial bus authorization.
- Establish vehicle load, weight, and size limits, which are more restrictive than state law, for park roads.
- Establish a 35 miles per hour (mph) maximum speed limit on park roads unless posted otherwise; specific lower maximum speed limits are established for roads under chain controls (25 mph) and for approaching or leaving all entrance station areas (20 mph).

The *Superintendent's Compendium* also sets forth park policy and regulations on commercial transportation within the park.

Roadway System and Traffic Volumes

Regional Roadway System

California state highways leading into Yosemite National Park (Highways 41, 120, and 140) transition into an internal parkwide road system at the entrance stations. Although the State of California has a road right-of-way for Highway 140 through the El Portal Administrative Site, it has no rights-of-way through the park, so there are no state highways within the park boundaries; however, state highway numbers are used on park signs to help orient visitors. Additional transportation facilities within the park consist of a series of spur roads, access drives, pedestrian trails, bicycle paths, and parking areas leading from the main roads. The park has roughly 200 miles of roads, of which about 30 miles traverse the Yosemite Valley floor. Main points of park entry are shown in Figure 9-40 and include: Arch Rock Entrance (El Portal Road/ Highway 140), Big Oak Flat Entrance (Big Oak Flat Road/Highway 120), Hetch Hetchy Entrance (Hetch Hetchy Road), South Entrance (Wawona/Highway 41), and Tioga Pass Entrance (Tioga Road/Highway 120).

Figure 9-40: Park Roadways

Yosemite's road network, outside of Yosemite Valley, is generally characterized by one travel lane in each direction. Destinations throughout the Valley are accessed through a loop, comprised primarily of Southside Drive (inbound) and Northside Drive (outbound). The loop is connected by four crossings of the Merced River, as described below. On average, park road speed limits are around 35 mph, lane widths are approximately 11 to 12 feet, and shoulder widths are roughly 0.5 feet to 2 feet. Major park roadways within the study corridors are described below (by segment), with traffic volume data recorded at fixed counter locations within the park during peak season periods.

Traffic Volumes

Traffic volumes within the park tend to be highest during the months of peak visitation, which are generally between May and September (Memorial Day to Labor Day), with July and August typically being the busiest months. Table 9-114 provides an overview of peak season traffic volumes in 2011 at the park's entrance stations.

TABLE 9-114: MONTHLY INBOUND VEHICLE TRAFFIC VOLUMES (IN 2011) AT PARK ENTRANCE STATIONS

Entrance Station	May		June		July		August		September	
	Total	%	Total	%	Total	%	Total	%	Total	%
Arch Rock	44,950	32	56,213	29	59,327	22	54,471	21	44,896	23
Big Oak Flat	40,870	30	60,856	32	75,667	29	66,429	25	50,263	26
Hetch Hetchy	5,312	4	6,475	3	5,360	2	3,892	1	3,194	2
South	47,396	34	54,693	29	76,212	29	69,499	27	49,486	25
Tioga Pass	0	0	13,200	7	48,050	18	66,650	26	48,000	24
Total	**138,528**	**100**	**191,437**	**100**	**264,616**	**100**	**260,941**	**100**	**195,839**	**100**
SOURCE: NPS 2011m										

Park traffic is comprised mainly of park visitors, and park employees (many of whom live along the Highway 140 corridor). As is evident from Table 9-154, vehicle entries are generally evenly spread among the entrance stations except for the Hetch Hetchy Entrance, which is the only entrance not directly accessible from a state highway and not connected to the park's broader road network. In 2011, traffic was heaviest in July, with the largest number of vehicles entering through the South Entrance. The Tioga Pass is closed seasonally due to snow, generally from November to May. This explains the absence of Tioga Pass traffic data for May, as well as that month's comparatively low traffic volume.

The vast majority of park visitors arrive by private automobile. A summer of 2007 park visitor survey (White and Aquino 2008) found that 84.4% of respondents arrived by private automobile. Other modes included commercial tour bus (4.8%), recreational vehicle (3.2%), and regional bus transit (1.3%). Among those who entered the park by private vehicle, nearly 87% traveled through the park in their private vehicle at least part of the time. However, more than 60% of these visitors also traveled via the Yosemite Valley Shuttle. Despite the attractiveness of the public transportation system, the prominence of private vehicle use among visitors creates complex traffic management challenges for park staff, especially on busy summer days.

Traffic volumes fluctuate seasonally, daily, and hourly within the park. As noted previously, traffic tends to be heaviest during the summer, between May and September. However, visitation patterns also vary based on day of the week and time of day, with traffic volumes in the park higher during weekends than on weekdays. Similarly, visitor travel to and from the park results in daily traffic peaks beginning in the late morning and lasting through early evening. While these fluctuations are seen throughout the park, their implications for Merced River management tend to be most pronounced within the Yosemite Valley area (Segment 2). Planning for management activities and facilities where peak conditions are significantly different from average typically applies the concept of design conditions, which address typically busy days during the peak season, but not the day with the highest visitation.

The park typically experiences the highest traffic volumes on weekends during the summer, with peak volumes occurring during holiday weekends. During the peak season of 2011 (Memorial Day weekend through Labor Day weekend), an average of 5,749 vehicles entered Yosemite Valley on Southside Drive

daily. On the busiest day (June 18), 7,345 vehicles entered the Valley; this represents an increase of 28% when compared to an average day.

Daily traffic volumes recorded at fixed counter locations within the Yosemite Valley indicate a long-term historical trend of growth in traffic. Traffic volumes leveled off and even fell slightly between 2001 and 2006. However, they have once again begun to rise and have approached historic highs (NPS 2011n). Daily traffic volumes during most of the year do not exceed the capacity of any of the major roadways. Similarly, on busy summer days, travelers on most park roads during peak travel hours encounter only minor to moderate congestion. However, at key activity areas (popular attractions, parking areas, and major intersections) within Yosemite Valley, and at the park entrance stations, moderate to major congestion occurs (RSG 2011). Disruptions to traffic flow are often attributed to excessive circulation on roadways by visitors and tour bus drivers seeking parking spaces.

To assist people in planning their trip to Yosemite, the park has a new tool (as of July 2012) to inform travelers of traffic congestion (heavy, moderate or light) in different areas of the park (Yosemite Valley, Tuolumne Meadows, Wawona and Mariposa Grove, and Glacier point). A weekly Traffic Forecast is available at the Yosemite web site's Plan Your Visit page. Travelers can also sign up to receive the forecasts via email.

Transit and Tour Bus Services

Multiple transit services operate within Yosemite, including the Yosemite Area Regional Transit System (YARTS), external tour bus operators, and concessioner-operated in-park shuttle and tour bus services. With the exception of shuttle bus services in Tuolumne Meadows and to the Mariposa Grove from Wawona, nearly all buses travel to and from or within Yosemite Valley. As discussed in the following sections, while bus visitation represents a relatively small proportion of total annual visitation, a large number of visitors to the park rely on transit between destinations within the park. Bus visitation trends are briefly discussed in the following paragraphs, followed by a description of transit services within the park.

Bus Visitation Overview

The NPS tracks the number of buses entering the park, as well as the number of visitors that arrive by bus. Figure 9-41 shows the number of visitors arriving by bus along with the number of buses entering the park for the period between 1990 and 2011 (NPS 2011m). As shown in Figure 9-41, the number of visitors traveling to the park by bus steadily increased from 1990 (258,412 visitors and 10,784 buses) to 1996 (457,896 visitors and 17,656 buses). Between 1996 through 2003, both the number of visitors arriving by bus and the number of buses dropped by more than 50%. In 2003, 200,818 visitors arrived on 7,021 buses. In the years since, both the number of buses and bus ridership has fluctuated, but generally increased. In 2011, 300,979 visitors arrived by 10,565 buses. With some variation, the pattern of visitors arriving by bus over this period generally follows the pattern for overall park visitation for this same period. In 1996, 14% of visitors to the park arrived by bus. By 2003, that number had declined to 6%. In 2011, visitors arriving by bus comprised slightly more than 7% of total visitation.

Figure 9-42 shows the percentage of annual buses as well bus visitation by month averaged over the 2000 to 2011 period. As shown in the figure, about 15% of the people who visit Yosemite by buses during an average year arrive during the peak months of August and September, respectively, with May, June, and July each accounting for 11% to 13% of annual visits by bus. Visitation by bus is lowest in the off-peak months of November through February, when combined ridership for these months constitutes just 13% of total

Figure 9-41: Bus Visitation to Yosemite National Park and Number of Buses, 1990–2011

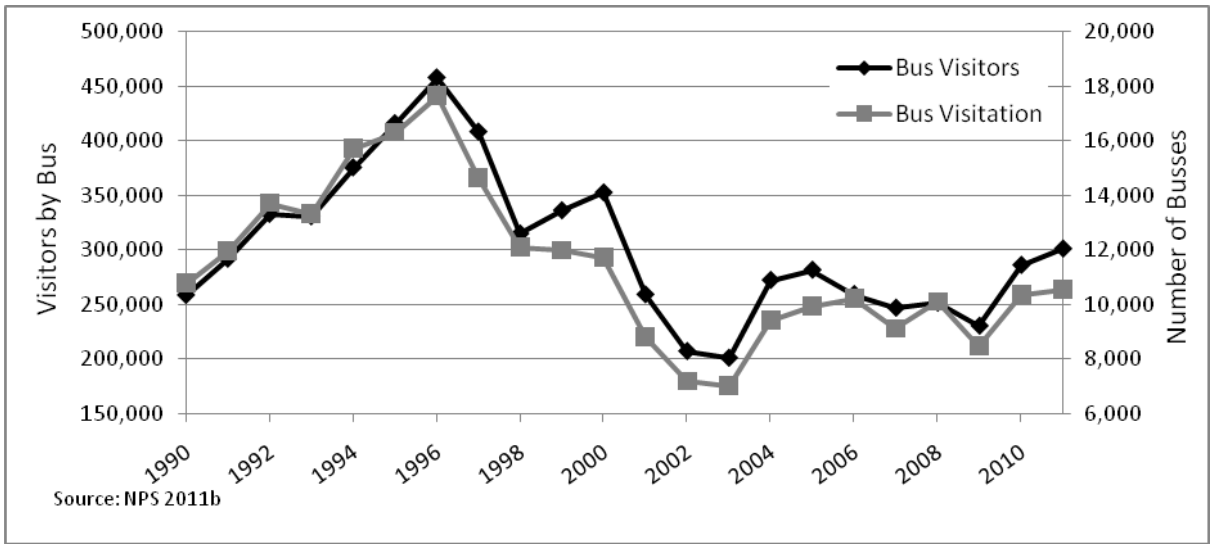
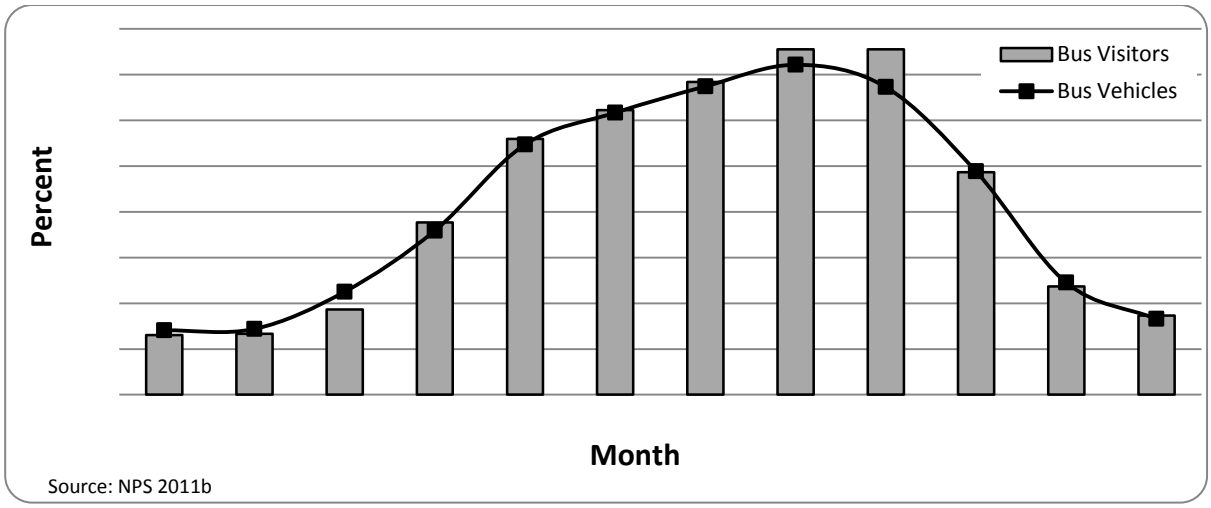


Figure 9-42: Percent of Annual Buses and Bus Visitors by Month (Ten-Year Average)



annual ridership. The monthly patterns of visitation to Yosemite by bus have remained relatively constant over the last decade (NPS 2011m).

Buses providing day tours with no overnight stay arrive at the park in mid- to late morning and depart the park in mid-to late afternoon, with duration of park visit ranging from four to six hours. Buses that bring visitors to the park for overnight stays generally follow the same routine as for day trips, the exception being that when buses arrive at Yosemite Lodge, visitors depart and check into the lodge for their overnight stay. The bus then departs with tour guests who were brought to the park one day to three days earlier and have checked out of Yosemite Lodge for a return trip back to their point of origin or to another out-of-park destination.

Regional Bus Transit

Yosemite Area Regional Transportation System

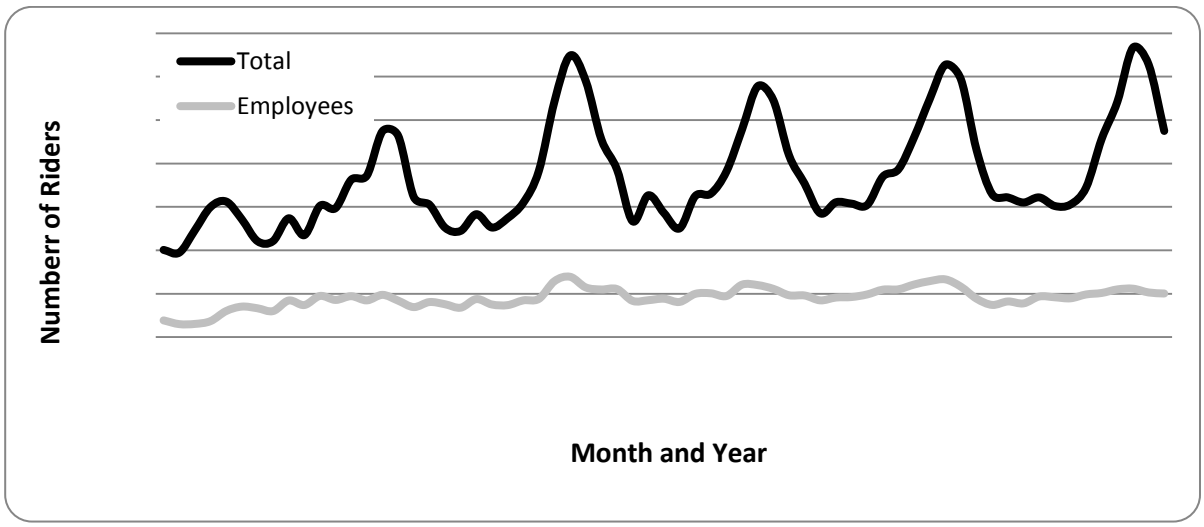
The YARTS was formed in 1999 by a Joint Powers Authority made up of the member counties of Mariposa, Merced, and Mono. YARTS provides regional bus service with four daily runs from Merced to Yosemite Valley, four daily runs from Mariposa to the Valley, and one daily run from Sonora to the Valley. Less service is provided on weekends, and more service is provided in summer, including a daily round-trip from Mammoth and points in Mono County through the Tuolumne Meadows area and connection to Valley buses. Through its connection with Amtrak, YARTS provides public transit services from San Francisco Bay Area airports, including the San Francisco, San Jose and Oakland international airports, and from the Fresno International Airport.

YARTS service began operations in 2000 in order to provide an alternative mode of transportation to and from Yosemite. The service is designed to serve the following traveling patterns:

- visitors staying in the neighboring gateway communities and visiting Yosemite
- employees along the Highway 140 corridor who work in El Portal or Yosemite
- students and employees who travel to Merced for school and/or work
- visitors who travel from Mono County to Yosemite for recreation during the summer only
- In summer 2012, YARTS added daily round trip visitor transportation services between Sonora/Jamestown, Groveland, Buck Meadows and other destinations along Highway 120 west to Yosemite Valley.

Figure 9-43 presents YARTS ridership data for employees, visitors, and others along the Highway 140 corridor from May 2006 through September 2011 (NPS 2011o). During this timeframe, the trend in overall ridership has been consistent, although distinct seasonal patterns have developed.

Figure 9-43: YARTS Ridership along Highway 140 May 2006 through September 2011



NOTE: Chart does not reflect Amtrak ridership.
SOURCE: NPS 2011o.

As is evident from the table, employee ridership remains fairly consistent throughout the year, while total ridership fluctuates dramatically based on season. Total ridership tends to be highest during peak summer months (e.g., May through September). Average peak month ridership between 2006 and 2011 ranged from 5,682 (May) to 8,696 (June). Conversely, ridership is lowest during the off-peak months (e.g., November through February). Average off-peak month ridership between 2006 and 2011 ranged from 3,689 (February) to 4,119 (December) (NPS 2011o).

YARTS ridership to the park along the Highway 140 corridor represents a very small percentage of total park visitation. However, the summer 2007 visitor survey found that the YARTS bus service is very important to its riders (White and Aquino 2008). For the years 2006 through 2011, total annual YARTS ridership ranged from a low of 49,924 in 2006 to a high of 77,281 in 2011, representing between 1.5% and 1.9% of total park visitation for the respective years. Visitor ridership closely follows the seasonal visitation numbers for the park, with the four summer months of May through September representing approximately 50% of total visitor ridership for the years 2006 through 2011 (NPS 2011o). It is assumed this trend would continue in the future.

Parking Areas

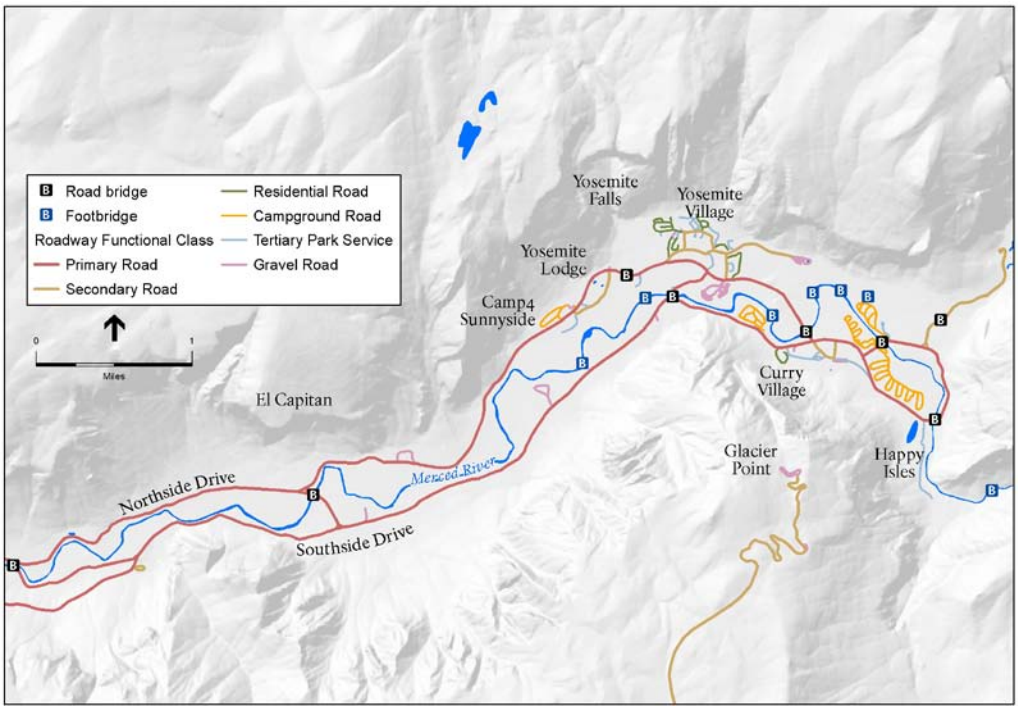
Parking supply within the park consists of designated day use and overnight visitor, employee, and resident lots, located throughout the primary developed areas of Yosemite Valley, El Portal Administrative Site, and Wawona. Other designated parking areas include trailhead parking lots and paved turn-outs along park roads. In addition, during peak summer days, motorists rely on an increasing number of informal areas for parking, such as unpaved roadside shoulders. Despite the potential resource impacts associated with use of these informal parking areas, the park depends upon these areas to satisfy parking demand during peak periods. Parking shortages are a substantial contributor to vehicle congestion within some areas of the river corridor, in particular the Yosemite Valley portion of the corridor. Congestion and crowding can result in a negative visitor experience. The 2005 visitor survey found that parking areas were the most frequently mentioned locations where visitors felt crowded (Littlejohn et al. 2005). The park uses traffic management personnel to actively manage traffic and parking conditions. The number of parking spaces varies depending upon the way visitors configure their vehicles and the types of vehicles in an area. For example, RVs typically take more space than a sedan, and directing RVs to different areas increases the number of spaces available for sedans.

Segment 2: Yosemite Valley

Roadway System

The Valley Loop Road, shown in Figure 9-44, is an approximately 12-mile-long combination one-way/two-way loop road that provides primary circulation within Yosemite Valley. It also connects the other major roads, facilitating through-park travel, and is maintained for year-round use. The pavement width is about 21 feet, and there are two travel lanes. Four bridges across the Merced River connect the roadway that runs parallel to the south Valley wall (Southside Drive) with the roadway on the north (Northside Drive). One-way operation is maintained along Southside Drive from Pohono Bridge in the West Valley to Stoneman Bridge near Curry Village in Segment 2A (East Valley). Two segments of one-way travel are maintained on Northside Drive. The first one-way section extends from Stoneman Bridge to Yosemite Village. The second one-way section extends from 100 yards west of Camp 4 to the Pohono Bridge. Two-way traffic is allowed between Camp 4 and Yosemite Village on Northside Drive.

Figure 9-44: Yosemite Valley Loop Road



In addition to Pohono and Stoneman bridges, connections between Northside Drive and Southside Drive are provided at El Capitan Bridge and at Sentinel Bridge near the Yosemite Chapel. Average daily traffic volumes in July 2011 were about 6,196 vehicles on Southside Drive and 6,240 vehicles on Northside Drive (NPS 2011n). The discrepancy between inbound and outbound traffic is likely because not every vehicle that enters the Valley leaves the Valley on the same day. Average daily volumes on peak weekends and peak holiday weekends have exceeded the July 2011 daily average in the past. In addition, monthly daily average traffic volumes may vary from those stated above.

Traffic Volumes

Traffic volumes inbound to Yosemite Valley increase through the early portion of the day, reaching a peak from 10:00 a.m. to about noon. Average inbound traffic volumes on Southside Drive during this period in July 2011 were about 641 vehicles per hour. On the busiest day in 2011, the inbound hourly volume of traffic reached about 648 to 821 vehicles per hour. On these days, the peak travel period generally extends from 10:00 a.m. to about 2:00 p.m. Peak traffic occurs when available parking has reached saturation, resulting in continuous stop-and-go traffic for those two to four hours of peak demand. Inbound traffic is slowed or diverted.

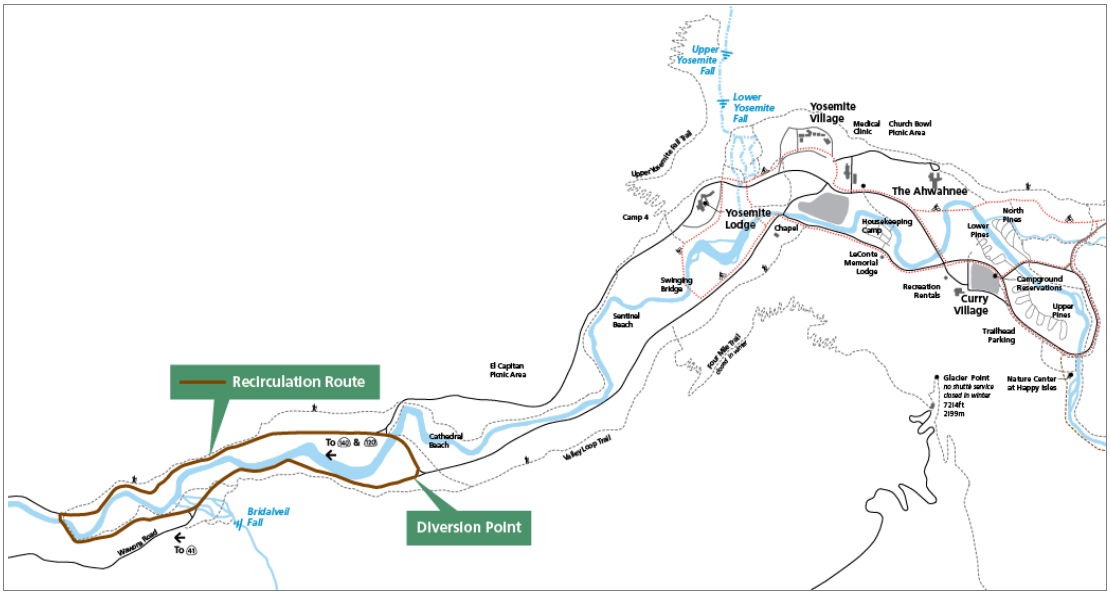
Traffic volumes leaving Yosemite Valley tend to increase towards the later part of the day, peaking between 4:00 p.m. and 6:00 p.m. Average outbound traffic volumes on Northside Drive during this period in July 2011 were about 724 vehicles per hour. Traffic volumes on the average day equal or exceed 500 vehicles per hour on Northside Drive from about 2:00 p.m. to 6:00 p.m. On the busiest day in 2011, the outbound traffic volume peaked at 750 vehicles per hour and exceeded 500 vehicles per hour from 1:00 p.m. to 8:00 p.m. (NPS 2011n).

Traffic Flow Conditions

The roadway system in Yosemite Valley can be confusing to first-time visitors because of the one-way circulation, limited opportunities to cross the Merced River, and circuitous travel routes. Highly congested locations include the intersection of Northside Drive and the Camp 6 parking lot entrance, the intersection of Northside Drive and Sentinel Drive ("Bank Three Way"), and the pedestrian crossing from Yosemite Lodge to Lower Yosemite Fall. Conflicts between vehicles and pedestrians at these key intersections are a primary factor in causing traffic delays, which are experienced primarily during the afternoon hours during the peak season. Traffic congestion in the Valley can cause frustrating delays to visitors in private vehicles, leads to increased vehicle emissions, and disrupts the operation of the Valley shuttle bus system.

The park employs a traffic management response team to assist with traffic congestion, mainly within the Valley, during peak summer days. The traffic management team helps relieve congestion by providing visitor information, directing vehicles to parking locations, and managing intersections, pedestrian and vehicle traffic. On those occasions when traffic volumes and parking in the Segment 2A (East Valley) reaches or exceeds capacity, traffic managers will redirect traffic otherwise bound for the Segment 2A (East Valley). This diversion measure is commonly known as the El Capitan Cross-over Traffic Diversion (see Figure 9-45) and involves a series of specific management contingencies for managing excess traffic at a rate of 200 to 400 vehicles per hour.

Figure 9-45: El Capitan Cross-over Traffic Diversion



Commercial Tour Buses

Approximately 4.8% of visitors arrived at Yosemite by commercial tour bus during the summer of 2007 (RSG 2011). In July 2011, an average of 41 commercial tour buses entered the park each day, which is lower than the Valley historically accommodated in past peak years such as the summer of 1996; tours include day use itineraries and overnight stays. A typical one-day tour to Yosemite Valley includes short 15-minute to 30-minute stops at popular vistas such as Tunnel View and along Southside Drive at the Bridalveil Fall viewing area, then proceeding to Yosemite Lodge for a longer stop of two hours to three hours. At Yosemite

Lodge, visitors have a variety of options, such as walking to Lower Yosemite Fall, visiting the Yosemite Lodge gift shop and food court, and/or getting on the Valley shuttle bus for a trip around the Valley floor. While stopped at Yosemite Lodge, buses park in the 15 designated bus parking spaces adjacent to this facility. The number of buses simultaneously arriving and departing at these locations (i.e., platooning) has led to delays in the park in the past. Currently, there are no regulations that control or prevent platooning. Upon leaving the Valley, buses typically stop along Northside Drive at the El Capitan Meadow for 15-30 minutes to enjoy views of El Capitan and the adjacent El Capitan Meadow.

Buses that bring visitors to the park for overnight stays generally follow the same routine as described above for day trips, except that when buses arrive at Yosemite Lodge, visitors depart and check into the lodge for their overnight stay. The bus then departs with tour guests who were brought to the park one day to three days earlier and have checked out of Yosemite Lodge for a return trip back to their point of origin or to another out-of-park destination.

Yosemite Valley Bus Tours

Park tours originating within the park take visitors around the Valley floor and beyond. Concessioner-operated open-air trams (towed by a hybrid-diesel-powered truck-tractor) with a capacity of 70 passengers are used in summer to carry visitors along the Valley Loop Road and to Tunnel View on the Wawona Road above Segment 2B (West Valley). The trams are usually at capacity from mid-morning to late afternoon. A variety of tours beyond Yosemite Valley are also offered by the park concessioner. Most park tours originate at the lodging facilities within the Valley. In summer, daily trips from Yosemite Valley include one hikers' bus to Glacier Point and one to Tuolumne Meadows, and a grand tour that includes the Valley floor, the Mariposa Grove of Giant Sequoias, and Glacier Point.

Valley Shuttle Bus System

The current concessioner-operated shuttle bus system (with a fleet of 22 buses) operates year-round in Yosemite Valley, offering service to the major developed areas in Segment 2A (East Valley). The shuttles run daily from 7:00 a.m. to 10:00 p.m. every 7 to 20 minutes on the main route (an 8-mile loop with 22 stops). Service to Happy Isles and the Mirror Lake Trailhead may stop after a major snowfall. Two other Valley shuttle lines run during the summer only. The first (El Capitan Shuttle) provides service between the Valley Visitor Center and the El Capitan bridge, with stops at Camp 4, El Capitan picnic area, and the Four Mile Trailhead. The second (Express Shuttle) provides direct service between the Yosemite Village day parking area and the Valley Visitor Center. The latter two routes operate daily between 9:00 a.m. and 6:00 p.m. During the winter, when the ski area is operating, separate shuttle service is provided between the Valley and Badger Pass (typically mid-December through March). Several shuttle stops within the Valley (e.g., Camp 4, El Capitan Meadow, and Four-mile trailhead) lack the physical improvements of a formal bus stop and many stops only provide concrete benches.

Valley shuttle bus system ridership is highest during peak summer months (e.g., May to September). The Summer 2007 visitor survey found that weekday visitors (69%) are more likely than weekend visitors (54%) to use the shuttle bus system (White and Aquino 2008). On average, during the peak season in 2011, daily ridership exceeded 19,000. In July, average daily ridership exceeded 22,000 passengers. During the off-peak winter months of 2011 (e.g., January, February, November, and December), daily ridership averaged 2,154 passengers. Among these months, February had the lowest daily ridership of just 1,649 passengers (DNC 2011b).

High passenger volumes during peak summer months have a number of negative implications for drivers, passengers, and the broader public. A recent report on transportation conditions within the park (RSG 2011) documented park shuttle conditions during multiple summer visits in 2010 and 2011. According to the report, shuttle crowding was observed from mid-morning to late afternoon with standing room only conditions, which resulted in passengers being left behind because of insufficient shuttle capacity. In addition to crowding, challenges for shuttle bus users and drivers are also created by vehicle traffic, pedestrians, and bicyclists.

Parking Areas

Yosemite Valley is the area with the highest concentration of development and the most parking spaces in Yosemite. Because of the extensive use of informal parking areas during periods of high demand and because many such areas are not paved or marked, it is difficult to identify a specific parking supply. However, an inventory of parking used by visitors in the Valley conducted in 2011 identified about 1,614 spaces for day-visitor vehicles in Segment 2A (East Valley), primarily at Camp 6, the Village Store parking lot, Curry Orchard, and at various destinations along the Northside and Southside Drive loop roads, and along Sentinel Drive (NPS 2011p). The 2011 parking inventory identified about 440 day parking spaces in Segment 2B (West Valley) (between Yosemite Lodge and Pohono Bridge on Northside Drive, and between Pohono Bridge and the El Capitan Cross-over). Many of the spaces are informal turnouts and other areas are best suited to short-term use associated with auto touring. Parking for overnight guest vehicles is available at lodging, campground, and wilderness access areas. No designated day parking is available in the Yosemite Lodge area, but day visitors often compete with overnight guests for the available spaces. Designated day parking is permitted in the Camp 4 "overflow" lot (former Chevron Station), with parking regulated by signs noting times of permitted day use, and overnight permit-required information.

On crowded summer days, all formal parking is fully occupied, with parking spilling onto the roadway shoulders throughout the East Valley. This uncontrolled parking leads to pedestrian, bicycle, and vehicle conflicts, damage to vegetation and soils along the road edge, and the formation of informal trails. During these peak times, parking attendants direct day visitors to use the available spaces within the Camp 6 day parking lot as efficiently as possible, and they also direct vehicles to park as efficiently as possible in roadside spaces. Under this directed parking scenario, a maximum capacity of about 1,852 day-visitor vehicles can be achieved for the East Valley.

The demand for parking in the East Valley is primarily affected by day use visitation. Parking demand varies during the day and from day to day as the number of day and overnight visitors and nonresident employees fluctuates. During peak parking events, specific areas of constrained supply become evident. For example, the park has documented parking demand in excess of supply at Camp 6, Yosemite Lodge, Camp 4, Curry Orchard, The Ahwahnee, the Wilderness lot, and various employee and residential parking areas.

In the West Valley, parking lots are available at Bridalveil Fall and Tunnel View, and numerous roadside spaces exist along Southside Drive, Northside Drive, and El Capitan Cross-over between Pohono Bridge and the East Valley.

Segments 3 and 4: Merced River Gorge and El Portal

Roadway System

El Portal Road is about 7.5 miles long within the park. At the park boundary, this road connects to Highway 140. The El Portal Road enters the park about two miles east of the El Portal Administrative Site, passes through the Arch Rock Entrance Station, and continues to the Valley Loop Road near Pohono Bridge. It is maintained for year-round access and has been historically called the All-Year Highway. The road is characterized by steep, rocky canyon walls with small river flats and terraces and has a typical pavement width that varies from 19 feet to 22 feet.

Highway 120 enters the park at the Big Oak Flat Entrance Station, and continues through the park to Tioga Pass, exiting eastbound near the summit. Big Oak Flat Road begins at Crane Flat and continues for about 11 miles to its junction with El Portal Road. Big Oak Flat Road may be used as a through route in conjunction with other major park roads and is maintained for year-round access. The topography changes from mountainous on the east end of the road to rolling terrain at the west end. The width paved roadway ranges from 26 to 30 feet.

Traffic Volumes

Average daily traffic entering the park on El Portal Road (Arch Rock Entrance Station) and on Big Oak Flat Road (Big Oak Flat Entrance Station) in July 2011 (the most recent peak period for which such data are available) was about 1,910 and 2,440 vehicles, respectively (NPS 2012f).

Traffic Flow Conditions

During busy days, when large numbers of vehicles are entering the park, long queues form at park entrances, where motorists are waiting to pay. As stated above, the park employs a traffic management team that periodically implements traffic restrictions during the busiest summer weekends when congestion in Yosemite Valley is most severe. Congestion is monitored using qualitative factors, such as observations of traffic conditions and the judgment of park supervisory personnel. Because implementation of restricted access measures is labor-intensive, diverts park staff from other operations, and can result in moving congestion impacts into other less-developed park areas, such measures are implemented only when conditions warrant it in the interest of public safety.

Parking Areas

Parking areas within the Merced River gorge (Segment 3) consists of available roadside parking along the shoulder of El Portal Road; two off-road, paved parking lots; and a paved parking lot next to the Arch Rock Entrance Station. There are 180 day vehicle parking spaces and two bus parking spaces available in Segment 3 between Big Oak Flat Road and the park boundary. Minimal designated parking is available for exclusive employee and administrative use in this area and does not compete with visitor parking and access.

Park, park concessioner, and park partner employees work and live in the El Portal area and contribute to the parking demand within Segment 4 along with a small number of day visitors. The visitor day parking consists of 290 spaces (primarily at the El Portal Market and fuel station and along the roadsides). There are 610 parking spaces for administrative uses and 106 residential parking spaces. The off-street and roadside parking areas located between the Merced River and Foresta Road at the El Portal Maintenance facility were not

designed or built to prevent water quality contamination from automotive fluids, surface water runoff, or sediment transport. Furthermore, parking at this location often exceeds the supply, and use of informal parking along Foresta Road is necessary.

Segment 7: Wawona

Roadway System

Wawona Road is about 27 miles long within the park. At the South Entrance, this road connects to Highway 41. Wawona Road is the principal access to Wawona, Mariposa Grove, Badger Pass Ski Area, Glacier Point, and Yosemite Valley and is maintained for year-round access. Throughout its length, the 24-foot-wide road traverses mountainous terrain with steep grades and is surrounded by moderate to dense forest.

Traffic Volumes

Average daily traffic entering at the South Entrance Station in July 2011 was about 1,940 vehicles (NPS 2012f).

Traffic Flow Conditions

While the number of vehicles on park roads has increased over the years, traffic volumes generally do not exceed the capacity of the roads. Traffic conditions on Wawona Road are typically acceptable along the South Fork Merced River where Wawona Road crosses and then follows the river. On peak summer days, when the Mariposa Grove parking lots reach capacity, motorists are directed to drive north to Wawona, park in Wawona, and take the shuttle bus back to Mariposa Grove. While this helps relieve pressure on formal and informal parking areas near Mariposa Grove, it exacerbates parking congestion, poor traffic circulation, and pedestrian/motor vehicle conflicts that occur in Wawona during peak summer days (RSG 2011).

Commercial Tour Buses

The tour buses primarily focus on Yosemite Valley (as described for Segment 2 above), but some day tours may also include a stop at the Mariposa Grove of Giant Sequoias if they enter or depart the park through Wawona. The stop at the Mariposa Grove requires a transfer from the tour bus to the Wawona Shuttle because tour buses cannot negotiate the sharp turns on Mariposa Grove Road.

Wawona Shuttle Bus System

In the spring through fall, a free shuttle bus service operates between Wawona and Mariposa Grove of Giant Sequoias. The Wawona shuttle is a continuous loop on a 15-minute frequency that picks up and drops off passengers at the Wawona Store, South Entrance, and at the Mariposa Grove Gift Shop. During peak summer days, when the Mariposa Grove parking lots become full, motorists are instructed to drive to Wawona and ride the shuttle back to Mariposa Grove. In 2011, daily roundtrip ridership on the Wawona shuttle averaged 1,782 passengers. July had the highest volume of passengers, with average daily roundtrip ridership exceeding 2,800 passengers. Roundtrip shuttle service between the Wawona Hotel and the Yosemite Lodge is provided once daily. The Yosemite Valley-Wawona shuttle operates from approximately

Memorial Day through Labor Day. Despite these formal routes, the Wawona stop lacks the improvements of a designated bus stop. For example, the stop does not have adequate seating and provides no shelter.

Parking Areas

Parking is provided in Wawona for visitors and employees associated with facilities such as the Wawona Hotel complex, the Wawona Store and Gift Shop, the Pioneer Yosemite History Center, a campground, and two picnic areas. Parking demand varies during the day and from day to day as the number of visitors and employees fluctuates. As noted previously, on peak summer days when the Mariposa Grove parking lots reach capacity, motorists are encouraged to park in Wawona and ride the free shuttle bus back to the Mariposa Grove.

There are approximately 290 day vehicle parking and 8 bus parking spaces around the Wawona Hotel, the Wawona Store, and Pioneer Yosemite History Center, as well as adjacent to Forest Drive and along Chilnualna Falls Road. When visitors are catching the free shuttle bus to Mariposa Grove from Wawona, they often park along the roadside shoulders of Wawona Road and Forest Drive. This uncontrolled parking leads to pedestrian and vehicle conflicts. Parking for administrative functions are located within the land assignments for these uses and do not compete with visitor parking.

Environmental Consequences Methodology

The focus of this impact assessment was the effect of potential management actions on how well the transportation system would accommodate parking and the associated traffic flow and transportation experience within the Merced River corridor. Conditions were assessed based on potential changes in traffic volumes through the river corridor tied to amounts of visitor use as prescribed by the Merced River Plan, along with associated changes to visitor accommodations and/or parking areas under each alternative.

Changes in parking were evaluated (1) as to how well they would accommodate the demand for parking and (2) for the associated effect on levels of congestion and other factors influencing the transportation experience on the roadway system serving the Merced River corridor. The analysis focuses on Segment 2A (East Valley), Segment 2B (West Valley), Merced River Gorge (Segment 3), El Portal (Segment 4), and Wawona (Segment 7) because there are no actions proposed for Segments 1, 5, 6, and 8 (wilderness segments accessible only by trails, not roads) that would affect transportation conditions.

Day use capacity was determined and expressed as the number of people who would be accommodated in the river corridor at one time. Overnight capacity is expressed as the number of total persons allowed to stay overnight. Because each alternative prescribes these visitor use levels along with the associated parking spaces to accommodate the use levels, this analysis assumes that no more parking would occur beyond that which is prescribed for each alternative. Physical barriers to roadside parking would be a component of each of Alternatives 2–6. Several mechanisms for enforcing parking restrictions, including parking management staffing and a parking permit system, are being explored under the various alternatives. Additionally, it is assumed that day and overnight parking areas would be designated and that the parking management system would ensure that day use visitors did not park in overnight spaces and vice versa. This would ensure that neither day nor overnight visitors would be displaced by one another, and that the day capacities, which would be managed through the availability of day parking, were not exceeded.

Each alternative is evaluated in terms of the context, intensity, and duration of the transportation impacts, and whether the impacts are considered beneficial or adverse to the overall transportation system, parking, traffic flow, and transportation experience.

- **Context.** The context of the impact considers whether the impact would be local, segmentwide, parkwide, or regional. For the purposes of this analysis, local impacts would be those that occur in a specific area within a segment of the river, such as an intersection or parking lot. This analysis further identifies if there are local impacts in multiple segments. Segmentwide impacts would consist of a number of local impacts within a single segment, or larger-scale impacts that would affect the segment as a whole. Parkwide impacts would extend beyond the river corridor and the study area within Yosemite. Regional impacts would be those that extend to the Yosemite gateway region.
- **Intensity.** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Intensity was calculated based on the number of visitors affected by the proposed actions. Negligible impacts would be effects considered not detectable and be those that could have an effect on less than 5% of visitors during the peak season of visitation. Minor impacts would be effects that would be slightly detectable and be those that could have an effect on 5% to 10% of visitors during the peak season of visitation. Moderate impacts would be clearly detectable and those that could have an effect on 10% to 20% of visitors during the peak season of visitation. Major impacts would have a substantial, highly noticeable influence on the transportation system and experience and be those that could have an effect on more than 20% of visitors during the peak season of visitation.
- **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 types of activities. A long-term impact would have a permanent effect on the performance of the transportation system, parking, traffic flow, and transportation experience.
- **Type of Impact.** Impacts were evaluated in terms of whether they would be beneficial or adverse to the overall transportation system, parking, traffic flow, and transportation experience. Research completed in Yosemite shows that visitors have their most significant park experiences when they are out of their vehicles (White et al. 2006). Currently, regarding existing transportation conditions, the majority of Yosemite visitors experience high levels of freedom and access and feel they can go "where they what, when they want" (unpublished author communication related to White 2010). Beneficial impacts would occur when potential actions would accommodate visitor parking needs and improve traffic flow (i.e., decrease congestion), thereby at least maintaining the existing high levels of acceptability of the transportation experience. Adverse impacts would occur when potential actions would not accommodate parking demand, would increase congestion, or would alter the transportation experience (by prolonging time spent traveling in the park in a vehicle).

Environmental Consequences of Alternative 1 (No Action)

All River Segments[1]

The NPS would continue to undertake transportation-related maintenance improvements and resource protection measures such as repaving; adding signage; and delineating trail, parking, and roadways. The overall management direction under Alternative 1 (No Action) for the river corridor would be based on the guiding management documents in place as of 2010, as modified by the settlement agreement.

Under Alternative 1 (No Action) there would continue to be an average of 3% annual growth in visitation following recent trends. It is expected that more days during the peak season would receive the visitation

[1] There are no transportation facilities in Segments 1, 5, 6, or 8 of the Merced River corridor; therefore, this analysis focuses on the Segments 2, 3, 4, and 7, and those segments are grouped as appropriate.

currently experienced on the busiest days. Visitation could increase in the off-peak seasons, resulting in this overall annual increase. If this were to occur, then traffic congestion during nonpeak periods (e.g., during months on either side of peak summer months, and on weekdays during peak summer months) could approximate current congestion during peak periods. Increases in visitation during peak periods also could occur, and to the degree that such increases happen, congestion would marginally worsen.

Segment 2: Yosemite Valley

Roadway System. There would be no changes to the roadway system in Segment 2 under Alternative 1 (No Action); therefore, no impacts would occur.

Traffic Volumes. It is expected that current trends would continue under Alternative 1 (No Action), and the number of days per year with 6,000 or more vehicles passing Chapel Straight would increase over time. The maximum vehicle volume in Segment 2A (East Valley), however, is expected to remain at about 7,000 vehicles. As a result, Segment 2 would continue to experience segmentwide, long-term, minor, adverse impacts.

Traffic Flow Conditions. Segmentwide, long-term, moderate to major, adverse impacts associated with traffic congestion and delays would continue to occur at busy intersections in Yosemite Valley, and likely worsen as visitation levels increase by an average of 3% per year under Alternative 1 (No Action). Parking shortages and poorly performing intersections are a substantial contributor of vehicle congestion within Yosemite Valley. Alternative 1 (No Action) would continue current transportation management practices to address increases in park visitation, increases in traffic volumes on the park roadways, intersection performance, and parking demand that exceeds supply. However, in the absence of enhanced transportation management actions, increases in park visitation (and associated increases in traffic volumes and parking demand) would continue to adversely affect the quality of the transportation experience by prolonging time spent traveling in the park in a vehicle. Consistent with current management practices, temporary access restrictions may be implemented at times in the Valley when westbound traffic is backed up from Lower Yosemite Fall to the Curry Village four-way intersection, or when all day-use parking spaces have been filled (*Superintendent's Compendium*).

Commercial Tour Buses. There would be no changes to the management of commercial tour bus access to the park under Alternative 1 (No Action). The demand for commercial tour bus parking currently is not met by the supply. There could be segmentwide, long-term, minor, adverse impacts associated with parking demand continuing to exceed the supply.

Yosemite Valley Bus Tours. Under Alternative 1 (No Action), there would be segmentwide, long-term, negligible impacts on Yosemite Valley bus tours. These services would continue to operate as they do currently.

Valley Shuttle Bus System. No new shuttle stops would be added under Alternative 1 (No Action). There could be segmentwide, long-term, minor to moderate, adverse impacts associated with continuing crowding on Valley shuttle buses and service delays for those buses as they are slowed by traffic congestion on the Valley Loop Road.

Parking Areas. The existing 5,049-space parking capacity for private automobiles and commercial tour buses would remain unchanged, dispersed at sites and turnouts. Camp 6 and the Curry Orchard would continue to serve as the primary day use parking lots in Segment 2 under Alternative 1 (No Action). There could be

segmentwide, long-term, minor to moderate, adverse impacts associated with parking demand continuing to exceed supply, likely worsening as visitation levels increase by an average of 3% per year.

Segment 2 Impact Summary: There could be segmentwide, long-term, minor to moderate, adverse impacts on transportation conditions in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 1 (No Action) from the continuation of current transportation management actions to address increases in park visitation, increases in traffic volumes on the park roadways, and increased parking demand that exceeds the parking supply (i.e., a larger parking deficit).

Segments 3 and 4: Merced River Gorge and El Portal

Alternative 1 (No Action) would retain the existing transportation conditions in Segments 3 and 4. Camping, lodging, parking, and circulation facilities would remain in their current locations and conditions, and at their current capacities. Access to the Merced River gorge would continue to be limited by available roadside parking along the shoulder of El Portal Road; at two off-road, paved parking lots; and at the paved parking lot next to the Arch Rock Entrance Station. Current trends would likely continue under Alternative 1, exacerbating traffic back-ups at the Arch Rock entrance station and reducing performance at the intersection of El Portal Road and Big Oak Flat Road. Public transportation routes would not change. For these reasons, there would be local, long-term, minor, adverse impacts associated with transportation conditions (traffic flow and parking for automobiles and charter buses) in certain portions of Segments 3 and 4 under Alternative 1 (No Action).

Segments 3 & 4 Impact Summary: There would be local, long-term, minor, adverse impacts associated with transportation conditions (traffic flow and parking for automobiles and charter buses) in Segments 3 and 4 under Alternative 1 (No Action).

Segment 7: Wawona

Roadway System. There would be no changes to the roadway system in Segment 7 under Alternative 1 (No Action), and no transportation impacts would occur.

Traffic Flow Conditions. As described in the Affected Environment section above, the number of vehicles on park roads has increased over the years, but traffic conditions on Wawona Road are typically acceptable along the South Fork Merced River where Wawona Road crosses and then follows the river. On peak summer days, when the Mariposa Grove parking lots reach capacity, motorists are directed to drive to Wawona and take the shuttle bus back to Mariposa Grove. This relieves pressure on parking areas near Mariposa Grove, but exacerbates congestion and poor traffic circulation in Wawona during peak summer days. Segmentwide, long-term, minor to moderate, adverse impacts would continue to occur at busy intersections in Wawona, and likely worsen as visitation levels increase by an average of 3% per year, under Alternative 1 (No Action).

Charter Buses. There would be no changes to the management of charter bus access to the park in Segment 7 under Alternative 1 (No Action). The demand for charter bus parking currently is not met by the supply. There could be segmentwide, long-term, minor, adverse impacts associated with parking demand continuing to exceed the supply.

Wawona Shuttle Bus System. No new shuttle stops would be added under Alternative 1 (No Action). There could be segmentwide, long-term, minor, adverse impacts associated with continuing crowding on Wawona shuttle buses, and service delays for those buses, as they are slowed by traffic congestion on area roads.

Parking Areas. The existing parking supply for private automobiles (day visitors and employees) and commercial tour buses would remain unchanged in Segment 7 under Alternative 1 (No Action). There could be segmentwide, long-term, minor, adverse impacts associated with parking demand continuing to exceed supply, likely worsening as visitation levels increase by an average of 3% per year.

Segment 7 Impact Summary: There could be segmentwide, long-term, minor, adverse impacts on transportation conditions in Segment 7 under Alternative 1 (No Action) from the continuation of current transportation management actions to address increases in park visitation, traffic volumes on the park roadways, and parking demand that exceeds the parking supply (i.e., a larger parking deficit).

Summary of Impacts from Alternative 1 (No Action)

Assuming a continued increase in visitation, associated traffic volumes and parking demand, there would be a clearly detectable (experienced by 10% to 20% of visitors) increase in traffic congestion, pedestrian-vehicle conflicts, and inappropriate roadside parking Therefore, Alternative 1 (No Action) would result in segmentwide, long-term, moderate, adverse impacts on transportation conditions.

Cumulative Impacts from Alternative 1: No-Action

Cumulative impacts to transportation discussed herein are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential impacts of the no-action alternative. The projects identified below include only those projects that could affect transportation within the river corridor or in the park vicinity.

Past Actions

Past actions have resulted in both adverse and beneficial impacts on transportation. The majority of past projects listed in Appendix B (e.g., Yosemite Valley Loop Road Rehabilitation, completed in 2008, South Entrance Exit Lane Project, completed in 2012, East Yosemite Valley Utilities Improvement Plan, and Wawona Road Rehabilitation Project completed in 2011) had short-term, adverse impacts on transportation conditions in the corridor (i.e., associated with construction-related increases in traffic volumes on park roads), which have no net adverse or beneficial effects on current or future transportation conditions. The following past projects had long-term, minor, beneficial impacts on transportation conditions, which would continue under Alternative 1:

- The YARTS is a regional transportation system established in 2000, whose intent is to provide an alternative to private vehicles by expanding the range of travel options for visitors to Yosemite Valley and to other primary park destinations, and for employees commuting to work in the park. It also provides a means for visitors to travel to the Valley when restricted access measures are implemented for private vehicles during times of severe congestion. YARTS has a parkwide, long-term, moderate, beneficial impact by reducing the number of day visitors arriving in private vehicles.
- El Portal Road improvement projects had both adverse (short-term during construction) and beneficial (long-term) impacts on transportation. Short-term, construction-related impacts included visitor delays and visitor safety through the construction work zone. Those impacts were mitigated by implementation of a traffic control plan, with measures such as strict construction timing restrictions, roadway safety procedures, flaggers, and signaling. Safety improvements on El Portal Road facilitate regional transit service on that route, which is a segmentwide, long-term, minor, beneficial impact.

- Housing Projects (i.e., Curry Village Employee Housing, Curry Village Huff House Temporary Housing, Yosemite Valley Lost Arrow Temporary Employee Housing, and Yosemite Valley Ahwahnee Temporary Employee Housing) included the construction of housing and related facilities to accommodate concessioner employees. These housing units replace concessioner housing lost in the January 1997 flood and the rockfall events at Curry Village in October 2008, and were developed in consultation with litigants as part of a settlement agreement concerning the *Merced Wild and Scenic River Comprehensive Management Plan/DEIS*. These actions provide temporary lodging for concessioner employees, and were needed to help meet immediate short-term housing needs for the park concessioner until permanent employee housing is available. Construction was completed between 2007 and 2009. These projects have a regional, long-term, moderate, beneficial impact by reducing the number of employee commute trips to and from the park.
- Yosemite Valley Shuttle Bus Stop Improvements consisted of the preparation of preliminary design plans, environmental compliance documents, and construction drawings; the construction of six, 10-foot by 80-foot concrete braking pads, and the rehabilitation or replacement of 94,000 square feet of asphalt road approaches and the construction of bus stop shelters. Construction was completed in 2010. These improvements support shuttle bus service in the Valley, which is a segmentwide, long-term, minor, beneficial impact.
- Curry Village Rehabilitation of Historic Cabins with Bath Structures would address a rehabilitation program for the 26 guest cabins with baths that are still being used for guest accommodations on the western side of Curry Village just north of the rockfall hazard zone. This project is currently in the design stage and would be implemented in a multi-year phased project.

Present Actions

Present actions proposed in the Yosemite region are separated below into four general categories: (1) projects anticipated to have a net beneficial impact; (2) projects anticipated to have both beneficial and adverse impacts; (3) projects anticipated to have adverse impacts; and (4) projects anticipated to have a no-net adverse or beneficial impact.

Present projects that could have a notable cumulative parkwide long-term, moderate, beneficial impact, unless otherwise stated, on transportation include:

- Increased YARTS services
- Changeable electronic signs in Mariposa, Midpines, and El Portal, alerting drivers of traffic conditions in Yosemite Valley
- Computer-Aided Dispatch / Automatic Vehicle Locator
- Web-based Traffic Forecasts to inform travelers of traffic congestion (heavy, moderate or light) in different areas of the park (Yosemite Valley, Tuolumne Meadows, Wawona and Mariposa Grove, and Glacier point). Travelers can also sign up to receive the forecasts via email. The aforementioned actions would individually, and in combination, encourage travel to the park by alternative (nonprivate vehicle) modes. The Tuolumne Wild and Scenic River Comprehensive Management Plan proposes parking increases for the Tuolumne River corridor increasing the overall parking availability for day-users in YNP. This increase in parking may help to distribute visitors across the park and may reduce the number of days where visitors are displaced from Tuolumne Meadows to Yosemite Valley due to a shortage of parking availability.
- Restoration of the Mariposa Grove Ecosystem proposes limited shuttle service between Wawona and the Mariposa Grove. This shuttle service should cut down on roadway congestion in this area while still allowing Wawona visitors to visit the Mariposa Grove. Additionally, a new parking area at the South Entrance station should focus Mariposa Grove visitors closer to their destination and

reduce demand for parking in the Wawona area. Additionally, the re-alignment of the South Entrance station should improve traffic flows in and around this park entrance (though construction during this time could cause short term moderate adverse impacts).

Present projects that could have a notable short-term, adverse impact, but a cumulative long-term, beneficial impact on transportation include:

- South Park Intelligent Transportation System to let visitors know when parking lots are full
- Parking alternative option at the El Portal Administrative Site
- The South Entrance Station Kiosk Replacement
- The Restoration of Mariposa Grove Ecosystem Project
- Rehabilitate (pulverize and repave) approximately 25 miles of the Wawona Road between Southside Drive and South Entrance. Only minimal work at turnouts and intersections, which will be within the existing paved footprint.

Although the above projects would have some site-specific, short-term, adverse impacts (e.g., construction-related transportation effects), the general goal of each of these projects is to improve transportation circulation and safety.

Present projects that could have a short-term, adverse impact on transportation include:

- Ahwahnee Comprehensive Rehabilitation Plan
- The Ahwahnee Hotel Improve Porte Cochère Access Walkways and Fence project, which would replace rotted wooden components along (1) the uncovered wood-plank walkway that runs along the service yard fence to the porte cochère, (2) the service yard fence, and (3) the wood-plank boardwalk in the main entry gallery
- Parkwide pavement preservation program that requires temporary road closures for various segments of roads in the corridor

The adverse impacts associated with the projects listed above would be short term and primarily related to construction-generated traffic on roadways serving the project sites. There would be no net, long-term, adverse or beneficial impacts on transportation.

Present projects anticipated having no net, long-term or short-term, adverse or beneficial impacts on transportation include:

- Commercial Use Authorization for Commercial Activities, to regulate and oversee operations of permit holders involved in conducting commercially-guided day hiking, overnight backpacking, fishing, photography workshops, stock use (pack animal trips and pack support trips for hikers), and Nordic skiing activities in Yosemite.

The continuation of transportation-related maintenance improvements and resource protection measures such as repaving, and trail, parking, and roadway delineation would have short-term, minor, adverse impacts on transportation during construction, including visitor delays and visitor safety through the construction work zones. Those impacts would be mitigated by implementation of a traffic control plan, with measures such as strict construction timing restrictions, roadway safety procedures, and flaggers.

Restricted access measures would continue to control the volume of incoming vehicles when traffic and parking conditions in Yosemite Valley are over congested. The YARTS would continue to reduce the

number of individual vehicles operated within the park. These actions would have parkwide, long-term, moderate, beneficial impacts on transportation.

Reasonably Foreseeable Future Actions

Similar to past actions, reasonably foreseeable future actions would result in both adverse and beneficial impacts on transportation. Reasonably foreseeable future projects that could have short-term, adverse impacts on transportation associated with construction activities include the following:

- Concessioner Parking Lot Restoration Project. Concessioner-assigned paved parking areas would be replaced to a maintainable condition and to provide safe access for visitors and staff. Currently, paved parking areas exhibit substantial deterioration from age, construction activities, tree root lift, rodent activity, and extreme weather. Numerous potholes, annual patching, and excessive cracks exist, causing safety concerns related to Americans with Disabilities Act and Architectural Barriers Act Accessibility Standards requirements. As part of this project, paved areas would be evaluated individually for proper drainage, elevations, curbing, striping, and improved efficiency. The existing parking area footprints would be retained as designated in the concessions contract for concessioner land assignments. This project would not expand any parking areas or add any parking spaces.
- Parkwide pavement preservation program that requires temporary road closures for various segments of roads in the corridor.

The park anticipates that visitor demand would increase, which could exacerbate traffic congestion on park roads. Reasonably foreseeable future projects that could have a cumulative long-term, beneficial impact on transportation by encouraging travel to the park by alternative (non-private vehicle) modes or improving transportation infrastructure outside of the river corridor include the following:

- Transit Passenger Information System. This project will enable improved communication to park visitors on the status of the park's shuttle buses through development of a visitor information system for all the shuttle bus systems in Yosemite Valley, Mariposa Grove/Wawona, Badger Pass, and Tioga Road.

Other beneficial impacts for reasonably foreseeable future actions would be similar to those discussed for past and present actions (i.e., the restricted access measures and increased YARTS services). Reducing traffic congestion and encouraging travel to the park by alternative (non-private vehicle) modes would have parkwide, long-term, moderate, beneficial impacts on transportation.

Overall Cumulative Impact

Cumulative projects are not anticipated to affect transportation conditions in Segments 1, 5, 6, and 8 (wilderness segments accessible only by trails, not roads), and therefore, no cumulative impacts would occur. For segments 2, 3, 4 and 7, camping, lodging, parking, and circulation facilities are assumed to remain in their current locations and conditions, and at their current capacities. Consequently, traffic congestion and delays would continue to occur at busy intersections and could worsen somewhat if visitation levels increase in the future. Congestion and delays would result in segmentwide, long-term, minor, adverse impacts on transportation conditions.

Environmental Consequences of Actions Common to Alternatives 2–6

All River Segments

Impacts of Actions to Protect and Enhance River Values

Actions to protect and enhance river values that are common to Alternatives 2–6 would primarily have local, short-term, minor adverse transportation impacts associated with restoration activities, but would have no long-term impacts because traffic congestion would cease with completion of the restoration work. The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Although there would be some minor land use and parking-related actions common to Alternatives 2-6, there would be no segmentwide visitor use or transportation actions common to Alternatives 2-6. Each alternative would accommodate different levels of peak use demand for visitation in the Valley as the amount of overnight accommodations, circulation patterns, day parking, and transit options would vary.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Actions to protect and enhance river values common to Alternatives 2–6 in Segment 2 would primarily result in short-term transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the restoration work. The impacts to transportation resulting from changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Actions common to all alternatives within Segment 2 that are proposed to specifically address transportation conditions include adding a 41-space parking lot for Camp 4 campground and constructing a shuttle bus stop near Camp 4. Construction activities may result in minor delays in the short-term, but once operational, these actions would result in segment-wide, long-term, minor beneficial impacts to transportation conditions, as traffic congestion would be somewhat lessened during periods of peak visitor use. In addition, the relocation of the Concessioner Garage service to the Government Utility Building would allow for an expansion of Yosemite Village day-use parking, also resulting in segment-wide, long-term, minor beneficial impacts. Other actions associated with overnight accommodations and facilities that are common to all alternatives in Segment 2, including actions associated with the Huff House temporary housing area, Curry Village services and facilities, the western expansion of Backpackers Campground, the eastward expansion of Camp 4, and the removal of old and temporary housing at Highland Court and the Thousands Cabins would have a segment-wide, long-term, negligible beneficial impact to transportation conditions.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, negligible to minor, beneficial impacts on transportation and circulation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Actions to protect and enhance river values common to Alternatives 2–6 in Segments 3 and 4 would primarily have short-term transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the restoration work. The transportation impacts of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Actions common to all alternatives associated with visitor use management and facilities within Segments 3 and 4 include constructing infill housing units in vacant lots in old El Portal. Construction activities may result in a minor increase in construction related traffic in El Portal in the short-term. However, once operational, this action would result in local, long-term, negligible beneficial impact to transportation as a small amount of traffic is removed from Segment 2.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, negligible, beneficial impacts on transportation and circulation within Segments 3 and 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Actions to protect and enhance river values common to Alternatives 2–6 in Segment 7 would primarily have short-term transportation impacts, associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the restoration work. The transportation impacts of changes to the amount of overnight accommodation (i.e., campsites) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Actions to manage user capacity, land use, and facilities that are common to Alternatives 2-6 in Segment 7 would primarily have long term transportation impacts associated with the relocation of parking spaces and increased transit opportunities. Alternatives 2-6 retain 290 day-use parking spaces and remove roadside parking between the store and Chilnualna Falls Road to address resource and safety issues. With a new parking area to be constructed for the Mariposa Grove shuttle at the South Entrance Station, parking demand will be substantially reduced at the Wawona Store area. The eight tour bus parking spaces would continue to be provided, but would be moved to the same side of the street as the shuttle stop and Wawona

Store.

The amount of overnight accommodations, day parking and transit options would vary by alternative, and each alternative would accommodate different levels of peak use demand for visitation to Wawona, as described under each alternative.

Segment 7 Impact Summary: Impacts of actions common to Alternatives 2-6 would be similar to those of Alternative 1 (No Action), and result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

Summary of Impacts Common to Alternatives 2–6

Impacts common to all segments under Alternatives 2–6 would result in segmentwide, short-term, negligible to minor, adverse impacts on traffic, transit, and tour bus services and parking areas associated with restoration activities. Operational impacts common to all segments under Alternatives 2–6 would result in segmentwide, long-term, negligible to minor, beneficial impacts on traffic, transit, tour bus services and parking areas with implementation of these actions.

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

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, actions to protect and enhance river values would primarily have local, short-term, minor, adverse transportation impacts associated with restoration activities (e.g., removal of Sugar Pine, Ahwahnee, and Stoneman bridges to enhance the mid-elevation alluvial floodplain of the Merced River). The transportation impacts of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 2, actions to manage visitor use and facilities would slightly decrease opportunities for camping, lodging, and day parking in the river corridor, expand regional bus service, and improve traffic circulation by a marked reduction in visitor use through a day use parking permit system for the East Yosemite Valley during the peak season. Permit compliance would be checked at park entrance stations and, secondarily, at Yosemite Valley locations or parking areas. These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, in Segment 2, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities.

However, traffic flow and circulation would be improved through the rerouting of Northside Drive south of the Yosemite Village day-use parking area (which would be relocated north of the current location, closer to the Yosemite Village). No roundabouts would be necessary under Alternative 2. While a pedestrian undercrossing would not be necessary, Alternative 2 would construct an at-grade pedestrian crossing west of the intersection of Northside Drive and Yosemite Lodge Drive to alleviate pedestrian/vehicle conflicts. Additionally, the intersection at Sentinel Bridge would be redesigned and Southside Drive would switch to a two-way road. The transportation impacts of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 2, in Segment 2, actions to manage visitor use and facilities include a traffic and parking management program. About 537 fewer parking spaces would be provided in Yosemite Valley, based on a calculation of the parking needed to accommodate the reduced use levels in the river corridor; no parking would be added in Segment 2B (West Valley). Due to the reductions in the supply of day parking with Alternative 2 as compared to current peak demand, a day use parking permit system would be instituted for East Yosemite Valley. This system would be provided during the peak use season on a mixed first come, first served and advance reservation basis. Permits would be checked at entrance stations and secondarily at Valley locations or parking areas, and day use would be 9,400 visitors per day.

The total number of daily visitors to East Yosemite Valley under Alternative 2 would be 13,900 people, an approximately 33% decrease from existing peak-day conditions. At this level of visitation, there would not be a need for overflow parking during times of peak visitation. The amount of overnight lodging would decrease substantially from existing conditions under Alternative 2 in Segment 2, from 1,034 units to 556 units. The number of campsites in Segment 2 would decrease slightly, from 466 to 450 sites.

Regional bus service into Yosemite Valley would be maintained during the peak summer season under Alternative 2 with new service on the Highway 41 corridor and reduced service on the Highway 120 West corridor.

Transportation and circulation would be improved due to the day-use parking permit system, and the resulting substantially lower use levels. When combined, these actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions within Yosemite Valley.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, in Segments 3 and 4, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities as described for Segment 2.

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

Under Alternative 2, no significant changes to the kinds and amounts of use are proposed in Segment 3, and the only change in Segment 4 would be increased employee housing (added to replace the housing removed from the Valley). The total number of daily visitors to actively recreate in Segments 3 and 4 with Alternative 2 would not change from existing peak-day conditions.

Public transit options along Segments 3 and 4 would be expanded the same as described for Segment 2. Segment 3 is considered a "pass through" segment and, therefore, it does not contain any stops for passengers to enter or depart from transportation services that travel along this corridor. When combined, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, minor, beneficial impacts on transportation and circulation within Segments 3 and 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, in Segment 7, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the restoration work.

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

In addition to the actions common to Alternatives 2-6, Under Alternative 2 one round trip regional transit run would be added through Wawona in Alternative 2. The regional transit service would accommodate both employees and visitors. The total number of daily visitors to Segment 7 under Alternative 2 would increase slightly over Alternative 1 peak-day levels, primarily due to increased transit use.

Segment 7 Impact Summary: Impacts of Alternative 2, in conjunction with those actions that are common to Alternatives 2-6, would result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

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

Transportation conditions under Alternative 2 would be improved (reduced crowding and congestion) from management of visitor use to lower levels through the implementation of a day use parking permit system for East Yosemite Valley, expanded regional transit service, improved circulation patterns, and reduced vehicle-pedestrian conflicts. Although the number of parking spaces would be reduced, the lower visitor level would reduce the ratio of visitors to parking spaces, an improvement that would be clearly detectable (by 10% to 20% of visitors traveling in the Merced River corridor) during the peak season of visitation. Overall, with implementation of mitigation measures MM-TRA-1 through MM-TRA-5, as applicable (see Appendix C), Alternative 2 would have parkwide, moderate, long-term, beneficial impacts on transportation conditions.

Cumulative Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

The past, present, and foreseeable projects that would affect transportation in the river corridor under Alternative 2 would be the same as those under Alternative 1. Alternative 2, in combination with these cumulative projects, would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through current and reasonably foreseeable projects would further enhance the moderate, long-term, beneficial impacts on transportation that would result from the implementation of Alternative 2.

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

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities (e.g., removal of Sugar Pine, Ahwahnee, and Stoneman bridges to enhance the mid-elevation alluvial floodplain of the Merced River). The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 3, actions to manage visitor use and facilities would slightly decrease opportunities for camping in the river corridor and decrease lodging, expand regional bus service, decrease day parking, and improve traffic circulation by a marked reduction in visitor use through a day use parking permit system for the East Yosemite Valley during the peak season. Permit compliance would be checked at on-site parking locations. These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, in Segment 2, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities. However, traffic flow and circulation would be improved through the rerouting of Northside Drive south of the Yosemite Village day-use parking area (which would be relocated north of the current location, closer to the Yosemite Village). No roundabouts would be necessary under Alternative 3. While a pedestrian undercrossing would not be necessary, Alternative 3 would construct an at-grade pedestrian crossing west of the intersection of Northside Drive and Yosemite Lodge Drive to alleviate pedestrian/vehicle conflicts. Additionally, the intersection at Sentinel Bridge would be redesigned and Southside Drive would switch to a two-way road. The transportation effects of changes to the amount of overnight accommodation

(i.e., campsites and lodging units) as part of the restoration actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 3, in Segment 2, actions to manage visitor use and facilities include a traffic and parking management program. About 740 fewer parking spaces would be provided in the Valley, based on a calculation of the parking needed to accommodate the reduced use levels in the river corridor; no parking would be added in Segment 2B (West Valley). Due to the reductions in the supply of day parking with Alternative 3 as compared to current peak demand, a day-use parking permit system would be instituted for the East Yosemite Valley. This system would be provided during the peak use season on a mixed first come, first served and advance reservation basis. Permits would be checked at on-site parking locations, and day use would be 8,500 visitors per day.

The total number of daily visitors to East Yosemite Valley under Alternative 3 would be 13,200 people, an approximately 37% decrease from existing peak-day conditions. At this level of visitation, there would not be a need for overflow parking during times of peak visitation. The amount of overnight lodging would decrease substantially from existing conditions under Alternative 3 in Segment 2, from 1,034 units to 621 units. The number of campsites in Segment 2 would increase slightly, from 466 to 477 sites.

Regional bus service into Yosemite Valley would be maintained during the peak summer season under Alternative 3 with new service on the Highway 41 corridor and reduced service on Hwy 120 West.

Transportation and circulation would be improved with substantially lower use levels. When combined, these actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions within Yosemite Valley.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, in Segments 3 and 4, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities.

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

Under Alternative 3, no significant changes to the kinds and amounts of use are proposed in Segment 3, and the only change in Segment 4 would be increased employee housing (added to replace the housing removed from the Valley). The total number of daily visitors to actively recreate in Segments 3 and 4 with Alternative 3 would not change from existing peak-day conditions.

Public transit options along Segments 3 and 4 would be expanded as described for Segment 2 above. Segment 3 is considered a “pass through” segment and therefore it does not contain any stops for passengers to enter or depart from transportation services that travel along this corridor. When combined, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, minor, beneficial impacts on transportation and circulation within Segments 3 and 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, in Segment 7, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work.

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

In addition to the actions common to Alternatives 2-6, under Alternative 3 one round trip regional transit run would be added through Wawona in Alternative 2. The regional transit service would accommodate both employees and visitors. The total number of daily visitors to Segment 7 under Alternative 2 would increase slightly over Alternative 1 peak-day levels, primarily due to increased transit use.

Segment 7 Impact Summary: Impacts of Alternative 3, in conjunction with those actions that are common to Alternatives 2-6, would result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

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

Transportation conditions under Alternative 3 would be improved (reduced crowding and congestion) by management of visitor use to lower levels through the implementation of a day use parking permit system for the East Yosemite Valley, expanded regional transit service, improved circulation patterns, and reduced vehicle-pedestrian conflicts. Although the number of parking spaces would be reduced, the lower visitor level would reduce the ratio of visitors to parking spaces, an improvement that would be clearly detectable (by 10% to 20% of visitors traveling in the Merced River corridor) during the peak season of visitation. Overall, with implementation of mitigation measures MM-TRA-1 through MM-TRA-5, as applicable (see Appendix C), Alternative 3 would have parkwide, moderate, long-term, beneficial impacts on transportation conditions.

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

The past, present, and foreseeable projects that would affect transportation in the Merced River corridor under Alternative 3 would be the same as those under Alternative 1. Alternative 3, in combination with these cumulative projects, would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through current and reasonably foreseeable projects would further enhance the moderate, long-term, beneficial impacts on transportation that would result from Alternative 3.

Environmental Consequences of Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities (e.g., demolition of Sugar Pine and Ahwahnee bridges to enhance the mid-elevation alluvial floodplain of the Merced River). The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 4, actions to manage visitor use and facilities would slightly decrease opportunities for camping in the river corridor and decrease lodging, expand regional bus service, decrease day parking, and improve traffic circulation through a marked reduction in visitor use. A proactive on-site, day use traffic and parking management program would be implemented to encourage dispersion of visitation to the park's most congested areas. Overflow parking during times of peak visitation would be provided in El Portal at the Abbieville site, with the NPS shuttle system expanded to serve this new location. These management actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, in Segment 2, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities. Construction activities would include the removal of a portion of Southside Drive through Stoneman Meadow and realignment of the road through the Boys Town area. Northside Drive would be retained in its current configuration, though Northside Drive would be re-aligned at Village Drive to meet standards for a proper four-way intersection and improved performance. No roundabouts would be necessary under Alternative 4. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. A three-way intersection would be added from Sentinel Drive to the Yosemite Village Day Use Area Parking Lot to improve traffic flow and to alleviate congestion at nearby intersections. The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 4, in Segment 2, actions to manage visitor use and facilities include a traffic and parking management program. About 292 fewer parking spaces would be provided for Yosemite Valley visitors,

based on a calculation of the parking needed to accommodate the reduced use levels in the river corridor; no parking would be added in Segment 2B (West Valley). Due to the reductions in the supply of day parking under Alternative 4 as compared to current peak demand, a system of parking fees, and traffic and parking diversions would be instituted. This system would be provided during the peak use season to manage parking for visitors to Segment 2A (East Valley). Visitor orientation and wayfinding would be improved by linking the Yosemite Village day-use parking area to Yosemite Village visitor services via pathways. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort.

The total number of daily visitors to Segment 2A (East Valley) under Alternative 4 would be 17,000 people, an approximate 19% decrease from existing peak-day conditions. The amount of overnight lodging would decrease slightly from existing conditions under Alternative 4 in Segment 2, from 1,034 units to 823 units. The number of campsites in Segment 2 would increase, from 466 to 701 sites.

Regional transit service into Yosemite Valley would be expanded during the peak summer season under Alternative 4, with new service on the Highway 41 corridor. Additionally, the Valley shuttle would be extended to Segment 2B (West Valley) and serve the El Capitan Cross-over and Bridalveil Fall areas. Transportation and circulation would be improved due to lower use levels. When combined, these actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions within Yosemite Valley.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segment 2.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, in Segments 3 and 4, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities.

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

Under Alternative 4, no significant changes to the kinds and amounts of use are proposed in Segment 3, and the only changes in Segment 4 would be the development of a new remote parking area and increased employee housing (added to replace the housing removed from Yosemite Valley). The total number of daily visitors to actively recreate in Segments 3 and 4 with Alternative 4 would not change from existing peak-day conditions.

A new remote, 200-space visitor day parking area would be provided at the Abbieville/Trailer Court area in Segment 4, primarily to be used for visitor access to Yosemite Valley. The use associated with this parking area is accounted for in the Valley daily visitation levels reported for Segment 2 above. Public transit options along Segments 3 and 4 would be expanded as described for Segment 2 above. Segment 3 is considered a "pass through" segment, and therefore, it does not contain any stops for passengers to enter or depart from transportation services that travel along the river corridor through the Merced River gorge. Regional transit buses in Segment 4 would stop at the new day parking area. When combined, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, minor, beneficial impacts on transportation and circulation within Segments 3 and 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, in Segment 7, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work.

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

In addition to the actions common to Alternatives 2-6, Under Alternative 4 four round trip regional transit runs would be added through Wawona in Alternative 2. The regional transit service would accommodate both employees and visitors. The total number of daily visitors to Segment 7 under Alternative 2 would increase slightly over Alternative 1 peak-day levels, primarily due to increased transit use.

Segment 7 Impact Summary: Impacts of Alternative 4, in conjunction with those actions that are common to Alternatives 2-6, would result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

Summary of Impacts from Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

Transportation conditions under Alternative 4 would be improved (reduced crowding and congestion) by management of visitor use to lower levels through the implementation of a parking fee, and traffic and parking diversion system, expanded regional transit and Valley shuttle service, improved circulation patterns, and reduced vehicle-pedestrian conflicts. Although the number of parking spaces would be reduced, the lower visitor level would reduce the ratio of visitors to parking spaces, an improvement that would be slightly detectable (by 5% to 10% of visitors traveling in the Merced River corridor) during the peak season of visitation. Overall, with implementation of mitigation measures MM-TRA-1 through MM-TRA-5, as applicable (see Appendix C), Alternative 4 would have parkwide, minor, long-term, beneficial impacts on transportation conditions.

Cumulative Impacts from Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

The past, present, and foreseeable projects that would affect transportation in the Merced River corridor under Alternative 4 would be the same as those described above for Alternative 2. Alternative 4, in combination with these cumulative projects, would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through current and reasonably foreseeable project would further enhance the moderate, long-term, beneficial impacts on transportation that would result from the implementation of Alternative 4.

Environmental Consequences of Alternative 5: Enhanced Visitor Experiences and Essential River Bank Restoration

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities. The transportation effects of changes to the amount of overnight accommodations (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 5, actions to manage visitor use and facilities would increase opportunities for camping in the river corridor and slightly increase lodging, expand regional bus service, increase day-use parking in two primary areas (Yosemite Lodge and El Portal), and improve traffic circulation with a new traffic circle and a grade-separated pedestrian crossing in Yosemite Valley. Alternative 5 also would include a traffic and parking management program, which while focused on the Valley, would improve transportation conditions parkwide. Alternative 5 would accommodate current average day use for the summer season. These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, in Segment 2, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities. Northside Drive would be retained in its current configuration, but a traffic circle (at the Northside Drive / Village Drive [Yosemite Village day-use parking area] intersection) would be constructed. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. The park would evaluate the cultural, physical, biological, economic, and transportation-related tradeoffs associated with alternative designs to resolve the pedestrian/vehicle conflict at this location. A three-way intersection would be added from Sentinel Drive to the Yosemite Village Day Use Area Parking Lot to improve traffic flow and to alleviate congestion at nearby intersections. The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 5, in Segment 2, actions to manage visitor use and facilities include a traffic and parking management program, additional parking, and changes to camping and overnight accommodations. The

total number of daily visitors to East Yosemite Valley under Alternative 5 would be 20,100 people, an approximately 4% decrease from existing peak-day conditions.

The day use capacity management system under Alternative 5 would include implementation of the El Capitan Cross-over Traffic Diversion system, under which the maximum number of people at one time (PAOT) in East Yosemite Valley would be limited to 18,710 (managed through 5,300 vehicles at one time and 40 buses at one time). This system would reduce overall congestion and crowding in Segment 2 on peak-use days. In the future, the park may consider implementing a day-use parking reservation system if the traffic diversion at El Capitan Cross-over is no longer sufficient or reasonable to manage the level of use experienced in East Yosemite Valley. The management system would improve transportation conditions in the Valley, particularly on peak days.

Under Alternative 5, the amount of overnight lodging would remain essentially the same as existing conditions in Segment 2, increasing slightly from 1,034 units to 1,082 units, a 5% increase. The number of campsites in Segment 2 would increase from 466 to 640 sites, a 37% increase.

In addition to the day use capacity management system, transportation and parking improvements would improve traffic flow and circulation. The parking inventory for visitors to the Valley would increase by approximately 183 parking spaces, which would have a negligible to minor beneficial impact on circulation. The grade-separated crossing at the Yosemite Lodge-Lower Yosemite Falls intersection would also reduce congestion and enhance pedestrian safety.

Regional bus service into Yosemite Valley would be expanded during the peak summer season under Alternative 5. The regional transit service would accommodate both employees and visitors. Additionally, the Valley shuttle would be extended to Segment 2B (West Valley) to serve the El Capitan Cross-over and Bridalveil Fall areas and a seasonally available shuttle would operate between the El Portal Remote Visitor Parking Area and Yosemite Valley.

Although the total number of daily visitors to East Yosemite Valley would be only slightly reduced from existing peak-day numbers, the implementation of the user capacity management program, additional parking spaces, and transportation system improvements would decrease traffic jams, and improve the chance that visitors entering Yosemite have a place to park (thus eliminating unnecessary circling). When combined, these actions would have segmentwide, major, long-term, beneficial impacts on transportation conditions within Yosemite Valley.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, major, beneficial impacts on transportation and circulation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, in Segments 3 and 4, actions to protect and enhance river values would have segmentwide, minor, adverse short-term transportation impacts associated with restoration activities.

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

Under Alternative 5, no significant changes to the kinds and amounts of use are proposed in Segment 3, and the only changes in Segment 4 would be the development of a new remote parking area and increased

employee housing (added to replace the housing removed from the Valley). The total number of daily visitors to actively recreate in Segments 3 and 4 under Alternative 5 would not change from existing peak-day conditions.

A new remote, 300-space visitor day parking area would be provided at the Abbieville/Trailer Court area in Segment 4, primarily to be used for visitor access to Yosemite Valley. The use associated with this parking area is accounted for in the Valley daily visitation levels reported above for Segment 2. Public transit options along Segments 3 and 4 would be expanded as described for Segment 2 above. Segment 3 is considered a "pass through" segment, and therefore, it does not contain any stops for passengers to enter or depart from transportation services that travel along this corridor. A seasonally available shuttle would operate between the El Portal Remote Visitor Parking Area and Yosemite Valley. When combined, these actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segments 3 and 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, in Segment 7, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work.

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

In addition to the actions common to Alternatives 2-6, under Alternative 5 twelve round trip regional transit runs would be added through Wawona. The regional transit service would accommodate both employees and visitors. The total number of daily visitors to Segment 7 under Alternative 5 would increase slightly over Alternative 1 peak-day levels, primarily due to increased transit use.

Segment 7 Impact Summary: Impacts of Alternative 5, in conjunction with those actions that are common to Alternatives 2-6, would result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

Summary of Impacts from Alternative 5: Enhanced Visitor Experience and Essential River Bank Restoration

Under Alternative 5, the park would increase access to parking and camping, and maintain the current levels of overnight lodging. Transportation conditions would be improved (reduced crowding and congestion) by better traffic management, improved circulation patterns (i.e., a traffic circle) and parking, expanded regional transit and Valley shuttle service, and reduced vehicle-pedestrian conflicts, which would be highly detectable (by more than 20% of visitors traveling in the Merced River corridor) during the peak season of visitation. Overall, with implementation of mitigation measures MM-TRA-1 through MM-TRA-5, as applicable (see Appendix C), Alternative 5 would have parkwide, major, long-term, beneficial impacts on transportation conditions.

Cumulative Impacts from Alternative 5: Enhanced Visitor Experience and Essential River Bank Restoration

The past, present, and foreseeable projects that would affect transportation in the Merced River corridor under Alternative 5 would be the same as those described for Alternative 2. Alternative 5, in combination with these cumulative projects, would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through current and reasonably foreseeable projects would further enhance the moderate, long-term, beneficial impacts on transportation that would result from the implementation of Alternative 5.

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

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities (e.g., potential demolition of Sugar Pine Bridge to enhance the mid-elevation alluvial floodplain of the Merced River). The transportation effects of changes to the amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration (protect and enhance) actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 6, actions to manage visitor use and facilities would increase opportunities for camping in the river corridor and increase lodging, expand regional bus service, increase day parking, and improve traffic circulation with new roundabouts and a pedestrian underpass in Yosemite Valley. Alternative 6 also includes a traffic and parking management program, which while focused on the Valley, would improve transportation conditions parkwide. Alternative 6 would provide enough day parking in the river corridor to accommodate current peak use, and at an average 3% growth per year, enough parking to accommodate day use demand for the next five years. These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, in Segment 2, actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities. Northside Drive would be retained in its current configuration, but roundabouts (at Northside Drive / Village Drive [Yosemite Village day-use parking area], and Sentinel Drive / Northside Drive [Bank 3-Way]) would be constructed. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. A three-way intersection would be added from Sentinel Drive to the Yosemite Village Day Use Area Parking Lot to improve traffic flow and to alleviate congestion at nearby intersections. The transportation impacts of changes to the

amount of overnight accommodation (i.e., campsites and lodging units) as part of the restoration actions are described below under Impacts of Actions to Manage User Capacity, Land Use, and Facilities.

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

Under Alternative 6, in Segment 2, actions to manage visitor use and facilities include a traffic management program involving diversion at the El Capitan Cross-over and possible day-use parking reservation system. In addition, the park would provide additional parking, camping, and overnight accommodations. The total number of daily visitors to East Yosemite Valley under Alternative 6 would be 21,800 people, an approximately 4% increase from existing peak-day conditions. Overall, Alternative 6 would accommodate the majority of peak use demand for visitation in the Valley.

Alternative 6 would include a phased-in progressive management plan for reducing overall congestion and creating a visitor-friendly traffic management program. This would include traffic diversions at El Capitan Cross-over to ensure capacity is not exceeded in Segment 2A (East Valley) during peak season days. In the future, the park may also consider implementing a day-use parking reservation system if the traffic diversion at El Capitan Cross-over is no longer sufficient or reasonable to manage the level of use experienced in East Yosemite Valley. Day use would be 13,700 visitors per day. Both regional transit and Valley shuttle options would be expanded, the latter extended to Segment 2B (West Valley) to serve the El Capitan Cross-over and Bridalveil Fall areas.

The amount of overnight lodging would increase from existing conditions under Alternative 6 in Segment 2, from 1,034 units to 1,248 units. The number of campsites in Segment 2 would increase from 466 to 739 sites.

About 261 parking spaces would be added for this segment, an 11% increase over the spaces currently available (including new visitor parking west of Yosemite Lodge [300 spaces] and in Segment 2B (West Valley) at the El Capitan Cross-over [250 spaces]), which would reduce vehicles circulating through the Valley looking for parking. The above-mentioned roundabouts and pedestrian underpass would result in less congestion and enhanced pedestrian safety.

Regional bus service into Yosemite Valley would be expanded during the peak summer season under Alternative 6. The regional transit service would accommodate both employees and visitors and would add an additional stop at the El Portal remote day use parking area. Additionally, the Valley shuttle would be extended to Segment 2B (West Valley) to serve the El Capitan Cross-over and Bridalveil Fall areas.

Although the total number of daily visitors to East Yosemite Valley would be slightly higher than existing peak-day numbers, the implementation of the day use capacity management system, additional parking spaces, and transportation system improvements would lessen traffic jams, and ensure that visitors entering the park have a place to park (thus eliminating unnecessary circling). These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segment 2 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, in Segments 3 and 4, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities.

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

Under Alternative 6, no significant changes to the kinds and amounts of use are proposed in Segment 3, and the only changes in Segment 4 would be the development of a new remote parking area and increased employee housing (added to replace the housing removed from the Valley). The total number of daily visitors to actively recreate in Segments 3 and 4 with Alternative 6 would not change from existing peak-day conditions.

A new remote 200-space visitor day parking area would be provided at the Abbieville/Trailer Court site in Segment 4, primarily to be used for visitor access to Yosemite Valley. The use associated with this parking area is accounted for in the Valley daily visitation levels reported above for Segment 2. Public transit options along Segments 3 and 4 would be expanded as described for Segment 2. Segment 3 is considered a "pass through" segment, and therefore, it does not contain any stops for passengers to enter or depart from transportation services that travel along this corridor. Regional transit buses in Segment 4 would stop at the new day parking area. These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.

Segments 3 & 4 Impact Summary: Actions to manage user capacities, land use, and facilities would have segmentwide, long-term, moderate, beneficial impacts on transportation and circulation within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, in Segment 7, actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work.

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

In addition to the actions common to Alternatives 2-6, Under Alternative 5 twelve round trip regional transit runs would be added through Wawona in Alternative 2. The regional transit service would accommodate both employees and visitors. The total number of daily visitors to Segment 7 under Alternative 2 would increase slightly over Alternative 1 peak-day levels, primarily due to increased transit use.

Segment 7 Impact Summary: Impacts of Alternative 5, in conjunction with those actions that are common to Alternatives 2-6, would result in segmentwide, long-term, minor, beneficial impacts on transportation conditions in Segment 7.

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

Transportation conditions under Alternative 6 would be improved (reduced crowding and congestion) by changes to the roadway network (i.e., roundabouts and a pedestrian underpass) to improve traffic flow and reduce pedestrian/vehicle conflicts), visitor and parking management strategies, and expanded regional transit and Valley shuttle service. Alternative 6 would provide enough day parking in the river corridor to accommodate current peak use, and with circulation changes, the improvements would be clearly detectable (by 10% to 20% of visitors traveling in the Merced River corridor) during the peak season of visitation. Overall, with implementation of mitigation measures MM-TRA-1 through MM-TRA-5, as applicable (see Appendix C), Alternative 6 would have parkwide, moderate, long-term, beneficial impacts on transportation conditions.

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

The past, present, and foreseeable projects that would affect transportation in the Merced River corridor under Alternative 6 would be the same as those presented above for Alternative 2. Alternative 6, in combination with these cumulative projects, would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through current and reasonably foreseeable projects would further enhance the moderate, long-term, beneficial impacts on transportation that would result from implementation of Alternative 6.

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Energy Consumption and Climate Change

Affected Environment

This discussion is not organized by river segment because impacts related to energy consumption and climate change tend not to be specific to the segments.

Regulatory Framework

Federal Laws and Policies

The Energy Policy Act

The Energy Policy Act of 2005 contains several provisions designed to reduce energy use by federal agencies. These include annual energy reduction goals, renewable energy purchase targets, reauthorization of Energy Savings Performance Contracts, required federal procurement of Energy Star or similar products, and updates to green building standards with emphasis on energy efficiency, among other measures. The act also contains an incentive program to encourage agencies to reinvest utility cost savings into future energy projects.

Energy and Independence Security Act and Corporate Average Fuel Economy Standards

The Energy and Independence Security Act of 2007 amended the Energy Policy and Conservation Act to further reduce fuel consumption and expand production of renewable fuels. The Energy and Independence Security Act's most significant amendment includes a statutory mandate for the National Highway Traffic Safety Administration to set passenger car Corporate Average Fuel Economy standards for each model year at the maximum feasible level. This statutory mandate eliminated the former default standard of 27.5 miles per gallon. The Energy and Independence Security Act requires that standards for model years 2011 through 2020 be set sufficiently high to achieve an industrywide goal of 35 miles per gallon on average for passenger cars and light-duty trucks. The rulemaking for this goal, as requested by President Barack Obama, was divided into two parts. The first part, which was published in the Federal Register in March 2009, included standards for model year 2011 to meet the statutory deadline (i.e., March 30, 2009). The second part of the rulemaking applies to model year 2012 and subsequent years. These would be the maximum standards feasible under the limits of the Energy and Independence Security Act and the Energy Policy and Conservation Act. The National Highway Traffic Safety Administration and U.S. Environmental Protection Agency (EPA) are working in coordination to develop a national program targeting model year 2012 through 2016 passenger cars and light trucks.

U.S. Environmental Protection Agency Actions

In response to the issue of climate change, the EPA has taken actions to regulate, monitor, and potentially reduce greenhouse gas (GHG) emissions, as briefly summarized below.

Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

On April 23, 2009, the EPA published its proposed *Endangerment and Cause or Contribute Findings for Greenhouse Gases* under the Clean Air Act (Endangerment Finding) in the Federal Register. The

Endangerment Finding is based on Section 202(a) of the Clean Air Act, which states that the EPA administrator should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The proposed rule addresses Section 202(a) in two distinct findings. The first deals with whether the concentrations of the six key GHGs (i.e., carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perflurorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and thus increase the threat of climate change.

The EPA administrator proposed the finding that atmospheric concentrations of GHG endanger the public health and welfare within the meaning of Section 202(a) of the Clean Air Act. The evidence supporting this finding consists of "high atmospheric levels" of anthropogenic GHG emissions, which are likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, higher intensity storms) are a threat to public health and welfare.

The EPA administrator also proposed the finding that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. The proposed finding states that, in 2006, motor vehicles were the second largest contributor to domestic GHG emissions (24% of the total), behind electricity generation. Furthermore, in 2005, the United States was responsible for 18% of global GHG emissions. Thus, GHG emissions from motor vehicles and motor vehicle engines were found to contribute to air pollution that endangers public health and welfare.

On December 7, 2009, the EPA finalized its decision that GHG emissions from motor vehicles constitute an "endangerment" under the Clean Air Act. This finding allowed for the establishment of GHG emissions standards for new motor vehicles. In June 2009, in a related action, the EPA granted California a waiver under the federal Clean Air Act, allowing the state to impose its own, stricter GHG regulations for vehicles beginning in 2009.

Notice of Intent for Development of New Greenhouse Gas and Fuel Economy Standards

In September 2010, the National Highway Traffic Safety Administration, together with the EPA, published a Notice of Intent for the development of new GHG and fuel economy standards for vehicle model years 2017 through 2025. The agencies published a Supplemental Notice of Intent in December 2010, with a final rule due to be adopted in 2012 (NHTSA 2010).

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (House Rule 2764; Public Law 110-161), which required the EPA to develop "mandatory reporting of Greenhouse Gas above appropriate thresholds in all sectors of the economy." The Reporting Rule applies to most entities that emit 25,000 metric tons of carbon dioxide equivalent or more per year. Starting in 2010, facility owners were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandated recordkeeping and administrative requirements so that the EPA could verify annual GHG emissions reports.

Executive Orders

Executive order 13423: Strengthening Federal Environmental, Energy, and Transportation Management. This order calls upon all federal agencies to adopt an Environmental Management System, which is a process developed by the International Organization for Standardization. Furthermore, this order requires the Office of Management and Budget (OMB) Director to issue instructions concerning periodic evaluation, budget matter, and acquisition relating to agency implementation of the Order. OMB issues budget guidance through updates to Circular No. A-11. OMB will also continue to track agencies' progress on EO and EPACT goals through the three management scorecards on environmental stewardship, energy, and transportation.

Executive Order 13514: Federal Leadership in Environmental, Energy and Economic Performance. This order directs federal agencies, including the National Park Service (NPS), to measure, report, and reduce their GHG emissions from direct and indirect activities. Pursuant to Executive Order 13514, the NPS has established its Climate Friendly Parks Program. To date, many federal agencies, including the NPS, have developed GHG emission inventories and are in the process of developing emissions reduction plans.

Climate Change Context

The term *global warming* refers to the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century. The evidence of global warming is now considered indisputable (Intergovernmental Panel on Climate Change 2007), with global surface temperatures increasing an average of approximately 1.33 degrees Fahrenheit over the past 100 years. Continued warming over the next 100 years is projected to increase the average global temperature between 2 and 11 degrees Fahrenheit.

The causes of this warming have been identified as both natural processes and human activities. The Intergovernmental Panel on Climate Change concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. However, after 1950, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries.

Greenhouse gasses naturally trap heat by impeding the exit of solar radiation that has entered the earth's atmosphere. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in atmospheric concentrations of these gases during the past 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and causing the increase in average global temperature.

The principal GHGs of concern are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Each of the principal GHGs has a long atmospheric lifetime (one year to several thousand years). In addition, the potential heat-trapping ability of each gas varies significantly. CH_4 is 23 times as potent as CO_2, and SF_6 is 22,200 times more potent than CO_2. Conventionally, GHGs have been reported as CO_2 equivalents (CO_2e). CO_2e takes into account the relative potency of non-CO_2 GHGs and converts their quantities to an equivalent amount of CO_2 so that all emissions can be reported as a single quantity.

California Climate Trends and Associated Impacts

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California, though at different rates. The annual minimum temperature averaged over the entire state increased 0.33 degree Fahrenheit per decade during the period 1920 to 2003, and the annual maximum temperature increased an average of 0.1 degree Fahrenheit per decade (Moser et al. 2009).

With respect to California's water resources, the most significant impacts of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote et al. 2005; Knowles and Cayan 2006), and the snowpack in the Sierra Nevada range is melting earlier in the spring (Kapnick and Hall 2009). The average early-spring snowpack in the Sierra Nevada has decreased by about 10% during the last century — a loss of 1.5 million acre-feet of snowpack storage (DWR 2008). These changes have significant implications for water supply, flooding, aquatic ecosystems, forest health, and recreation, both throughout the state and within Yosemite National Park (NPS 2009h; Lutz et al. 2009; Saunders et al. 2009).

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during the demolition, construction, and operational phases. The primary GHGs associated with land use and development projects are CO_2, CH_4, and N_2O.

Statewide Greenhouse Gas Emissions

The California Air Resources Board estimated that in 2008 California produced about 478 million gross metric tons (about 525 million U.S. tons) of CO_2e. The Air Resources Board found that transportation is the source of 37% of the state's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 24% and industrial sources at 19%. Commercial and residential fuel use (primarily for heating) accounted for 9% of GHG emissions (CARB 2011c).

Parkwide Greenhouse Gas Emissions

National Park Service Climate Friendly Parks Program. Yosemite National Park is a participant in the NPS's Climate Friendly Parks Program. Funded through an interagency agreement between the EPA and the NPS, this program assists national parks in the development of short- and long-term comprehensive strategies for reducing their GHG and criteria air pollutant emissions. The program also includes a public awareness and education component.

National Park Service Pacific West Region Directive PW-047, October 31, 2006. This directive provides policies pertaining to renewable energy generated on-site. Specifically, it encourages conversion to renewable sources of energy, and allows for the purchase of green power (including wind, solar, biomass, and geothermal) when on-site renewable energy systems are not feasible. Alternatively, this directive also permits the purchase of green power tags, which are renewable energy certificates from a source that does not directly connect to the local utility that supplies park facilities.

Yosemite National Park Action Plan, November 2006. In 2006, Yosemite National Park published its first comprehensive climate action plan. The plan outlines a framework for actions the park will take to further the mission of the Climate Friendly Parks Program. Emission reduction measures identified in the plan include utilizing alternative energy sources, increasing lighting efficiency, promoting and engaging in energy-efficient building design, and optimizing energy use, among others (NPS 2006C). As part of this effort, the park committed to conducting GHG emissions inventories, monitoring progress toward

emissions reductions, and to continuing to explore additional emission-reducing actions and incorporating them into subsequent climate action plans.

NPS Green Parks Plan (GPP). The GPP, adopted in April 2012, defines a vision and long-term strategic plan for sustainable management of NPS operations. Goals of the GPP related to GHGs include the following:

1. The NPS will reduce Scope 1 and Scope 2 GHG emissions by 35 percent by 2020 from the 2008 baseline. (Scope 1 and Scope 2 emissions are associated with on-site fossil fuel combustion and electricity consumption from the grid, respectively.)
2. The NPS will reduce Scope 3 GHG emissions by 10 percent by 2020 from the 2008 baseline. (Scope 3 emission sources such as commuter travel and off-site wastewater treatment are indirect in nature.)
3. The NPS will develop and implement guidance on adapting the location, structure, or function of park facilities in anticipation of climate change, including severe weather impacts.

Secretarial Order 3285: Renewable Energy Development by the Department of the Interior. This Order establishes the development of renewable energy as a priority for the Department of the Interior and establishes a Departmental Task Force on Energy and Climate Change. This Order also amends and clarifies Departmental roles and responsibilities to accomplish this goal.

Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land and Other Natural and Cultural Resources. This Order establishes a department-wide approach for applying scientific tools to increase understanding of climate change and to coordinate an effective response to its impacts on tribes and on the land, water, ocean, fish and wildlife, and cultural heritage resources that the Department of the Interior manages.

A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park. The latest community-wide GHG inventory, depicted in Table 9-115, presents life-cycle GHG emissions for years 2008 through 2011 and includes Scope 1, 2, and 3 emissions. The largest contribution of GHG emissions comes from the miles traveled by visitors within the park, accounting for an average of 40 percent of the inventory; followed by food consumption at 30 percent; energy (electricity and stationary fuels) at 17 percent; NPS and DNC car usage at 8 percent; waste at 3 percent; waste water at 1.6 percent; and cement at about 0.4 percent. Although fire contributes to total park emissions, wildfires would still occur even in the absence of fire management, resulting in the same level of emissions. Therefore, GHG emissions due to fire are omitted from the estimates shown here (Villalba et al. 2012a).

A summary of 2008 through 2011 energy consumption within Yosemite Valley is shown in Table 9-116.

As is evident from the table, stationary sources (e.g., lighting, heating) within Yosemite Valley consume electricity, fuel oil and propane. NPS and Delaware North Companies Parks and Resorts at Yosemite (DNC) mobile sources (e.g., motor vehicles) consume gasoline and diesel fuel, and the majority of visitor vehicles operate on gasoline. It should be noted that energy consumption in Yosemite Valley varies from year to year. Measures taken by the park and the park concessioner to reduce energy consumption and GHG emissions include: (1) purchase of 24 hybrid electric-diesel shuttle buses that provide free transit to 2.5 million park visitors within the Valley annually (NPS 2005c), (2) installation of high-efficiency heating and cooling systems in employee housing (NPS 2007g), use of reclaimed water for irrigation (NPS 2008g), and installation at the El Portal Administrative Site of the largest solar energy system in the national park system (NPS 2011q), among other actions.

TABLE 9-115: PARK-WIDE GHG EMISSIONS FOR YEARS 2008-2011

Scope	Source[a]		Year 2008	Year 2009	Year 2010	Year 2011
Scope 1 and 2 In-boundary Emissions (metric tons/yr)	Electricity		8,223	8,207	7,836	7,537
	Transportation Fuels	YNP-PTW	3,798	3,884	3,884	4,032
	Stationary Fuels	Propane	3,400	3,629	3,622	3,748
		Diesel	7,774	8,168	8,276	8,789
	Wastewater		2,114	1,970	1,805	2,036
Scope 3 Upstream and Downstream Emissions to Supplement In-boundary emissions (metric tons/yr)	Electricity		258	238	272	275
	Transportation Fuels	YNP-PTW	903	922	919	944
		Visitors (bus) WTW	949	790	953	924
		Visitors (non-bus rec) WTW	44,136	48,483	50,185	50,718
		Commuting-cars WTW	5,106	5,106	5,106	5,106
		Commuting-buses WTW	228	258	157	151
	Stationary Fuels	Propane	530	565	564	584
		Diesel	1,943	2,042	2,069	2,197
	Solid Waste	Landfill	7,877	8,300	6,775	3,405
		Compost	--	--	200	474
	Cement		275	275	275	275
	Food		38,020	38,324	38,327	38,795
Scope 1 and 2 Total			25,309	25,858	25,424	26,142
Scope 3 Total			100,224	105,303	105,847	103,848
TOTAL (metric tons/yr)			125,533	131,161	131,271	129,990
Visitors			3,431,514	3,737,472	3,901,408	3,951,393
TOTAL GHG per visitor (kg CO_2e/visitor)			36.58	35.09	33.65	32.90

NOTE:

[a] Notes: YNP = Yosemite National Park; WTP = Well-to-Pump emissions; PTW = Pump-to-Wheel emissions; WTW = Well-to-Wheel emissions or life cycle emissions, which is also the sum of WTP and PTW

SOURCE: Villalba *et al* 2012a.

TABLE 9-116: ENERGY CONSUMPTION TOTALS USED IN THE GHG EMISSIONS INVENTORY 2008-2011

Source		Total Consumption			
		Year 2008	Year 2009	Year 2010	Year 2011
Electricity (Gigawatt-hours)		23.63	22.00	23.19	22.62
Transportation Fuels	YNP (gallons)	462,500	486,913	471,259	512,985
Stationary Fuels	Propane (gallons)	583,818	623,123	622,049	643,625
	Diesel (gallons)	761,206	799,838	810,438	643,625

SOURCE: Villalba *et al.* 2012b

Environmental Consequences Methodology

Changes in energy consumption in the Merced River corridor are qualitatively evaluated by assessing changes in housing, park and concessioner facilities, camping, and vehicle fuel use. The climate change analysis evaluates both whether and how each alternative could contribute to climate change. Although there is a broad consensus in the scientific community that human activities are contributing to global warming, there is limited guidance available on how to properly analyze the impact of local development projects with respect to climate change. This is particularly true where the project is unlikely to result in large changes in local or regional emissions. This evaluation considers changes in the amount of energy consumed and related levels of direct and indirect GHG emissions, the alteration of land uses that sequester GHGs, and changes in land uses. Additional discussion of the effects of climate change is included in the following sections of this EIS: Hydrology, Floodplains, and Water Quality; Vegetation and Wetlands; Wildlife; and Special Status Species.

- **Context.** Any change in energy consumption and GHG emissions in the Merced River corridor would be negligible at a statewide and global scale. However, the contribution of each alternative will be evaluated.
- **Intensity.** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts would not be detectable and would have no discernible effect on the amount of energy consumed or the amount of GHG emissions (assumed to be 1% or less of threshold) generated. Minor impacts would be slightly detectable but would not be expected to have an overall effect on those conditions. For GHG emissions, minor impacts are assumed to occur up to 50% of the applicable threshold. Moderate impacts would be clearly detectable and could have an appreciable effect on energy use or GHG emissions (assumed to occur at emission levels greater than 50% but less than the applicable threshold). Major impacts would have a substantial, highly noticeable influence on and could permanently alter those conditions. For GHG emissions, major impacts are assumed to occur when emissions exceed the applicable threshold.

  For this analysis, the EPA Mandatory Reporting Rule level of 25,000 metric tons of CO_2e per year is used to identify a major source of GHGs.
- **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 types of activities. A long-term impact would have a long-lasting or permanent effect on energy use, emissions, or land use.
- **Type of Impact.** Impacts are evaluated for whether they would be beneficial or adverse in terms of energy consumption and climate change. Beneficial impacts would reduce energy consumption, reduce emissions, or change land uses to those that would reduce emissions. Adverse impacts would increase energy consumption, increase emissions, or change land uses to those that would make it more difficult to reduce emissions.

Environmental Consequences of Alternative 1 (No Action)

Impacts Common to Segments 1–8

Alternative 1 (No Action) assumes a continuation of existing regulations and management practices that govern energy consumption and climate change into the foreseeable future. No new structures would be constructed in the Merced River corridor, except for minor structures that are small temporary, easily removed, and not habitable; designed to support existing uses, systems, and programs; located within the existing building footprint; and not created solely for commercial purposes. Temporary housing for employees displaced by the 2008 rockfall would continue as needed at Huff House, Lost Arrow, Yosemite

Lodge, Ahwahnee concessioner employee housing area, Boys Town, and El Portal Trailer Village, and for NatureBridge students at Curry Village. Housing for NPS employees and park partner staff would remain at current levels and locations.

Recent efforts by the park and primary park concessioner to reduce overall energy consumption and GHG emissions include purchasing 24 hybrid electric-diesel shuttle buses; replacing existing park vehicles with alternative-fuel and hybrid vehicles; implementing additional recycling and composting measures; using reclaimed water for irrigation; as well as installing energy-efficient appliances and lighting and passive heating and cooling systems in employee housing, solar panels on park housing units, and the largest solar energy system in the national park system (at the El Portal Administrative Site).

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

Under Alternative 1 (No Action), energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to those under Alternative 1. No new buildings or facilities would be constructed as part of Alternative 1, so no substantial new sources of energy consumption or emissions would be introduced. Although park visitation would be expected to increase at a rate of approximately 3% annually, Segments 1, 5, 6, and 8 do not have transportation facilities and are relatively inaccessible, so visitor use in these areas would not likely increase at the same rate as the more developed areas of the park. Alternative 1 would therefore result in a long-term, negligible, and adverse impact with respect to energy and GHG conditions along Segments 1, 5, 6, and 8.

Segments 1, 5, 6, & 8 Impact Summary. Implementation of Alternative 1 would result in result in segmentwide, long-term, negligible, and adverse impacts with respect to energy and GHG conditions along Segments 1, 5, 6, and 8.

Segments 2, 3, 4, and 7: Yosemite Valley, Merced River Gorge, El Portal, and Wawona (Nonwilderness)

Under Alternative 1, it is expected that visitation levels would increase primarily during the current nonpeak periods (i.e., the months on either side of the peak summer months and on weekdays during peak summer months). If this were to occur, then traffic congestion and associated GHG emissions during nonpeak periods could approximate current peak-period levels. Visitation could also increase during peak periods and, to the degree that such increases were to happen, traffic congestion and GHG emissions would marginally worsen. Mobile emissions sources would continue to include automobiles, trucks, and buses and would remain subject to state and federal emissions control standards and programs (including statewide Pavley and Low Carbon Fuel Standards), which are expected to lead to a decrease in GHG emissions in the foreseeable future. Because mobile sources from visitors are the primary source of non-fire related GHGs at the park (according to the latest inventory), and visitation is projected to increase over time, GHG emissions would be expected to increase in the future although at a reduced rate because of regulations governing mobile-source GHGs. Thus, increased traffic and traffic congestion under Alternative 1 would result in a long-term, minor, adverse impact with respect to energy consumption and GHG emissions.

Emissions sources would continue to include energy consumption at existing NPS and concessioner facilities in the Merced River corridor, regular maintenance activities, and campfires. Most of these sources would continue in the same manner and extent as under existing conditions, though some could decrease as

a result of sustainability measures and others would increase in relative proportion to visitor-use levels. Daily, routine, and intermittent operational maintenance intended to stabilize and protect park facilities, address visitor health and safety issues, and protect natural and cultural resources would continue as under existing conditions. This includes campground maintenance, road and trail maintenance, building and grounds maintenance, and utility system repair and maintenance throughout Segments 1–8. However, alternative-fuel or hybrid park vehicles would reduce GHG emissions associated with these activities. In addition, energy-efficiency upgrades and green building designs that have been and are currently being implemented by the NPS would continue to reduce energy consumption and associated GHG emissions under Alternative 1. Campfire usage could increase in proportion to the increased visitation, especially during nonpeak periods. Thus, GHG emissions would be expected to increase in the future in rough proportion to the increased usage of campfires under Alternative 1. Overall for these sources, the continuation of NPS climate action plan strategies under Alternative 1 would result in a long-term, moderate, beneficial impact with respect to energy consumption and GHG emissions.

Segments 1, 5, 6, & 8 Impact Summary. Implementation of Alternative 1 would result in long-term, moderate beneficial impacts associated with the continuation of NPS climate-action-plan sustainability strategies for Segments 2, 3, 4, and 7; however, because mobile sources generate the vast majority of all GHGs in the park, and visitation is projected to increase, Alternative 1 would result in an overall long-term, minor, adverse impact related to energy and GHGs.

Cumulative Impacts for Alternative 1 (No Action)

The discussion of cumulative impacts related to energy consumption and climate change is based on analysis of past, present, and reasonably foreseeable future actions in the Merced River corridor, in combination with the potential effects of Alternative 1. Past actions have generally resulted in the construction of new facilities to accommodate additional visitors and employees.

Past Actions

Past actions have had both adverse and beneficial impacts related to energy and climate change. Temporary constructions activities associated with the majority of past projects listed in Appendix B had short-term adverse effects on energy and climate change (i.e., from fuel usage and GHG emissions related to equipment and motor vehicle exhaust). However, most of these projects have had either no net adverse effects or beneficial effects on current or future energy and climate change conditions. The following past projects had long-term, minor, beneficial impacts on energy and climate change conditions, which would continue under Alternatives 2–6.

- The **Yosemite Area Regional Transportation System (YARTS)** was established in 2000 to provide an alternative to private vehicles accessing the park. YARTS was intended to expand the range of travel options for visitors to Yosemite Valley and to other primary park destinations, and for employees commuting to work in the park. It also provides a means for visitors to travel to Yosemite Valley when restricted-access measures are implemented for private vehicles during times of severe congestion. YARTS has had a long-term, beneficial effect by reducing the number of day visitors arriving in private vehicles.
- **Housing Projects** (i.e., Curry Village Employee Housing, Curry Village Huff House Temporary Housing, Yosemite Valley Lost Arrow Temporary Employee Housing, and Yosemite Valley Ahwahnee Temporary Employee Housing) involved the construction of housing and related facilities to accommodate concessioner employees. The housing units replaced concessioner housing lost in

the January 1997 flood and the rockfall events at Curry Village in October 2008 and were developed in consultation with litigants as part of a settlement agreement concerning the *Merced Wild and Scenic River Comprehensive Management Plan*. These actions provided temporary lodging for concessioner employees, and were needed to help meet immediate short-term housing needs for the park concessioner until permanent employee housing became available. Construction was completed from 2007 to 2009.

- **Yosemite Valley Shuttle Bus Stop Improvements** consisted of the preparation of preliminary design plans, environmental compliance documents, and construction drawings; the construction of six 10-foot by 80-foot concrete braking pads; the rehabilitation or replacement of 94,000 square feet of asphalt road approaches; and the construction of bus stop shelters. Construction was completed in 2010. These improvements support shuttle bus service in Yosemite Valley, resulting in a segmentwide, long-term, minor, beneficial impact.
- *East Yosemite Valley Utilities Improvement Plan* allowed efficient relocation and upgrading of utility systems to provide for utility needs while reducing long-term environmental impacts from utility repair and maintenance activities.
- **Hybrid Electric-Diesel Shuttle Bus Procurement** consisted of the purchase of diesel hybrid transit buses by the NPS. Hybrid bus operations result in long-term benefits to fuel usage and GHG emissions in comparison to diesel-only buses.
- The **replacement of existing park service vehicles** with alternative fueled or hybrid vehicles has also reduced GHGs.
- Installation of the **solar array and rehabilitation of existing facilities** has resulted in sustainable energy generation and reduced energy consumption.
- **Habitat Restoration Projects** (i.e., Cook's Meadow Ecological Restoration, DNC Yosemite Valley Ecological Restoration, Fern Springs Restoration, Happy Isles Fen Habitat Restoration, Merced River Ecological Restoration at Eagle Creek, and Red Peak Pass Trail Rehabilitation) included revegetation of affected areas, which resulted in long-term, beneficial effects resulting from CO_2 sequestration.

Present Actions

Present projects that could have a corridorwide, long-term, beneficial, cumulative effect on energy and climate change include:

- *Yosemite National Park Fire Management Plan/EIS*
- The following projects, which would individually, and in combination, encourage travel to the park by alternative (nonprivate vehicle) modes, and would manage traffic and parking to reduce congestion and associated fuel usage and GHG emissions:
    - Increased YARTS services
    - Changeable electronic signs in Mariposa, Midpines, and El Portal, alerting drivers to traffic conditions in Yosemite Valley
    - Computer-Aided Dispatch / Automatic Vehicle Locator
    - Software design and purchase to process raw data form vehicle counters to produce useful information for visitors on parking and traffic conditions

Restricted access measures will continue to control the volume of incoming vehicles when traffic and parking conditions in Yosemite Valley are over congested. The YARTS will continue to reduce the number of individual vehicles operated within the park.

Present projects listed immediately below could have a short-term, adverse effect from construction but a long-term, beneficial, cumulative effect on energy and climate change.

- The following transportation projects, could increase atmospheric carbon sequestration within affected areas:
    - Comprehensive Ecological Restoration Projects
- The following transportation projects could improve transportation circulation and thereby reduce fuel usage and GHG emissions:
    - South Park Intelligent Transportation System: electronic signs and groundhog automatic vehicle counters at entrance stations and parking lots to know when parking lots are full
    - Parking alternative option at the El Portal Maintenance Facility
- The following energy-related projects could improve facility efficiency and sustainability:
    - *Ahwahnee Comprehensive Rehabilitation Plan*

Present projects that could have a short-term adverse effect on energy and climate change include all projects not mentioned above that include some temporary construction activities. There would be no net long-term, adverse or beneficial impacts on energy and climate change from these projects.

Reasonably Foreseeable Future Actions

Similar to past actions, reasonably foreseeable future actions would result in both adverse and beneficial energy and climate change impacts. Reasonably foreseeable future projects that could have a long-term, beneficial, cumulative impact related to energy and climate change include the Transit Passenger Information System.

Other beneficial impacts for reasonably foreseeable future actions are similar to those discussed for past and present actions (i.e., the restricted access measures and increased YARTS services). Reducing traffic congestion and encouraging travel to the park by alternative (nonprivate vehicle) modes would have segmentwide, long-term, beneficial impacts on energy and climate change.

Reasonably foreseeable future actions that could have a short-term adverse effect on energy and climate change include all projects that would involve some temporary construction activities. There would be no net long-term, adverse or beneficial impacts on energy and climate change from these projects.

Overall Cumulative Impact

Because Alternative 1 would not involve substantial construction projects, it would not be expected to contribute to construction-related GHG impacts. Continued management of traffic, encouragement of alternative forms of transportation, and energy conservation measures would have long-term, beneficial energy and GHG impacts.

There would be long-term, beneficial impacts associated with the continuation of NPS climate-action-plan sustainability strategies. However, because mobile sources generate the substantial majority of all GHGs in the park, and visitation is projected to increase, Alternative 1 would result in an overall long-term, minor, adverse energy and GHG impact.

Environmental Consequences of Actions Common to Alternatives 2–6

Impacts Common to Segments 1–8

Changes to energy consumption in the Merced River corridor are qualitatively evaluated by assessing changes in housing, park and concessioner facilities, camping, and vehicle fuel usage. The climate change analysis evaluates both whether and how each alternative might contribute to climate change, which could include GHGs generated by short-term construction (i.e., equipment and on-road vehicle exhaust) and long-term operations (i.e., on-road vehicle exhaust, natural gas combustion, campfires, vegetation [sequestration] removal or restoration, and indirect sources from electricity generation).

Impacts of Actions to Protect and Enhance River Values

In general, the impacts of actions to protect and enhance river values would be associated with short-term construction activities, such as demolition, removal of trees, infrastructure, roads, habitat restoration, or trail development, which would require fuel consumption and would result in temporary emissions of GHGs. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap. Over the long-term, tree removal would reduce sequestration, whereas habitat restoration would increase sequestration. However, sequestration changes would be negligible overall.

Hydrologic/Geologic Resource Actions. Specific projects to protect and enhance the river's hydrologic and geologic values that would occur 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 short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

In general, the Impacts of Actions to Manage User Capacity, Land Use, and Facilities stem from short-term construction activities requiring fuel consumption and therefore temporary emissions of GHGs. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

Long-term impacts of these actions would primarily be associated with on-road vehicles (visitors and employees) and area pollution sources. Mobile sources would include automobiles, trucks, and buses and would remain subject to regulations governing mobile source GHG controls (including statewide Pavley and Low Carbon Fuel Standards), which are expected to lead to a continuing decrease in emissions per VMT for the foreseeable future. Since visitor on-road vehicular sources are the primary generator of GHG emissions in the park, the increase or decrease in visitor capacity and VMT would have the greatest impact on total GHGs.

GHG emissions sources would continue to include energy consumption at NPS and concessioner facilities located in the Merced River corridor, regular maintenance activities, and campfires. Actions that would reduce housing, campsites, or lodging would result in a proportional reduction in area source emissions, including emissions from maintenance/landscaping, natural gas combustion for heating/cooling, and campfires. Daily, routine, and intermittent operational maintenance would continue, including campground maintenance, road and trail maintenance, buildings and grounds maintenance, and utility system repair and maintenance throughout the park. However, alternative fuel or hybrid park vehicles would reduce the GHG emissions associated with these activities. In addition, energy-efficient upgrades and green building designs that have been and are currently being implemented by the NPS would continue to reduce energy consumption and associated GHG emissions under Alternatives 2–6. Overall for these sources, the continuation of NPS climate action plan strategies would result in a long-term, moderate, beneficial energy and GHG impact.

Impacts of specific projects are described below for each river segment where appropriate.

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. 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 crew and equipment time. As a result, these actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternatives 2-6 include: restoring 4.5 acres of riparian habitat in the area of Yosemite Lodge and 20 acres in the area of the Former Upper Pines Loop Campground; restoring impacted areas of Ahwahnee Meadow, including through removal of tennis courts; improving access and removing infrastructure from riparian areas at Cathedral Beach, Housekeeping Camp, and Bridalveil; constructing a boardwalk extension to reduce Sentinel Meadow trampling; removing one and formalizing five other traffic pullouts along El Portal Road; and fencing and vegetation management at Stoneman Meadow, restoring floodplain habitat at Devil's Elbow, and filling ditches not serving current operational needs. 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. As a result, these actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

Hydrologic/Geologic Resource Actions. Specific projects to protect and enhance the river's hydrologic and geologic values that would occur within Segment 2 under Alternatives 2-6 include: placing constructed logjams in the channel between Clarks and Sentinel Bridges; and 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 more than 17 weeks of crew and equipment time to

implement. As a result, these actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 rehabilitation of informal trails and parking in the vicinity rock art and rock shelters in the area of Bridalveil Falls, fencing and/or restricting access to the archeologically significant large bedrock mortar (pounding rock) next to Yosemite Falls Trail, restoration of impacted portions of Ahwahnee Meadow, and removal of abandoned infrastructure from the Bridalveil sewer plant to enhance oak recruitment. With the exception of abandoned infrastructure removal, 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 GHG emissions and energy consumption would be short-term, negligible, and adverse.

Scenic Resource Actions. Specific projects to protect and enhance the river's scenic values that would occur within Segment 2 under Alternatives 2-6 include: selectively thinning conifers and other vegetation in the vicinities of The Ahwahnee and Meadow, Bridalveil 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. As a result, these actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 Alternatives 2-6 involve substantial changes to campsites, visitor and administrative facilities, employee housing, and transportation. The construction, demolition, transport, and disposal activities associated with this work would contribute to a short-term, regional and local, moderate, adverse impact on air quality, even after implementation of Mitigation Measure AQ-MM-2 (see Appendix C). As such, the impact on GHG emissions and energy consumption would be short-term, minor, and adverse, as vehicle traffic and visitation would be reduced as a result.

Curry Village and Campgrounds. The park would remove the Happy Isles Snack Stand at Curry Village. At The Ahwahnee, the park would remove the 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. This work would require the use of heavy equipment, including excavators and skid steers. As such, the impact on GHG emissions and energy consumption would be short-term, negligible, and adverse.

Yosemite Village Day-use Parking Area 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. It would also construct a new maintenance building near the Government Utility Building. This work would require the use of heavy equipment, including excavators and skid steers. As such, the impact on GHG emissions and energy consumption would be short-term, negligible to minor, and adverse.

Yosemite Lodge. The park would remove the NPS Volunteer Office, post office, and snack stand. It would also remove old and temporary employee housing (Thousands Cabins and Highland Court) and replace it with new housing. This work would require the use of heavy equipment, including excavators and skid steers. As such, the impact on GHG emissions and energy consumption would be short-term, negligible to minor, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage user capacities, land use, and facilities would have short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact.

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. The demolition, removal, transport, and disposal of waste materials; and restoration of these areas would have a short-term, negligible to minor, and adverse impact on GHG emissions and energy consumption.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 4 under Alternatives 2-6 include removing development, 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. Accordingly, the impact on GHG emissions and energy consumption would be short-term, negligible, and adverse.

Hydrologic/Geologic Resource Actions. Specific projects to protect and enhance the river's hydrologic and geologic resource values include restoring the Greenemeyer Sand Pit to natural conditions. The work would require the use of heavy equipment over a period of several weeks. Accordingly, the impact on GHG and energy consumption would be short-term, negligible, and adverse.

Scenic Resource Actions. Specific projects to protect and enhance the river's scenic values that would occur 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. Accordingly, the impact on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

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. The work would require the use of heavy equipment throughout the construction process. As such, the projects would have a short-term, negligible to minor, adverse impact on GHG emissions and energy consumption. Over the long-term, occupation of the new residential units would contribute to a negligible, adverse impact.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However,

these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have short-term and long-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4.

Segments 6 and 7: Wawona and Wawona Impoundment

Impacts of Actions to Protect and Enhance River Values

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. These actions would have a short-term, negligible, adverse impact on GHG emissions and energy consumption.

Hydrologic/Geologic Resource Actions. Specific projects to protect and enhance the river's hydrologic values that would occur within Segment 7 under Alternatives 2-6 include developing a waste water collection system, including the construction of a pump station above the Wawona Campground. This work would require the use of heavy equipment, including an excavator, skid steer, loader, and dump truck. This effort would require approximately one month of crew time to complete. Accordingly, the impact on GHG emissions and energy consumption would be short-term, negligible, and adverse.

Cultural Resource Actions. Specific projects to protect and enhance the river's cultural values that would occur within Segment 7 under Alternatives 2-6 include removing and relocating campsites 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 to complete. Accordingly, the impact on GHG emissions and energy consumption would be short-term, negligible, and adverse. Over the long-term, reduced campsites would result in reduced campfires, which would be a negligible, beneficial impact.

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

To improve operational efficiency, the park would construct new facilities to house maintenance operations and a new wildland fire station within Segment 7. 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, and remove roadside parking between the Wawona Store and Chilnualna Falls Road. The construction and restoration activities associated with these projects would involve the use of heavy equipment and occur over a period of several months. The resulting impact on Segment 7 GHG emissions and energy consumption would be short-term, negligible to minor, and adverse.

Wawona. The park would redesign the bus stop at the Wawona Store to accommodate increased visitor use. This project would be carried out primarily through the use of hand and small power tools. The resulting energy and GHG impact would be short-term, negligible, and adverse.

Segment 7 Impact Summary: With implementation of mitigation measure MM-AIR-2 (see Appendix C), as applicable, actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. Actions to manage user capacities, land use, and facilities would have short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would not be expected to have a long-term impact.

Summary of Impacts Common to Alternatives 2–6

Alternatives 2–6 would result in energy consumption and GHG emissions associated with short-term construction and long-term operational activities. Overall, more energy consumption and greater emissions of GHGs would occur in nonwilderness portions of the Merced River corridor to a much greater extent than wilderness portions. Stationary sources would continue to be regulated under the applicable air district rules and regulations, some area sources would continue to be subject to park regulations, and mobile sources would continue to be subject to state and federal emissions standards.

Environmental Consequences of Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

All River Segments

Impacts of Actions to Protect and Enhance River Values

Impacts associated with implementation of Alternative 2 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

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

Impacts associated with implementation of Alternative 2 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

With regard to long-term impacts associated with visitor capacity under Alternative 2, on-road mobile emissions were quantified using the California Air Resources Board's emission's factors model (EMFAC2007) and compared with the Federal Mandatory Reporting Rule threshold of 25,000 metric tons of CO_2e per year. Although bus operations are projected to increase under Alternative 2, the reduction in total daily visitor and administrative use and capacity would result in a long-term, moderate, beneficial impact owing to reduced on-road vehicles in the park, as depicted in the Table 9-117 below.

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Under Alternative 2, long-term energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to those under Alternative 1 (No Action). No new buildings and facilities would be constructed within Segments 1, 5, 6, and 8 as part of Alternative 2, so no substantial new sources of energy consumption or emissions would be introduced. Overnight visitation and total daily use levels would be 28% and 30% less, respectively, than under Alternative 1. With fewer on-road vehicles in the vicinity under

TABLE 9-117: ON-ROAD VEHICLE GHG EMISSIONS (METRIC TONS/YEAR)[a]

Scenario	CO_2e
Alternative 2 Emissions	29,012
Alternative 1 (No Action) Emissions	41,827
Incremental Change[b]	(12,815)
Federal Mandatory Reporting Rule Threshold	25,000
Impact Intensity, Type?[c]	Moderate, Beneficial

NOTES:

[a] Emissions were calculated using EMFAC2007 factors and assume 2.4 visitors per car with approximately 22 VMT per vehicle (calibrated based on annual VMT projected for Alternative 1 assuming 240 days/year peak and shoulder seasons) and bus trip VMT from *Supporting Information: A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park* (Villalba *et al* 2012b). User capacities included in the Alternatives chapter were totaled for each alternative to determine the regional GHG emissions. Specific assumptions and emission factors incorporated into the calculations are included in Appendix G.

[b] Values in (parentheses) are net reductions with respect to Alternative 1 (No Action) emissions.

[c] Negligible impacts would not be detectable and would have no discernible effect on GHG emissions (assumed to be 1% or less of threshold). Minor impacts would be those that are present but not expected to have an overall effect on those conditions (assumed to occur up to 50% of applicable threshold). Moderate impacts are clearly detectable and could have an appreciable effect (assumed to occur at emissions levels greater than 50% but does not exceed the applicable threshold). Major impacts would have a substantial, highly noticeable influence on GHG emissions (assumed to occur when emissions exceed applicable threshold).

Alternative 2, the overall effect on energy consumption and GHGs along Segments 1, 5, 6, and 8 would be long-term, minor, and beneficial.

Merced Lake High Sierra Camp. The park would close the Merced Lake High Sierra Camp and remove all associated infrastructure, convert the area to designated Wilderness, and expand dispersed camping at Merced Lake Backpackers Camping Area into the former High Sierra Camp footprint. Closure of the camp would temporarily increase energy consumption and GHG emissions associated with facilities removal and restoration. The short-term impact would be negligible and adverse. Over the long-term, these actions would reduce the amount of energy (and associated emissions) required to stock, operate, and maintain the facility. The resulting impact would be long-term, negligible to minor, and beneficial.

Segments 1, 5, 6, & 8 Impact Summary: Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segments 1, 5, 6, & 8.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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 development, asphalt, and fill material, and restoring 35.6 acres of floodplain at the former Upper and Lower River campgrounds; removing campsites and infrastructure from the 100-year floodplain and restoring an additional 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 65 weeks of crew and equipment time over a period of three years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 2 include: relocating unimproved parking in Yosemite Village Day-use Parking Area and rerouting a portion of Northside Drive; demolishing 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. As a result, these actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

Short-term construction activities and impacts associated with changes to camping, lodging, parking, circulation, employee housing, and service facilities would be similar to those described above for the analysis common to Alternatives 2–6.Reduced housing or lodging would result in a proportional reduction in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and facility energy usage. Since campsites would be reduced along this segment (estimated at 450 versus 466 for Alternative 1), there would also be a proportional reduction in campfire GHG emissions. With fewer on-road vehicles and potential area sources under Alternative 2, the overall effect on energy consumption and GHGs would be long-term, minor, and beneficial.

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). The park would also remove the swimming pool at the Ahwahnee. Several of these actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting short-term GHG impact would be negligible and adverse.

Yosemite Village Day-use Parking Area 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. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

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 park would also remove the swimming pool at Yosemite Lodge. These actions would also require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and

Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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

Short-term construction activities and impacts associated with changes to camping and employee housing facilities would be similar to those described above for the analysis common to Alternatives 2–6.

With fewer on-road vehicles under Alternative 2, the overall effect on energy consumption and related GHG emissions would be long term, minor, and beneficial. Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage, which would have a long-term, minor, and adverse impact.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor beneficial impacts on energy and GHG conditions within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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 and equipment time. The resulting impact from construction on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

Short-term construction activities and impacts associated with changes to service facilities would be similar to those described above for the analysis common to Alternatives 2–6.

The removal of the golf course for ecological restoration and the removal of the Wawona stables would have a beneficial effect. Energy consumption and GHGs associated with these facilities (such as maintenance/landscaping and natural gas combustion for heating/cooling) would be reduced, which would result in a long-term, negligible to minor, beneficial impact.

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. There would be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact. This would result in a long-term, negligible, beneficial impact on GHG emissions and energy consumption.

Segment 7 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have short- and long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segment 7.

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

Impacts associated with implementation of Alternative 2 would be similar to those described above for the analysis common to Alternatives 2–6. Construction would result in short-term, negligible to minor, adverse impacts. For long-term operations, the overall reduction in accommodations (housing, campsites, and/or lodging) would result in a proportional reduction in area GHG emissions sources (such as maintenance/ landscaping, natural gas combustion for heating/cooling), in campfire GHG emissions, and in facility energy usage. In addition, reducing the overall visitor capacity and implementation of mitigation measure MM-AIR-2 (see Appendix C) as applicable, Alternative 2 would result in a long-term, minor, beneficial energy and climate change impact.

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

The past, present, and reasonably foreseeable future actions in the Yosemite region considered for the following cumulative energy and climate change analysis are the same as those identified for Alternative 1.

Overall Cumulative Impact from Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

Because management actions under Alternative 2 and actions common to Alternatives 2-6 involve substantial construction activity, their associated equipment and on-road vehicle fuel usage and GHG emissions would be expected to result in short-term, negligible to minor adverse energy and climate change impacts. However, with reduced daytime and nighttime visitor capacity, Alternative 2 management actions would also result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and facility energy usage. In addition, the continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, would have long-term, beneficial energy and climate change impacts.

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

All River Segments

Impacts of Actions to Protect and Enhance River Values

Impacts associated with implementation of Alternative 3 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

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

Impacts associated with implementation of Alternative 3 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

With regard to long-term impacts associated with visitor capacity under Alternative 3, on-road mobile emissions were quantified using EMFAC2007 emission factors and compared with the Federal Mandatory Reporting Rule threshold of 25,000 metric tons of CO_2e per year. Although bus operations are projected to increase under Alternative 3, the reduction in total daily visitor and administrative use and capacity would result in a long-term, moderate, beneficial impact owing to reduced on-road vehicles in the park, as depicted in the Table 9-118 below.

TABLE 9-118: ON-ROAD VEHICLE GHG EMISSIONS (METRIC TONS/YEAR)[a]

Scenario	CO_2e
Alternative 3 Emissions	27,857
Alternative 1 (No Action) Emissions	41,827
Incremental Change[b]	(13,970)
Federal Mandatory Reporting Rule Threshold	25,000
Impact Intensity, Type?[c]	Moderate, Beneficial

NOTES:

[a] Emissions were calculated using EMFAC2007 factors and assume 2.4 visitors per car with approximately 22 VMT per vehicle (calibrated based on annual VMT projected for Alternative 1 assuming 240 days/year peak and shoulder seasons) and bus trip VMT from *Supporting Information: A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park* (Villalba *et al* 2012b). User capacities included in the Alternatives chapter were totaled for each alternative to determine the regional GHG emissions. Specific assumptions and emission factors incorporated into the calculations are included in Appendix G.

[b] Values in (parentheses) are net reductions with respect to Alternative 1 (No Action) emissions.

[c] Negligible impacts would not be detectable and would have no discernible effect on GHG emissions (assumed to be 1% or less of threshold). Minor impacts would be those that are present but not expected to have an overall effect on those conditions (assumed to occur up to 50% of applicable threshold). Moderate impacts are clearly detectable and could have an appreciable effect (assumed to occur at emissions levels greater than 50% but does not exceed the applicable threshold). Major impacts would have a substantial, highly noticeable influence on GHG emissions (assumed to occur when emissions exceed applicable threshold).

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Under Alternative 3, long-term energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to those under Alternative 1 (No Action). No new buildings and facilities would be constructed within Segments 1, 5, 6, and 8 as part of Alternative 3, so no substantial new sources of energy consumption or emissions would be introduced. With fewer on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs along Segments 1, 5, 6, and 8 would be long term, minor, and beneficial.

Merced Lake High Sierra Camp. The park would close the Merced Lake High Sierra Camp and removal all infrastructure, convert the area to designated Wilderness, and use the former camp area for a temporary stock camp. Closure of the camp would temporarily increase energy consumption and GHG emissions associated with facilities removal and restoration. The short-term impact would be negligible and adverse. Over the long-term, these actions would reduce the amount of energy (and associated emissions) required to stock, operate, and maintain the facility. The resulting impact would be long-term, negligible to minor, and beneficial.

Segments 1, 5, 6, & 8 Impact Summary: Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segments 1, 5, 6, & 8.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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; removing development, asphalt, and fill material, and restoring 35.6 acres of floodplain at the former Upper and Lower River campgrounds; removing campsites and infrastructure from within 150 feet of the river and restoring an additional 12 acres of floodplain and riparian habitat; and removing informal trails and installing signage and fencing to redirect visitor traffic 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 two years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 Yosemite Village day-use parking; demolishing 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. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

Short-term construction activities and impacts associated with changes to camping, lodging, parking, circulation, employee housing, and service facilities would be similar to those described above for the analysis common to Alternatives 2–6.

Overnight visitation and total daily use levels would be 23% and 30% less, respectively, than under Alternative 1. Reduced housing or lodging would result in a proportional reduction in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) in facility energy usage. Since campsites would be increased along this segment (estimated at 477 versus 466 for Alternative 1), there would also be a proportional increase in campfires, which would result in a long-term, negligible, adverse impact for GHG emissions. However, with fewer on-road vehicles and potential area sources under Alternative 3, the overall effect on energy consumption and GHGs would be long term, minor, and beneficial.

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). The park would also remove the swimming pool at the Ahwahnee. Several of these actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting short-term GHG impact would be negligible and adverse. The reduction in units would decrease energy demand, resulting in a long-term, negligible, beneficial impact.

Yosemite Village Day-use Parking Area 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. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

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 park would also remove the swimming pool at Yosemite Lodge. These actions would also require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would similarly have long-term negligible to minor, beneficial impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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

Short-term construction activities and impacts associated with changes to camping and employee housing facilities would be similar to those described above for the analysis common to Alternatives 2–6.

With fewer on-road vehicles under Alternative 3, the overall effect on energy consumption and related GHG emissions would be long term, minor, and beneficial.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have short-term and long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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 and equipment time. The resulting impact from construction on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

Short-term construction activities and impacts associated with changes to service facilities would be similar to those described above for the analysis common to Alternatives 2–6. The removal of the golf course for ecological restoration would have a beneficial effect. Energy consumption and GHGs associated with this facility (such as maintenance/landscaping and natural gas combustion for heating/cooling) would be reduced, which would have a long-term, negligible to minor, beneficial impact.

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. There would also be a proportional reduction in campfire GHG emissions. This would result in a long-term, negligible, beneficial impact on GHG emissions and energy consumption.

Segment 7 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would

not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have short- and long-term, negligible, beneficial impacts on energy and GHG conditions within Segment 7.

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

Impacts associated with implementation of Alternative 3 would be similar to those described above for the analysis common to Alternatives 2–6. Construction would result in short-term, negligible to minor, adverse impacts. For long-term operations, reduced housing and lodging would result in a proportional reduction in area GHG emissions sources, such as maintenance/landscaping, natural gas combustion for heating/cooling, and facility energy usage. In addition, reducing the overall visitor capacity and implementation of mitigation measure MM-AIR-2 (see Appendix C) as applicable, Alternative 3 would result in a long-term, minor to moderate, beneficial energy and climate change impact.

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

The past, present, and reasonably foreseeable future actions in the Yosemite region considered for the following cumulative energy and climate change analysis are the same as those identified for Alternative 1.

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

Because management actions under Alternative 3 and actions common to Alternatives 2-6 involve substantial construction activity, their associated equipment and on-road vehicle fuel usage and GHG emissions would be expected to result in short-term, negligible to minor adverse energy and climate change impacts. However, with reduced daytime and nighttime visitor capacity, Alternative 3 management actions would also result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and facility energy usage. In addition, the continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, would have long-term, beneficial energy and climate change impacts.

Environmental Consequences of Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

All River Segments

Impacts of Actions to Protect and Enhance River Values

Impacts associated with implementation of Alternative 4 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

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

Impacts associated with implementation of Alternative 4 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

With regard to long-term impacts associated with visitor capacity under Alternative 4, on-road mobile emissions were quantified using EMFAC2007 emission factors and compared with the Federal Mandatory Reporting Rule threshold of 25,000 metric tons of CO_2e per year. Although bus operations are projected to increase under Alternative 4, the reduction in total daily visitor and administrative use and capacity would result in a long-term, minor, beneficial impact owing to reduced on-road vehicles in the park, as depicted in the Table 9-119 below.

TABLE 9-119: ON-ROAD VEHICLE GHG EMISSIONS (METRIC TONS/YEAR)[a]

Scenario	CO_2e
Alternative 4 Emissions	34,403
Alternative 1 (No Action) Emissions	41,827
Incremental Change[b]	(7,424)
Federal Mandatory Reporting Rule Threshold	25,000
Impact Intensity, Type?[c]	Minor, Beneficial

NOTES:

[a] Emissions were calculated using EMFAC2007 factors and assume 2.4 visitors per car with approximately 22 VMT per vehicle (calibrated based on annual VMT projected for Alternative 1 assuming 240 days/year peak and shoulder seasons) and bus trip VMT from *Supporting Information: A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park* (Villalba *et al* 2012b). User capacities included in the Alternatives chapter were totaled for each alternative to determine the regional GHG emissions. Specific assumptions and emission factors incorporated into the calculations are included in Appendix G.

[b] Values in (parentheses) are net reductions with respect to Alternative 1 (No Action) emissions.

[c] Negligible impacts would not be detectable and would have no discernible effect on GHG emissions (assumed to be 1% or less of threshold). Minor impacts would be those that are present but not expected to have an overall effect on those conditions (assumed to occur up to 50% of applicable threshold). Moderate impacts are clearly detectable and could have an appreciable effect (assumed to occur at emissions levels greater than 50% but does not exceed the applicable threshold). Major impacts would have a substantial, highly noticeable influence on GHG emissions (assumed to occur when emissions exceed applicable threshold).

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Under Alternative 4, long-term energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to those under Alternative 1 (No Action). No new buildings and facilities would be constructed within these segments as part of Alternative 4, so no substantial new sources of energy consumption or emissions would be introduced. With fewer on-road vehicles in the vicinity under Alternative 4, the overall effect on energy consumption and GHGs along Segments 1, 5, 6, and 8 would be long term, minor, and beneficial.

Merced Lake High Sierra Camp. The park would close the Merced Lake High Sierra Camp and removal all infrastructure, convert the area to designated Wilderness, and restoration of the former camp area to

natural conditions. Closure of the camp would temporarily increase energy consumption and GHG emissions associated with facilities removal and restoration. The short-term impact would be negligible and adverse. Over the long-term, these actions would reduce the amount of energy (and associated emissions) required to stock, operate, and maintain the facility. The resulting impact would be long-term, negligible to minor, and beneficial.

Segments 1, 5, 6, & 8 Impact Summary: Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segments 1, 5, 6, & 8.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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 asphalt and fill material, restoring topography of 19.7 acres of floodplain, and installation of box culverts or other similar design components at the former Upper and Lower River campgrounds; removing campsites and infrastructure from within 150 feet of the river and restoring an additional 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 35 weeks of crew and equipment time over a period of at least two years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 4 include: relocating unimproved Yosemite Village day-use parking; placing large wood and constructed logjams along the base of Stoneman Bridge; demolishing 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. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

Short-term construction activities and impacts associated with changes to camping, lodging, parking, circulation, employee housing, and service facilities would be similar to those described above for the analysis common to Alternatives 2–6.

Overnight visitation and total daily use levels would be 5% greater and 20% less, respectively, than under Alternative 1. Since campsites would be increased along this segment (estimated at 701 versus 466 for

Alternative 1), there would also be a proportional increase in campfire GHG emissions, which would be a long-term, negligible to minor, adverse impact. Reduced housing or lodging would result in a proportional reduction in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. Overall, with fewer on-road vehicles and potential area sources under Alternative 4, the effect on energy consumption and GHGs would be long term, minor, and beneficial.

Curry Village and Campground. The park would retain 355 guest units and construct a new 40 site campground at Curry Village. The park would develop new campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51) and a new RV campground loop (36), The park would remove campsites from lower Pines (15), North Pines (34), and Upper Pines (2). The park would also remove the swimming pool at the Ahwahnee. Several of these actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting short-term GHG impact would be negligible and adverse. The reduction in units would decrease energy demand, resulting in a long-term, negligible, beneficial impact.

Yosemite Village Day-use Parking Area 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. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

Camp 4 and Yosemite Lodge. The park would 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 park would also remove the swimming pool at Yosemite Lodge. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. These actions would also require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would similarly have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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

Short-term construction activities and impacts associated with changes to parking and employee housing facilities would be similar to those described above for the analysis common to Alternatives 2–6.

With fewer on-road vehicles under Alternative 4, the overall effect on energy consumption and related GHG emissions would be long term, minor, and beneficial. Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage, which would have a long term, minor, and adverse impact.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term and long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur 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 and equipment time. The resulting impact from construction on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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. There would be a proportional reduction in campfire GHG emissions. This would result in a long-term, negligible, beneficial impact on GHG emissions and energy consumption.

Segment 7 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible, beneficial impacts on energy and GHG conditions within Segment 7.

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

Impacts associated with implementation of Alternative 4 would be similar to those described above for the analysis common to Alternatives 2–6. Construction would result in short-term, negligible to minor, adverse impacts. For long-term operations, reduced housing and lodging would result in a proportional reduction in

area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. In addition, reducing the overall visitor capacity and implementation of mitigation measure MM-AIR-2 (see Appendix C) as applicable, Alternative 4 would result in a long-term, minor, beneficial energy and climate change impact from reduced fuel usage and GHG emissions associated with on-road vehicles. An increased number of overall campsites could result in a greater number of campfires, which would result in a long-term, negligible to minor, adverse impact on GHG emissions.

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

The past, present, and reasonably foreseeable future actions in the Yosemite region considered for the following cumulative energy and climate change analysis are the same as those identified for Alternative 1.

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

Because management actions under Alternative 4 and actions common to Alternatives 2-6 involve substantial construction activity, their associated equipment and on-road vehicle fuel usage and GHG emissions would be expected to result in short-term, negligible to minor adverse energy and climate change impacts. With reduced overall daily visitor capacity, Alternative 4 would result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and associated fuel usage and GHG emissions. However, an increased number of campsites could result in an adverse impact from increased campfire usage and associated GHG emissions. The continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, would have long-term, beneficial energy and climate change impacts.

Environmental Consequences of Alternative 5: Enhanced Visitor Experiences and Essential River Bank Restoration

All River Segments

Impacts of Actions to Protect and Enhance River Values

Impacts associated with implementation of Alternative 5 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

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

Impacts associated with implementation of Alternative 5 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

With regard to long-term impacts associated with the visitor capacity under Alternative 5, on-road mobile emissions were quantified using EMFAC2007 emission factors and compared to the Federal Mandatory Reporting Rule threshold of 25,000 metric tons of CO_2e per year. Although bus operations are projected to increase under Alternative 5, the reduction in total daily visitor and administrative use and capacity would result in a long-term, minor, beneficial impact owing to reduced on-road vehicles in the park, as depicted in the Table 9-120 below.

TABLE 9-120: ON-ROAD VEHICLE GHG EMISSIONS (METRIC TONS/YEAR)[a]

Scenario	CO_2e
Alternative 5 Emissions	39,537
Alternative 1 (No Action) Emissions	41,827
Incremental Change[b]	(2,290)
Federal Mandatory Reporting Rule Threshold	25,000
Impact Intensity, Type?[c]	Minor, Beneficial

NOTES:

[a] Emissions were calculated using EMFAC2007 factors and assume 2.4 visitors per car with approximately 22 VMT per vehicle (calibrated based on annual VMT projected for Alternative 1 assuming 240 days/year peak and shoulder seasons) and bus trip VMT from *Supporting Information: A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park* (Villalba *et al* 2012b). User capacities included in the Alternatives chapter were totaled for each alternative to determine the regional GHG emissions. Specific assumptions and emission factors incorporated into the calculations are included in Appendix G.

[b] Values in (parentheses) are net reductions with respect to Alternative 1 (No Action) emissions.

[c] Negligible impacts would not be detectable and would have no discernible effect on GHG emissions (assumed to be 1% or less of threshold). Minor impacts would be those that are present but not expected to have an overall effect on those conditions (assumed to occur up to 50% of applicable threshold). Moderate impacts are clearly detectable and could have an appreciable effect (assumed to occur at emissions levels greater than 50% but does not exceed the applicable threshold). Major impacts would have a substantial, highly noticeable influence on GHG emissions (assumed to occur when emissions exceed applicable threshold).

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Under Alternative 5, long-term energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to those under Alternative 1 (No Action). No new buildings and facilities would be constructed within these segments as part of Alternative 5, so no substantial new sources of energy consumption or emissions would be introduced. With fewer on-road vehicles in the vicinity under Alternative 5, the overall effect on energy consumption and GHGs along Segments 1, 5, 6, and 8 would be long term, minor, and beneficial.

Merced Lake High Sierra Camp. The park would reduce the capacity of the Merced Lake High Sierra Camp to 42 beds and replace the flush toilets with composting toilets. Facilities replacement would temporarily increase energy consumption and GHG emissions associated with moving equipment and supplies by helicopter. The short-term impact would be negligible and adverse. Over the long-term, capacity changes would reduce the amount of energy (and associated emissions) required to stock, operate, and maintain the facility. The resulting impact would be long-term, negligible, and beneficial.

Segments 1, 5, 6, & 8 Impact Summary: Actions to manage user capacities, land use, and facilities would have long-term, negligible, beneficial impacts on energy and GHG conditions within Segments 1, 5, 6, & 8.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur within Segment 2 under Alternatives 5 include: removing asphalt and fill material, restoring topography of 35.6 acres of floodplain, and installation of box culverts or other similar design components at the former Upper and Lower River campgrounds; removing campsites and infrastructure from within 100 feet of the river and restoring an additional 6.5 acres of floodplain and riparian habitat; 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 informal trails and erecting fencing, signage, and boardwalks to reduce visitor impacts, and selectively remove conifers to improve views redirect visitor traffic 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 40 weeks of crew and equipment time over a period of two years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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: withdrawing unimproved portions of the day-use parking area from the river, at Yosemite Village; placing large wood and constructed logjams along the base of Stoneman Bridge; and improving trail connectivity and routing in the vicinity of the Ahwahnee Bridge. Under Alternative 5, the Sugar Pine Bridge would remain in place for the near term. The park would commission a third party study concerning hydrologic impacts of the bridge. Along with this information, the park would evaluate the cultural, physical, biological, energy and climate change, and economic tradeoffs associated with retention versus 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 at least 16 weeks of crew and equipment time over a period of two years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

Short-term construction activities and impacts associated with changes to camping, lodging, parking, circulation, employee housing, and service facilities would be similar to those described above for the analysis common to Alternatives 2–6.

Overnight visitation and total daily use levels would be 18% greater and 4% less, respectively, than under Alternative 1. Since campsites would be increased along this segment (estimated at 640 sites versus 466 sites for Alternative 1), there would also be a proportional increase in campfire GHG emissions, which would have a long-term, negligible to minor, adverse impact. With fewer on-road vehicles under Alternative 5,

energy consumption and related GHG emissions would be long term, minor, and beneficial. Increased lodging would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage, which would be a long term, minor, and adverse impact.

Curry Village and Campground. The park would construct 52 new hard-sided units at Boys Town, bringing the total number of new and retained units at Curry Village to 482. The park would develop new campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51) and a new RV campground loop (36), and remove campsites from lower Pines (5), North Pines (14), and Upper Pines (2). Several of these actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting short-term GHG impact would be negligible and adverse.

Yosemite Village Day-use Parking Area and Yosemite Village. The NPS would construct a roundabout at the intersection of Northside and Yosemite Village Drives, 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. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

Camp 4 and Yosemite Lodge. The NPS would remove temporary employee housing units at Highland Court and return the site to parking purposes, and redevelop an area west of Yosemite Lodge to provide an additional parking for 300 automobiles and 22 tour busses. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. These actions would also require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible to minor, beneficial impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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

Short-term construction activities and impacts associated with changes to parking and employee housing facilities would be similar to those described above for the analysis common to Alternatives 2–6.

With intelligent transportation system improvements and user capacity limits resulting in fewer on-road vehicles under Alternative 5, the overall effect on energy consumption and related GHG emissions would be

long term, minor, and beneficial. Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage, which would have a long-term, minor, and adverse impact.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible, beneficial impacts on energy and GHG conditions within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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 the Wawona Maintenance Yard. This work could require the use of heavy equipment and would require approximately one week of crew and equipment time. The resulting impact from construction on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

Short-term construction activities and impacts associated with changes to camping facilities would be similar to those described above for the analysis common to Alternatives 2–6.

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. There would be a proportional reduction in campfire GHG emissions. This would result in a long-term, negligible, beneficial impact on GHG emissions and energy consumption.

Segment 7 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible, beneficial impacts on energy and GHG conditions within Segment 7.

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

Impacts associated with implementation of Alternative 5 would be similar to those described above for the analysis common to Alternatives 2–6. Construction would result in short-term, negligible to minor, adverse effects. For long-term operations, increased housing, campsites, or lodging would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling), in campfire GHG emissions, and in facility energy usage, which would result in a long-term, minor, adverse impact. However, reducing the overall visitor capacity and implementation of mitigation measure MM-AIR-2 (see Appendix C) as applicable, Alternative 5 would result in a long-term,

minor, beneficial energy and climate change impact from reduced fuel usage and GHG emissions associated with on-road vehicles.

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

The past, present, and reasonably foreseeable future actions in the Yosemite region considered for the following cumulative energy and climate change analysis are the same as those identified for Alternative 1.

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

Because management actions under Alternative 5 and actions common to Alternatives 2-6 involve substantial construction activity, their associated equipment and on-road vehicle fuel usage and GHG emissions would be expected to result in short-term, negligible to minor adverse energy and climate change impacts. With visitor capacity limitations and traffic management strategies imposed in peak season, Alternative 5 would result in a long-term, cumulatively beneficial effect on energy and climate change from reduced VMT and associated fuel usage and GHG emissions. However, a minor increase in the number of lodging units and campsites would result in an adverse impact from increased area source GHG emissions. The continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, would have long-term, beneficial energy and climate change impacts.

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

All River Segments

Impacts of Actions to Protect and Enhance River Values

Impacts associated with implementation of Alternative 6 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to protect and enhance river values would likely result in short-term, negligible to minor, adverse GHG emissions and energy consumption, depending on the year-to-year development and activity overlap.

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

Impacts associated with implementation of Alternative 6 would be similar to those described above for the analysis common to Alternatives 2–6. Overall construction activities associated with actions to manage visitor use and facilities would likely result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts, depending on the year-to-year development and activity overlap.

With regard to long-term impacts associated with the visitor capacity under Alternative 6, on-road mobile emissions were quantified using EMFAC2007 emission factors and compared to the Federal Mandatory Reporting Rule threshold of 25,000 metric tons of CO_2e per year. As depicted in the Table 9-121, below, the increase in total daily visitor and administrative use and capacity and bus operations would result in a long-term, minor, adverse impact owing to increased on-road vehicles in the park.

TABLE 9-121: ON-ROAD VEHICLE GHG EMISSIONS (METRIC TONS/YEAR)[a]

Scenario	CO_2e
Alternative 6 Emissions	43,249
Alternative 1 (No Action) Emissions	41,827
Incremental Change	1,422
Federal Mandatory Reporting Rule Threshold	25,000
Impact Intensity, Type?[b]	Minor, Adverse

NOTES:

[a] Emissions were calculated using EMFAC2007 factors and assume 2.4 visitors per car with approximately 22 VMT per vehicle (calibrated based on annual VMT projected for Alternative 1 assuming 240 days/year peak and shoulder seasons) and bus trip VMT from *Supporting Information: A Life-Cycle Greenhouse Gas Inventory for Yosemite National Park* (Villalba *et al* 2012b). User capacities included in the Alternatives chapter were totaled for each alternative to determine the regional GHG emissions. Specific assumptions and emission factors incorporated into the calculations are included in Appendix G.

[b] Negligible impacts would not be detectable and would have no discernible effect on GHG emissions (assumed to be 1% or less of threshold). Minor impacts would be those that are present but not expected to have an overall effect on those conditions (assumed to occur up to 50% of applicable threshold). Moderate impacts are clearly detectable and could have an appreciable effect (assumed to occur at emissions levels greater than 50% but does not exceed the applicable threshold). Major impacts would have a substantial, highly noticeable influence on GHG emissions (assumed to occur when emissions exceed applicable threshold).

Segments 1, 5, 6, and 8: Merced River Above Nevada Fall, South Fork Merced River Above and Below Wawona, and Wawona Impoundment

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

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

Under Alternative 6, long-term energy use and emissions in the areas of Segments 1, 5, 6, and 8 would remain similar to that of Alternative 1 (No Action). No new buildings and facilities would be constructed within segments 1, 5, 6, and 8 as part of Alternative 6, so no substantial new sources of energy consumption or emissions would be introduced. With a greater number of on-road vehicles in the vicinity under Alternative 6, the overall effect on energy consumption and GHGs along Segments 1, 5, 6, and 8 would be long term, minor, and adverse.

Merced Lake High Sierra Camp. The park would retain the Merced Lake High Sierra Camp and replace the flush toilets with composting toilets. Facilities replacement would temporarily increase energy consumption and GHG emissions associated with moving equipment and supplies by helicopter. The short-term impact would be negligible and adverse. Continued operation of the Camp would not be expected to change energy or GHG consumption from existing conditions. The resulting impact would be long-term, negligible, and adverse.

Segments 1, 5, 6, & 8 Impact Summary: Actions to manage user capacities, land use, and facilities would have long-term, negligible, adverse impacts on energy and GHG conditions within Segments 1, 5, 6, & 8.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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 asphalt and fill material, restoring topography of 19.7 acres of floodplain, and installation of box culverts or other similar design components at the former Upper and Lower River campgrounds; removing campsites and infrastructure from within 100 feet of the river and restoring an additional 6.5 acres of floodplain and riparian habitat; removing fill and constructing a boardwalk over meadow and wet areas at Ahwahnee Meadows;; and removing informal trails, installing viewing platforms and boardwalks, and selectively remove conifers to improve views 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 40 weeks of crew and equipment time over a period of at least two years. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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 6 include: relocating unimproved Yosemite Village day-use parking and placing large wood and constructed logjams along the bases of Stoneman, Sugar Pine, and Ahwahnee 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. These actions would result in short-term, negligible to minor, adverse GHG emissions and energy-consumption impacts.

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

Short-term construction activities and impacts associated with changes to camping, lodging, parking, circulation, employee housing, and service facilities would be similar to those described above for the analysis common to Alternatives 2–6.

Overnight visitation and total daily use levels would be 30% greater and 4% less, respectively, than under Alternative 1. Since campsites would be increased along this segment (estimated at 739 sites versus 466 sites for Alternative 1), there would also be a proportional increase in campfire GHG emissions, which would have a long-term, negligible to minor, adverse impact. Reduced housing would result in a proportional reduction, while increased lodging would contribute to a proportional increase in area GHG emissions sources (such as maintenance/ landscaping, natural gas combustion for heating/cooling) and in facility energy usage. With a greater number of on-road vehicles and potential area sources under Alternative 6, the overall effect on energy consumption and GHGs would be long term, negligible to minor, and adverse.

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 develop new campsites at the former Lower River Campground (40), former Upper River Campground (32), and Upper Pines (51) and a new RV campground loop (36), The park would remove campsites from lower Pines (5), North Pines (14), and Upper Pines (2). Several of these actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting short-term GHG impact would be negligible and adverse.

Yosemite Village Day-use Parking Area and Yosemite Village. The park would expand the Concessioner Warehouse Building to accommodate Concessioner General Office functions, construct a pedestrian underpass, a traffic circle, and roundabout, 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. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

Camp 4 and Yosemite Lodge. The park would 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. Pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge area and the Lower Yosemite Fall area will be addressed in a tiered NEPA/NHPA compliance effort. These actions would require the use of heavy construction equipment and would increase construction-related emissions during project implementation. The resulting impact on GHG conditions would be short-term, negligible to minor, and adverse.

Segment 2 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley). However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible, adverse impacts on energy and GHG conditions within Segment 2A (East Valley) and Segment 2B (West Valley).

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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

Short-term construction activities and impacts associated with changes to parking and employee housing facilities would be similar to those described above for the analysis common to Alternatives 2–6.

With greater numbers of on-road vehicles under Alternative 6, the overall effect on energy consumption and related GHG emissions would be long term, negligible, and adverse. Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/ landscaping, natural gas combustion for heating/cooling), in campfire GHG emissions, and in facility energy usage, which would have a long term, minor, and adverse impact.

Segments 3 & 4 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible to minor, adverse impacts on energy and GHG conditions within Segments 3 & 4. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have short-term and long-term, negligible, adverse impacts on energy and GHG conditions within Segments 3 & 4.

Segment 7: Wawona

Impacts of Actions to Protect and Enhance River Values

Short-term construction activities and impacts would be similar to those described above for the analysis common to Alternatives 2–6.

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 and equipment time. The resulting impact from construction on GHG emissions and energy consumption would be short-term, negligible, and adverse.

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

Short-term construction activities and impacts associated with changes to camping facilities would be similar to those described above for the analysis common to Alternatives 2–6.

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. There would be a proportional reduction in campfire GHG emissions. This would result in a long-term, negligible, beneficial impact on GHG emissions and energy consumption.

Segment 7 Impact Summary: Actions to protect and enhance river values would result in local, short-term, negligible, adverse impacts on energy and GHG conditions within Segment 7. However, these actions would not be expected to have a long-term impact. Actions to manage user capacities, land use, and facilities would have long-term, negligible, beneficial impacts on energy and GHG conditions within Segment 7.

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

Impacts associated with implementation of Alternative 6 would be similar to those described above for the analysis common to Alternatives 2–6. Construction would result in short-term, negligible to minor adverse effects. For long-term operations, increased housing, campsites, and lodging would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling), in campfire GHG emissions, and in facility energy usage. In addition, increasing the overall visitor capacity and implementation of mitigation measure MM-AIR-2, as applicable (see Appendix C), Alternative 6 would result in a long-term, minor, adverse energy and climate change impact from increased fuel usage and GHG emissions associated with on-road vehicles.

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

The past, present, and reasonably foreseeable future actions in the Yosemite region considered for the following cumulative energy and climate change analysis are the same as those identified for Alternative 1.

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

Because management actions under Alternative 6 and actions common to Alternatives 2-6 involve substantial construction activity, it would be expected to contribute to short-term, negligible to minor adverse energy and climate change impacts from equipment and on-road vehicle fuel usage and GHG emissions. With increased overall visitor capacity, Alternative 6 would result in a long-term, cumulatively adverse impact on energy and climate change from increased VMT and associated fuel usage and GHG emissions. An increased number of campsites would result in increased GHG emissions from wood

burning. Similarly, an increase in the number of lodging units would result in an adverse impact from increased area source GHG emissions and facility energy usage. The continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, would have long-term, negligible, beneficial energy and climate change impacts.

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Socioeconomics

Affected Environment

This section evaluates the likely socioeconomic consequences of the specific management actions contained in each alternative and how the alternatives would affect the regional economy. As documented in the "Visitor Experience/Recreation" section of this chapter, there were an estimated 3.9 million annual visitors to Yosemite National Park in 2010 and 3.95 million in 2011, slightly fewer than the all-time record estimate of 4.0 million in 1996. Yosemite visitors spend millions of dollars on entrance fees, campgrounds, hotel lodging, meals, transportation, and other goods and services both inside the park and in gateway communities outside the park. As a result, visitor spending is an important source of income and employment for the park, the primary park concessioner, and the gateway communities. In addition, the National Park Service (NPS) operating budget pays employees and contractors to perform duties and provide services within the park, which, like visitor spending, provides revenue to support the economy of the surrounding region.

The "Socioeconomics" section contains two subsections: regional economy and visitor expenditures. The first section characterizes the regional economy. The region affected by the park includes the four surrounding counties: Madera, Mariposa, Mono, and Tuolumne. Economic and statistical profiles were developed for each county to assess the importance of tourism and NPS spending to the region. The profiles provide an economic baseline with detailed information on the size of each county's principal economic sectors in terms of economic output, employment, and other relevant economic indicators. Although historical trends and future projections are included for some socioeconomic measures (e.g., population), the primary focus is on 2010, which has been selected as the most recent year for which reliable data are available to use as a baseline for the alternatives analysis to be conducted later in this EIS process.

The second section presents best estimates of baseline visitor spending. The NPS periodically surveys visitors to Yosemite and fortunately conducted a survey in 2009 as part of the Visitor Services Project (VSP). The results of this survey, as reported in the study, *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009*, have been adjusted using the Consumer Price Index to estimate spending patterns for the baseline year of 2010.

Regional Economy

The region evaluated in the socioeconomic analyses below includes all the gateway communities immediately adjacent to Yosemite National Park and the four counties that house them: Madera, Mariposa, Mono, and Tuolumne. This four-county region roughly coincides with the 50-mile radius for which spending was reported in the VSP survey. The four main access roads to the park pass through the four gateway counties; Highway 41 passes through Madera and Mariposa counties, Highway 140 passes through Mariposa County, Highway 120 east passes through Mono County, and Highway 120 west passes through Tuolumne County.

Yosemite National Park is located primarily in Mariposa and Tuolumne counties, with a small southern portion in Madera County. The developed areas along the main river corridor and the South Fork Merced River, including Yosemite Valley, the El Portal Administrative Site, and Wawona are located within the jurisdiction of Mariposa County. Merced, Stanislaus, San Joaquin, and Fresno Counties were excluded from the affected region because, in these much more populous and urbanized counties, it is difficult to distinguish the portions of the tourist economies that are associated with Yosemite versus other tourist destinations. Also, tourism is a relatively small component of these counties' overall economies.

Regional Comparison

Population

In 2010 the population of the region of economic study was almost 240,000. Table 9-122 shows the historical growth rates for this region during the past 40 years. The table also shows the state population and growth rates. The region containing the gateway communities to Yosemite National Park has been growing much more rapidly than the state of California as a whole, though it is important to note that this regional growth percentage is relative to the small baseline of four counties that are largely rural in character. Furthermore, while population at both geographic levels continues to grow, the rates of growth are slowing down.

TABLE 9-122: HISTORICAL POPULATION BY COUNTY: 1970-2010

County	1970	1980	1990	2000	2010
Madera	41,519	63,116	88,090	123,109	150,865
Mariposa	6,015	11,108	14,302	17,130	18,251
Mono	4,016	8,577	9,956	12,853	14,202
Tuolumne	22,169	33,928	48,456	54,504	55,368
Total 4-Co. Region	73,719	116,729	160,804	207,596	238,686
10-Year Growth		58%	38%	29%	15%
California	19,953,134	23,667,902	29,760,021	33,873,086	37,253,956
10-Year Growth		19%	26%	14%	10%
SOURCE: U.S. Bureau of the Census 2010]					

Table 9-123 indicates that substantial growth is projected to continue into the future, both in the region of impact and in the state as a whole. The projections currently available from the California Department of Finance were made before the 2010 Census was available and before the full effects of the current recession were obvious. As a result, the actual 2010 population fell short of the predictions, and future populations are likely to be smaller by a similar proportion.

TABLE 9-123: PROJECTED POPULATION BY COUNTY: 2000-2050

County	2000	2010	2020	2030	2040	2050
Madera	124,696	162,114	212,874	273,456	344,455	413,569
Mariposa	17,150	19,108	21,743	23,981	26,169	28,091
Mono	13,013	14,833	18,080	22,894	29,099	36,081
Tuolumne	54,863	58,721	64,161	67,510	70,325	73,291
Total 4-Co. Region	209,722	254,776	316,858	387,841	470,048	551,032
10-Year Growth		21%	24%	22%	21%	17%
California	34,105,437	39,135,676	44,135,923	49,240,891	54,226,115	59,507,876
10-Year Growth		15%	13%	12%	10%	10%
SOURCE: California State Department of Finance 2011						

Income

Table 9-124 summarizes several key household demographic and income characteristics for the four-county study area. Incomes in all four of the counties are less than the average for California as a whole. Per-capita

incomes are lowest in Madera County, though household sizes tend to be larger; therefore, with more potential workers per household, household incomes in Madera are comparable to those in the neighboring counties. The poverty rate is also the highest in Madera County.

TABLE 9-124: HOUSEHOLD INCOME CHARACTERISTICS FOR THE FOUR-COUNTY STUDY AREA

Key Demographic Characteristics	Madera	Mariposa	Mono	Tuolumne	California
Persons per household, 2006–2010	3.30	2.28	2.61	2.28	2.89
Per-capita money income in past 12 months (2010 dollars)	$18,724	$27,064	$27,321	$25,483	$29,188
Median household income 2006–2010	$46,039	$49,098	$55,087	$47,462	$60,883
Persons below poverty level, percent, 2006–2010	19.3%	12.5%	12.0%	11.7%	13.7%
SOURCE: U.S. Census Bureau State & County QuickFacts 2010					

Employment

Table 9-125 presents employment figures including all waged, salaried, and self-employed jobs in each county, and both full-time and part-time workers. In 2010 total employment was approximately 102,000 in the four-county area. Madera County, with the largest and most urbanized population, had the largest employment base in the region, accounting for approximately 57% of total employment. Mariposa County, which includes Yosemite Valley, El Portal, and Wawona, accounted for approximately 8% of total employment in the affected region. Table 9-125 provides total employment estimates for the counties by industry sector. The Service sector, which includes most of the businesses most directly impacted by tourism and visitor spending, accounts for 45% of the total region, and 59% of Mariposa County, which includes Yosemite Valley. The figures are used as the baseline for employment conditions.

TABLE 9-125: 2010 EMPLOYMENT BY COUNTY AND MAJOR INDUSTRY SECTOR

Industry Sector	Individual Counties				Total
	Madera	Mariposa	Mono	Tuolumne	Study Area
Total	**58,309**	**8,037**	**10,608**	**25,319**	**102,273**
Agriculture	12,701	294	105	519	13,619
Mining	88	79	24	118	310
Construction	2,258	478	687	1,692	5,115
Manufacturing	2,990	175	113	764	4,043
Transp. & Utilities	1,468	128	110	368	2,074
Trade	5,593	619	938	3,164	10,314
Service	21,816	4,755	6,493	12,905	45,970
Government	11,393	1,509	2,136	5,789	20,828
SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants analysis 2012					

According to the Local Area Unemployment Statistics program of the U.S. Bureau of Labor Statistics, in 2010 the total civilian labor force in the four-county region was 106,429, of which 90,509 were employed. The statewide unemployment rate in California at the time was 12.4%. Only Mariposa County was slightly better off with an unemployment rate of 12.1%. The other three counties were between 14.0% and 15.6% (with the highest in the most populous county, Madera). The region's average unemployment rate in 2010 was 14.8%.

Economic Output

Economic output is a measure of productivity. Measures of economic output vary, depending on the Industry sector. For the Agricultural and Trade sectors, output is measured by the value of products sold. In the Manufacturing sector, output is a measure of the value added by the manufacturer or the value of shipments. In the Service sector, output is measured as receipts in dollars. In 2010, the estimated total output of goods and services for the four-county region was approximately $12.5 billion, as presented in Table 9-126. Madera and Tuolumne counties, which are more urbanized with cities such as Madera and Sonora, produce the majority of the region's economic output. The almost entirely rural counties of Mariposa and Mono contributed only 16% of the output. However, 57% of Mariposa's output was generated in the tourism-heavy services sector.

TABLE 9-126: 2010 ECONOMIC OUTPUT BY COUNTY AND MAJOR INDUSTRY SECTOR (IN CONSTANT 2010 $1,000,000S)

Industry Sector	Individual Counties				Total
	Madera	Mariposa	Mono	Tuolumne	Study Area
Total	$7,699	$885	$1,159	$2,791	$12,535
Agriculture	$1,675	$42	$27	$42	$1,786
Mining	$26	$9	$4	$26	$65
Construction	$327	$63	$99	$225	$714
Manufacturing	$1,201	$39	$47	$170	$1,456
Transp. & Utilities	$337	$38	$20	$133	$527
Trade	$499	$52	$70	$238	$858
Service	$2,774	$501	$682	$1,517	$5,475
Government	$861	$142	$210	$441	$1,654

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants analysis 2010

Taxable Retail Sales

Taxable retail sales are good indicators of annual spending in the Travel Service sectors because these sales represent taxes paid on transactions with consumers. The total taxable retail sales figures from the state Board of Equalization also include the taxes paid by businesses on raw materials and services. In 2010, the total taxable retail sales for the four counties in Table 9-127 were just over $2.0 billion. The previous years' retail volumes have also been converted to constant 2010 dollars for comparison purposes. In real terms, retail sales were actually greater in 2001 at $2.1 billion; grew at a healthy rate through 2006; and then declined with the recession, showing the most dramatic drops in 2008 and 2009. The data suggest that retail sales volumes have stabilized recently.

TABLE 9-127: TOTAL TAXABLE RETAIL SALES BY COUNTY (IN CONSTANT 2010 $1,000,000S)

County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010[a]
Madera	$1,063	$1,110	$1,194	$1,299	$1,464	$1,550	$1,512	$1,344	$1,119	$1,159
Mariposa	$160	$160	$161	$179	$190	$182	$175	$173	$163	$164
Mono	$248	$263	$267	$292	$307	$322	$281	$259	$205	$215
Tuolumne	$660	$670	$685	$723	$727	$704	$679	$616	$533	$508
Total 4-Co. Region	**$2,131**	**$2,204**	**$2,306**	**$2,492**	**$2,688**	**$2,758**	**$2,648**	**$2,392**	**$2,019**	**$2,047**

NOTE:
[a] Annual total estimated by Land Economics Consultants from first three-quarters of data available.

SOURCES: Calif. State Board of Equalization, Taxable Sales in California Annual Reports, Bureau of Labor Statistics (CPI-U)

Madera County

According to the California Employment Development Department, almost a quarter of Madera County employment (23%) was on farms in 2010. When the Food Processing, Service, and Trade sectors of the economy are considered as well, agriculture's dominance in Madera County is obvious. The Leisure and Hospitality sector of the economy accounted for a little more than 6% of the jobs. Federal employment amounted to 300 jobs, or approximately 0.7% of county employment. In terms of fiscal resources, the transient occupancy tax only accounts for approximately 1% of Madera County's General Fund.

Madera County reaches from the crest of the Sierra Nevada range to the San Joaquin River on the Central Valley floor. The majority of the county's population and employment are concentrated along the Highway 99 corridor in the Central Valley. None of the developed parts of Yosemite National Park are in Madera County, but the county includes the headwaters of both the South Fork and the main stem of the Merced River in the high country at the southern end of the park. Because of its large geographic size and diversity of the economy of Madera County, tourism associated with the park is not particularly important to the county as a whole. On the other hand, the eastern communities in the county, specifically Oakhurst and Bass Lake, are much more dependent on Yosemite tourism.

Mariposa County

According to the Employment Development Department, tourism is Mariposa County's main industry and the area's largest employer, with more than a third (37%) of all jobs in the Leisure and Hospitality sector in 2010. The county's primary recreation area/tourist attraction is Yosemite National Park, much of which lies within the county, including the developed areas of Yosemite Valley, Wawona, and El Portal Administrative Site. Other major recreation areas in Mariposa County include Stanislaus National Forest and Sierra National Forest, as well as the U.S. Forest Service/Bureau of Land Management recreation areas along the Merced River. Other recreation resources in Mariposa County include Lake Don Pedro, Lake McSwain, and Lake McClure where camping is available.

Mariposa County's economy is very different than Madera County's. Less than 1% of Mariposa employment is on farms. In contrast, with the national park and forests, federal employment is much more important, accounting for approximately 800 jobs or 16% of county employment in 2010.

From a fiscal standpoint, Mariposa is the most dependent on tourism of the four counties. Almost a quarter of the $42 million Mariposa County General Fund is derived from the Transient Occupancy Tax (TOT), or approximately $10 million in the most recent fiscal year. The TOT is levied at the rate of 10% of the room rate and is collected from Bed and Breakfasts and transient rentals (e.g., Vacation Rentals by Owner), as well as from traditional hotels and motels. In addition, there is another 1% tax on transient rooms in the form of a Tourism Business Improvement District Assessment (TBID). All of the accommodations in Yosemite Valley, as well as those in Wawona, contribute to Mariposa's General Fund through the TOT and generate money for the TBID, as well.

Another way to look at it is Mariposa County collects 62% of the entire TOT generated within the four-county region.

Mono County

Mono County is one of the least populated counties in California and is the gateway county for visitors entering through the eastern park entrance. Park access via this entrance is limited in the winter because the entrance is typically closed from November to late May as a result of snowfall. Lodging, food, beverage, and other services are central to Mono County's economy, which is also bolstered by extensive natural resources and recreational opportunities. As home to the Mammoth Mountain Ski Area, Mono County is a significant tourism destination in the winter. During summer, Mono County is a popular destination for such resort communities as Mammoth Lakes and June Lakes and for backcountry visitation to the John Muir and Ansel Adams Wilderness Areas.

According to Employment Development Department data for 2010, the Leisure and Hospitality sector accounted for almost half (49%) of all employment in Mono County. Federal employment constituted approximately 200 jobs or about 3% of all employment.

Mono County only collects about $2 million per year in Transient Occupancy Taxes, but because it is such a small county, that amount constitutes 7% of the county's General Fund.

Tuolumne County

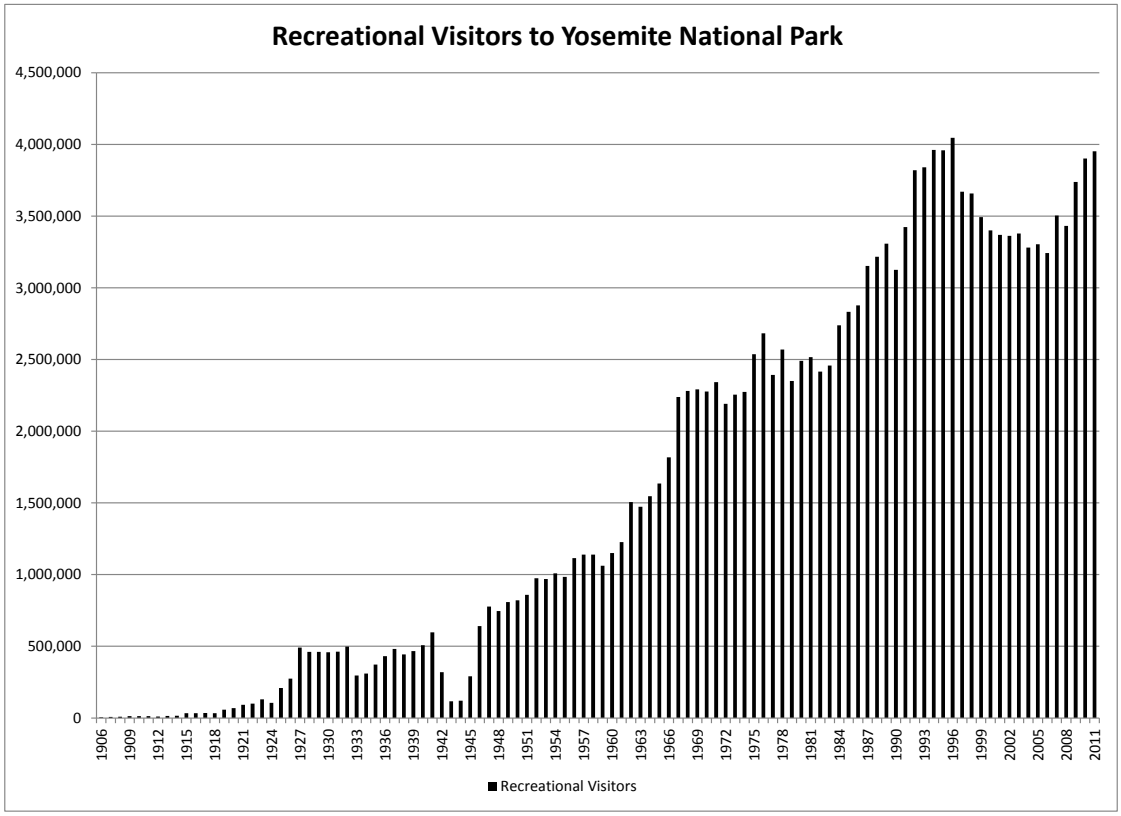
The Tuolumne River watershed portion of Yosemite National Park is in the southeastern portion of Tuolumne County. The county also contains significant national forest lands and the Emigrant Wilderness, with recreation destinations scattered throughout. In addition to Yosemite, other recreational attractions in Tuolumne County include Columbia State Park, Stanislaus National Forest, Dodge Ridge Ski Area, and Pinecrest Lake.

The bulk of Tuolumne County's economy is clustered on private lands along Highways 49 and 108, as well as centered in the town of Sonora. The primary driver of the Tuolumne County economy is the service sector, which is indicative of a large retirement and second home based population in the surrounding Gold Country area of the foothills. According to the Employment Development Department, the Leisure and Hospitality sector accounted for about 12% of the jobs in Tuolumne County in 2010. Federal employment was approximately 400 jobs at that time, or about 3% of county jobs. The TOT in Tuolumne County generates about $2 million per year, representing approximately 4% of the General Fund.

Trends in Visitation to the Park

Socioeconomic impacts are highly correlated with overall visitation. Figure 9-46 shows the trend in estimated total recreational visitation to Yosemite National Park over the last century. According to these estimates, visitation grew explosively at the beginning of the 20th century, only to crash along with the economy in the early 1930s. Then, growth began again, only to be halted by World War II. The post-war era showed strong, long-term growth, peaking in 1996. In 1987, when the Merced was designated a Wild and Scenic River, estimated visitation to the park stood at 3.2 million. The effects of the flood in early 1997, which dramatically reduced the inventory of overnight accommodations in Yosemite Valley, can be seen over the decade subsequent to 1997. The strong growth trend observed prior to 1997 can be seen again in recent years.

Figure 9-46: Estimated Number of Recreational Visitors to Yosemite National Park



Visitor Expenditures

Average Visitor Expenditures

The NPS's Visitor Services Project (VSP surveys) collected data in 2009 on expenditures of visitor groups inside the park and within 50 miles of the park. This data was analyzed in the February 2011 study, *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009*. Spending averages in 2009 were computed per visitor group per day (or per night) for different market segments defined by the type and location of accommodations used. The observed 2009 spending averages were adjusted using the Consumer Price Index (CPI) to 2010 dollars, as presented in Table 9-128. On a visitor group per day basis, average spending was $75 for day trips by local residents, $87 for day trips by nonlocal visitors, $371 per night for visitors staying in park lodges or cabins, and $170 per night for park campers. Visitors staying in motels, cabins, lodges, or bed and breakfasts (B&Bs) outside the park spent an average of $313 per night during their trips and those camping outside the park spent $131 per night. The "other overnight" column includes visitors staying in backcountry locations or with friends and relatives, and includes spending within the four-county area as visitors approach and leave the park.

The VSP Survey found that about 47% of visitor groups' total spending is inside the park and 53% is outside the park. As one would expect, visitor groups staying overnight inside the park spent the majority of their money inside the park, and visitor groups staying outside the park spent most of their money in surrounding communities. A higher percentage of campers' spending is on groceries, whereas visitor groups staying in lodges, cabins, and motels spend more on restaurant meals.

TABLE 9-128: AVERAGE SPENDING PER DAY/NIGHT FOR VISITOR GROUPS IN 2010 DOLLARS

Spending Category	Average Spending per Day/Night Visitor Groups in 2010 Dollars[a]						
	Local	Day Trip	Motel-in	Camp-in	Motel-out	Camp-out	Other Overnight
Motel, hotel, cabin, transient rental, or Bed & Breakfast	$0.00	$0.00	$213.91	$2.52	$144.52	$0.00	$0.00
Camping fees	$0.00	$0.00	$1.67	$34.49	$1.31	$28.59	$0.00
Restaurants & bars	$21.99	$17.04	$61.09	$23.18	$49.04	$24.46	$12.12
Groceries & takeout food	$18.98	$10.98	$18.61	$20.98	$17.08	$16.07	$4.55
Gas & oil	$17.21	$16.63	$18.72	$30.01	$26.34	$31.00	$9.84
Local transportation	$0.00	$3.94	$9.82	$0.80	$31.09	$4.35	$1.63
Admission & fees	$11.71	$23.68	$25.35	$38.26	$22.51	$12.94	$5.79
Souvenirs & other expenses	$4.74	$14.43	$22.02	$19.79	$21.07	$13.40	$3.61
Total per Visitor Group	**$74.64**	**$86.71**	**$371.17**	**$170.02**	**$312.95**	**$130.81**	**$37.54**

NOTE:

[a] Adjusted from the 2009 Visitor Services Project survey results using the Consumer Price Index for All Urban Consumers, by industry category.

SOURCE: Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009*, February, 2011[

Total Visitor Expenditures and Economic Impacts

The total economic impact on the four-county study area from Yosemite National Park visitor spending and the NPS payroll in the baseline year of 2010 was recently calculated as part of an ongoing effort to estimate the economic benefits of national parks to their local communities (Stynes 2011). The summary statistics from this effort are presented in Table 9-129. For the analysis of alternatives to follow, a model of the four-county economy has been constructed, and the impacts of visitor spending and the NPS payroll are analyzed using IMPLAN and the NPS Money Generation Model (MGM2), as described in the "Environmental Consequences Methodology" section, below. The model was calibrated using the published summary statistics in Table 9-126 as control totals.

TABLE 9-129: TOTAL SPENDING AND ECONOMIC IMPACTS: YOSEMITE NATIONAL PARK, 2010

	Summary Statistics
Public Use Data	
2010 Recreation Visits	3,901,408
2010 Overnight Stays	1,720,909
Visitor Spending 2010	
All Visitors	$354,689,000
Nonlocal Visitors	$350,244,000
Impacts of Nonlocal Visitor Spending	
Jobs	4,602
Labor Income	$132,465,000
Value Added	$215,932,000

SOURCE: Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* December 2011

Environmental Consequences Methodology

Use of Established Regional Economic Analysis Models

To quantitatively analyze the alternatives, including the Alternative 1 (No Action), a series of interlinked economic models has been developed that calculate economic impacts within the four-county region containing Yosemite National Park. The methodology for this EIS has been built in consultation with the ongoing providers of analyses of this type to the NPS. The central model for estimating economic impacts is the Money Generation Model 2 (MGM2) developed by Stynes et al. The three main inputs to the MGM2 version used here, and their sources, are

1. annual number of visitors to Yosemite broken down by lodging-based market segments, with a baseline calibrated using 2010 actual totals from NPS Public Use Data
2. spending averages for each lodging-based market segment from the Visitor Services Project, with the most recent survey data having been collected in 2009 and updated to 2010 dollars
3. economic multipliers generated by IMPLAN[1] from the four-county region for 2010

Data for the calendar year 2010 were used for development and calibration of a baseline set of models for this socioeconomic analysis. The year 2010 is the most recent for which IMPLAN multipliers are available. Fortunately, 2010 is also a U.S. Census year and at this time is the most recent year for which historical data are reliably available across a wide variety of socioeconomic measures. In 2010, the number of visitors to the park was approximately equal to the highest recorded numbers, with the previous record set in 1996 before the flood damage in early 1997. The goal of the baseline socioeconomic analysis was to create a series of operable economic models that can reproduce the results of ongoing economic impact estimation conducted for the NPS (as reported in the "Affected Environment" section, above). Having calibrated the operable set of models for the baseline year of 2010, the same models can be used to analyze the Alternative 1 as well as Alternatives 2–6 (the action alternatives) to produce results that can be reliably compared. In essence, the modeling of alternatives will be driven by the levels of annual visitation resulting from the management plans for each alternative as if each were in place today. Based on visitor spending patterns, the total level of economic activity generated in the region can be estimated. Visitor spending impacts are thus estimated in terms of 2010 dollars but for numbers of visitors appropriate to each alternative, compared to the number of visitors under Alternative 1 during the same time frame. Under the no action alternative it is expected that the number of people seeking to visit the park will continue to grow at approximately 3% per year over the next five years.

Economic Modeling Focuses on the Regional Level

An economic impact analysis that involves IMPLAN modeling is typically concerned with the economic development potential of projects or management plans for a region. Thus, such an analysis typically ignores local spending transfers within the region and focuses only on new income that is derived from outside the region as the measure of "economic impact." However, this analysis is interested in how alternative management plans might affect the use of the park by local residents of the gateway communities in the surrounding four counties. A less frequent but no less legitimate application of IMPLAN is to estimate total

[1] IMPLAN is a proprietary model (IMpact for PLANning) developed originally for the federal government in the 1980s at the University of Minnesota and now vended by MIG, Inc. (formerly the Minnesota IMPLAN Group, Inc.) to estimate the economic impacts of projects or policy changes on specific regions of study. Among other things, the model produces multipliers that facilitate the estimation of major economic impacts from input variables.

"economic activity," which is a measure of total economic importance and which includes the economic activity stimulated by the spending of local residents associated with recreation in Yosemite. For the alternatives analyses in this EIS, spending by locals has been included so that changes in their recreation or spending patterns can be considered. Although spending by locals would not be included in a traditional economic impact analysis, the term "economic impact" (rather than "economic activity") is used throughout this narrative to conform to the expectations of readers of NEPA analyses.

Two Primary Economic Drivers: Visitor Spending and NPS Spending

The majority of the economic activity, including all the direct employment in concessioner-run facilities in the park, is driven by visitors. A minor portion of the economic activity is driven by the payroll and spending of the NPS itself, which will be estimated separately after the visitor-driven impact analysis.

Because socioeconomic analysis is concerned with matters such as job creation and business opportunities, an annual perspective is required (e.g., jobs are created by flows of money sufficient to support living wages and incomes; business viability depends on ongoing revenue potential, including off seasons as well as high seasons, etc.). The NPS's MGM2 model is built to analyze economic impacts for an entire year of a park's operation. Furthermore, for this analysis, a parkwide perspective, including all river segments, must be adopted in order to capture all visitor spending. The visitor spending data were collected for the entire park visit, including travel two and from the park, and included spending anywhere within the four-county host region for the park. For example, even visitors staying in backpacking camps in the wilderness depend on purchases made earlier, and visitors' purchases of supplies in gateway communities, although modest, still contribute to the size of the four-county economy. For these reasons, an estimate of the annual, parkwide visits resulting from each alternative management plan is required as an input to the socioeconomic models.

Derivation of the Impact on Visitor Spending

Table 9-130 presents a means of providing the future annual parkwide visitor estimate required for each alternative, based on the experience of the most recent calendar year, but considering the potential for future growth in demand for visits at approximately 3% per year, and differences in the supply of overnight accommodations and day use facilities in Yosemite Valley under the various management plans. In the analysis of transportation, the number of vehicles was tracked on a daily basis for 2011. Using a factor of 2.9 people per vehicle on the average, it was possible to estimate the number of visits to Yosemite Valley on each day in 2011. Under the No Action Alternative it was estimated the Valley was able to handle a maximum of 20,900 people in a day, which was consistent with a total estimated visitation in the park during 2011 of 3,951,000.

The different plans for infrastructure and facilities for each action alternative would result in a different maximum number of visitors that could be accommodated in the Valley. Under Alternatives 2 through 5, those maximums are smaller than the No Action Alternative, and for each alternative total parkwide visitation is projected to be less than what was observed in 2011 by the number of visitors that would have exceeded the daily maximums in the Valley. For example, for Alternative 3 a combined total of 366,000 visitors would have not been able to visit the Valley during 91 days that the maximum was exceeded. Total parkwide estimated visitation was thus reduced to a projected 3,586,000 for Alternative 3.

The proposed mix of infrastructure and facilities in Alternative 6 would allow for a higher maximum daily visitation to the Valley then under the No Action Alternative. In that case, visitation could continue to grow for two more years at the assumed rate of 3% per year before the same pattern of exceeding maximums on

TABLE 9-130: ANNUAL PARKWIDE VISIT ESTIMATES FOR EACH ALTERNATIVE

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Estimated Maximum Daily Visitation to the Valley	20,900	13,900	13,200	17,000	20,100	21,800
Number of Days Where Maximum Would Be Exceeded	0	87	91	68	10	1
Estimated Park-Wide Annual Visitation in 2011[a]	3,951,393	3,951,393	3,951,393	3,951,393	3,951,393	4,192,033
Change from Park-Wide Annual Visitation (People)	0	(306,514)	(365,857)	(74,039)	(2,398)	(1,116)
Estimated Park-Wide Visitation Achievable Within Maximums	**3,951,393**	**3,644,879**	**3,585,536**	**3,877,354**	**3,948,995**	**4,190,917**

NOTE:
[a] 2011 Estimate from National Park Service Public Use Statistics Office for Alts 1 - 5. Alt 6 includes 2 years growth at 3%/year.

SOURCE: Estimates by Land Economics Consultants 2012

peak days is experienced. After two years of growth, the maximum would be exceeded on one day, reducing visitation by 1,116, and resulting in an estimate for parkwide visitation at that point of approximately 4,191,000. These estimates on the bottom line of Table 9-130 will be used as inputs to the economic impact analysis of visitor spending in the sections to follow.

In reality, total annual visits to the park will most likely not decrease by as much as the estimates at the bottom of Table 9-130 due to two effects commonly observed in economic market systems:

1. A "substitution effect" is possible during high-demand periods. That is, when people are unable to secure their first-choice lodging type, some will likely substitute a second-choice mode of visiting the park. For example, unable to get a reservation for concessioner lodging in the Valley, some people will likely opt for a motel in a gateway community and be repeat day visitors to the park during their stay.
2. A displacement or "time-shift effect" is possible, as well. Unable to secure reservations for their first-choice time period to visit the park, some people will likely change their plans to visit the park during a less popular period, but still contributing to the annual visitation numbers.

Although the extent of these human behaviors is unquantifiable at this time, it is highly likely that some combination of these and other mechanisms for economic adaptation will reduce the severity of adverse economic impacts, and it is possible that adverse impacts would be eliminated altogether. It is also possible that with continued growth in demand into the future, total parkwide annual visitation would continue to grow through these mechanisms, expanding into previously low-demand seasons and thereby continuing to increase visitor spending in the four-county economy. Economic expansion could also occur as Gateway business communities' market alternative activities and destinations so that people stay in the area longer even though they are not spending the entire time in Yosemite.

To match visitor types with the visitor spending patterns quantified by the 2009 VSP Survey, other results from the visitor survey will be used below for each alternative to first apportion the total annual visits from Table 9-130 into lodging-based market segments and then to convert total number of visitors entering the park into visitor group nights (or days) by taking into account factors for:

- average visitor group size
- length of stay (days or nights)
- re-entry rate (park entries per trip)

The number of visitor group nights will then be multiplied by the spending patterns for each group, and the total impact on the four-county economy will be estimated for each alternative.

Derivation of the Impact on NPS Spending

An additional source of economic expansion within the four-county area is direct NPS spending. Therefore, the impact of NPS employment and operations and maintenance spending must also be estimated for each alternative. Table 9-131 presents a method for estimating the impact of each management plan on NPS employment and budget for employee compensation. This is a very simple extrapolation of data that correlates with present headcount, provided as an illustration of possible impacts of employee spending in the region. Starting with the estimation of annual visits, NPS employment is also assumed to vary with the annual volume of visitors parkwide. However, employment is subject to separation into fixed and variable costs. An analysis of the last five fiscal years of budgets for the park (2007 through 2011) has shown that 56% of the budget has come from "appropriated funds" and 44% from "revenue funds." Given that the appropriated funds are relatively fixed, and that the term "revenue funds" implies that they fluctuate somewhat with the number of visitors, Table 9-131 assumes that 56% of employment and compensation are fixed (i.e., would remain the same in all alternatives), and that 44% of NPS jobs would vary in proportion to the increase or decrease in visitor volumes.

TABLE 9-131: NATIONAL PARK SERVICE DIRECT EMPLOYMENT AND BUDGET FOR EACH ALTERNATIVE

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Estimated Parkwide Visits Considering Constraints	3,951,393	3,644,879	3,585,536	3,877,354	3,948,995	4,190,917
Difference from Alternative 1 (No Action)	100%	92%	91%	98%	100%	106%
Total National Park Service Direct Employment in 2010 (Jobs)[1]	892					
Portion of Jobs Assumed Fixed	56%					
Portion of Jobs Assumed to Vary With Visitor Volume	44%					
Estimated Direct National Park Service Jobs for Each Alternative	**892**	**862**	**856**	**885**	**892**	**916**
Total **National Park Service** Direct Employee Compensation (2010 $1,000s)[a]	$49,406					
Portion Assumed to be Fixed Cost	56%					
Portion Assumed to Vary with Visitor Volume	44%					
Estimated Direct National Park Service Compensation for Each Alternative (2010 $1,000s)	**$49,406**	**$47,720**	**$47,393**	**$48,999**	**$49,393**	**$50,724**

NOTE:

[a] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCE: Estimates by Land Economics Consultants 2012

In the long run, concessioner employment and operations and maintenance costs are funded by the revenues available to the concessioner, which are derived from visitor spending, and thus are already included in the analysis. In other words, the visitor spending profiles estimated total spending by each visitor group both inside and outside the park. For some visitors, spending on lodging supported hotel workers outside the park, for other visitors spending on lodging inside the park supported hotel workers employed by the concessioner.

It is assumed that park partner activities would remain the same under all alternatives.

One-Time Impacts of NPS Spending on Restoration and Construction Projects

In addition to ongoing spending discussed above that will continue on, year after year, for "in-house" NPS staff and their activities, there is additional work performed every year by contractors on specific restoration projects, major road maintenance and other infrastructure projects, on environmental processing and planning, and for similar activities. The budgets for these activities vary significantly year by year as funding is identified for specific projects. Over the last five years (2007-2011) the total Yosemite National Park budget has ranged from $70 to $103 million, and has averaged $89 million. After deducting the $49 million in NPS staff costs discussed above, the average budget for contractor activities has been approximately $40 million per year. The majority of contractor activity, estimated at 80%, is in the construction sector of the economy, with most of the remainder, estimated at 20%, in the professional services sector (e.g., architects, environmental planners, engineers, etc.) Thus, under the No Action Alternative, approximately $32 million per year is spent on construction sector projects, and $8 million per year for the professional services to plan and design those projects.

In addition to the ongoing spending to maintain and repair the park, each action alternative essentially proposes a new plan for infrastructure and facilities that will guide future spending on projects, most of which will be carried out by contractors as described above. There will be one-time spending by NPS on the various project elements required to restore areas and construct facilities to implement each of the action alternatives. Although this spending will be spread out over a number of years during implementation as financial resources are identified, each project element will be built only once. The current estimates for the total implementation cost are as follows:

- Alternative 1 — There would be no additional costs for Alternative 1 (No Action)
- Alternative 2 -— $263,000,000
- Alternative 3 — $187,000,000
- Alternative 4 — $223,000,000
- Alternative 5 — $235,000,000
- Alternative 6 — $418,000,000

Characterization of Impacts for NEPA

Proposed management actions under Alternative 1 and for Alternatives 2–6 will be evaluated in terms of the context, intensity, and duration of socioeconomic impacts and whether impacts were considered beneficial or adverse to the socioeconomic environment.

- **Context.** The context of the impact considers whether the impact would be local or regional. Unlike the analysis of most other topic areas, socioeconomics differs in that even "local" impacts are not confined to any one river segment. Although it is true that the largest concentration of commercial facilities within the park is in Yosemite Valley, visitors to the Valley may also make expenditures elsewhere within the region during their visits (e.g., stopping for gasoline in a gateway community). The indirect and induced effects quickly ripple away from the initial point of sale where the direct impact occurs, and total economic impacts are only measurable at the regional level. For purposes of this analysis, local impacts would be those that occur parkwide within Yosemite National Park. Regional impacts would be impacts in the four-county area around the park (Tuolumne, Mono,

Mariposa, and Madera), including all gateway communities. Socioeconomic impacts will be discussed under the heading of "All River Segments."

- **Intensity.** The intensity of the impact considers whether effects would be negligible, minor, moderate, or major.
  - ***Negligible*** impacts are considered not detectable and are expected to have no discernible effect on the social and economic environment. When the socioeconomic impacts are quantifiable, negligible impacts would generally be expected to correspond to proportional changes of 2.5% or less in the specific economic resource.
  - ***Minor*** impacts are slightly detectable and are not expected to have an overall effect on the character of the social and economic environment. When the socioeconomic impacts are quantifiable, minor impacts would generally be expected to correspond to proportional changes between 2.5% and 5% in the specific economic resource.
  - ***Moderate*** impacts are detectable, without question, and could have an appreciable effect on the social and economic environment. Such impacts would have the potential to initiate an increasing influence on the social and economic environment (particularly if other factors have a contributing effect). When the socioeconomic impacts are quantifiable, moderate impacts would generally be expected to correspond to proportional changes between 5% and 10% in the specific economic resource.
  - ***Major*** impacts are considered to have a substantial, highly noticeable influence on the social and economic environment and could be expected to alter that environment over the long run. When the socioeconomic impacts are quantifiable, major impacts would generally be expected to correspond to proportional changes greater than 10% in the specific economic resource.

  In addition, impacts are recognized as indeterminate if the intensity of their effects on the social and economic environment could not be readily identified (especially when compared with the potential influence of other social and economic factors and/or when data limitations exist).[2]

- **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 and would be associated with transitional types of activities. A long-term impact would have an ongoing effect on the socioeconomic environment.

- **Type of Impact.** Impacts were evaluated in terms of whether they would be beneficial or adverse to the socioeconomic environment. Beneficial socioeconomic impacts would improve the social or economic conditions in the park or in the affected region. Beneficial impacts include mechanisms that attract additional visitors and spending into the region, create new jobs, or promote growth in the size of the regional economy. Adverse socioeconomic impacts would negatively alter social or economic conditions in the park or in the affected region, or would affect low-income populations. Adverse impacts include mechanisms that discourage some visitors from coming and spending money in the region, reductions in the number of jobs, or actions that retard the growth of the economy. Another, more specific, form of socioeconomic impact is the effect actions could have on the budgets of public agencies. Increases in revenues and reductions in costs are beneficial, and the

[2] The extent to which quantified socioeconomic analysis of the alternatives can be performed will depend directly on the degree to which: (1) the no-action alternative is quantitatively characterized; (2) alternatives are quantifiable distinct from the no-action alternative and amongst the action alternatives; and (3) that the action alternatives' effects on future park visitation can be adequately projected.

Differences in the magnitude of future annual visitation will be a potential primary factor resulting in quantifiable effects to local and regional socioeconomic resources. In addition, changes to the type of visitation (e.g., day use versus overnight use, length of stay, visitor activity type and/or location) or the visitor profile (e.g., age and income) could be used to project related socioeconomic impacts. However, given the multitude of factors involved with visitors' recreation decision-making, it may in some cases be too difficult or speculative to project the changes in visitation patterns within the park and future visitor responses resulting from proposed ORV and facility changes.

inverse is adverse. Changes in economic activity levels can also stimulate changes in local housing markets. Increasing demand for housing due to economic expansion is generally seen as beneficial by housing providers, but adverse by low-income housing consumers.

Environmental Consequences of Alternative 1 (No Action)

All River Segments

Impacts of Actions to Protect and Enhance River Values

In concept, actions to protect and enhance river values may make visiting the Merced River corridor more or less attractive to recreationists seeking different types of experiences, but in practice it would be the actions that manage visitor use and facilities that primarily would determine the number of people that are able to visit the corridor each year, and all socioeconomic impact analysis will be discussed under that topic heading for each alternative.

Impacts of Actions to Manage Visitor Use and Facilities

The number of visitors (as presented in Table 9-130 above) and the spending patterns (as presented in Table 9-129 above) are both used as inputs to the MGM2 model. To conform to the visitor group per night/day format required by the MGM2 model, the total number of recreation visits counted at the entrances to the park is translated first into "Visits in Party-Days/Nights" in Table 9-132. The translation of individual visitors to groups takes into account factors for

- each visitor market segment's share of total entries to the park
- re-entry rate (park entries per trip)
- average visitor group size
- length of stay (days or nights)

The MGM2 model analyzes spending and impacts by visitor market segment, defined as follows:

- Local-Day User: corresponds to people who live within the four-county region who recreate in the park.
- Non-Local-Day User: person living or staying outside the four-county region who is able to visit the park on a day use basis.
- Motel-In: people staying inside the park within any of the types of lodging accommodations available, other than campgrounds.
- Camp-In: people staying overnight inside the park in developed campgrounds.
- Motel-Out: people staying in commercial lodging outside the park, but within the four-county region.
- Camp-Out: people staying in campgrounds outside the park, but within the four-county region.
- Other Overnight: a miscellaneous category used by the model that includes, among other things, people staying in the backcountry.

The MGM2 model first calculates total visitor spending as presented in Table 9-133. Within a 50-mile radius of the park, Yosemite visitors spent over $381 million measured in 2010 dollars for the baseline visitor year. This is a measure of the most directly observable socioeconomic impact visitors have on the region before estimating multiplier effects.

TABLE 9-132: ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size[a]	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 1		**3,951,393**						
Local-Day User	4.0%	158,056	1.1	143,687	2.2	65,312	1.0	65,312
Non-Local-Day User	24.0%	948,334	1.1	862,122	3.0	287,374	1.0	287,374
Motel-In	11.5%	454,410	1.1	413,100	3.5	118,029	2.4	283,269
Camp-In	9.5%	375,382	1.3	288,756	3.5	82,502	2.8	231,005
Motel-Out	36.5%	1,442,258	1.7	848,387	3.1	273,673	2.2	602,081
Camp-Out	4.0%	158,056	1.9	83,187	3.8	21,891	3.1	67,863
Other Overnight	10.5%	414,896	1.4	296,354	2.8	105,841	2.5	264,602
Totals	**100.0%**	3,951,393		2,935,594		954,622		1,801,506

NOTE:
[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009*, February, 2011

SOURCE: As noted, with Land Economics Consultants analysis 2012

TABLE 9-133: VISITOR GROUPS AND THEIR TOTAL SPENDING BY MARKET SEGMENT FOR THE NO ACTION ALTERNATIVE

Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $1,000s	Percent of Spending
Local-Day User	65,312	$74.64	$4,875	1%
Non-Local-Day User	287,374	$86.71	$24,917	7%
Motel-In	283,269	$371.17	$105,142	28%
Camp-In	231,005	$170.02	$39,276	10%
Motel-Out	602,081	$312.95	$188,424	49%
Camp-Out	67,863	$130.81	$8,877	2%
Other Overnight	264,602	$37.54	$9,933	3%
Totals	**1,801,506**	**$211.74**	**$381,444**	**100%**

SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012

Table 9-134 presents the output of the MGM2 modeling for Alternative 1. Visitor spending generates over 5,300 jobs and over a quarter billion dollars in value added for the four-county region. Value added is technically the sum of labor income, profits and rents, and indirect business taxes, and serves as the best overall measure of the total socioeconomic significance of visitor spending within the four-county study region.

Ongoing NPS Spending

Visitor spending accounts for the majority of economic activity, but direct spending by the NPS, through its operating budget, payroll/staffing, and capital projects, also generates economic activity in the four-county study area. Table 9-135 analyzes the economic effects of the NPS payroll and employment within the four-county region. Although the NPS only supported 892 jobs directly from its payroll in 2010, total job creation within the four-county economic region included another 294 induced jobs, for a total employment impact of almost 1,200. Similarly, the $49 million NPS payroll generated over $63 million in economic value to the surrounding economy.

TABLE 9-134: TOTAL ECONOMIC ACTIVITY (FOUR COUNTY REGION) DUE TO VISITOR SPENDING FOR ALTERNATIVE 1 (NO ACTION)

Sector/Spending Category	Sales $1,000s	Jobs	Labor Income $1,000s	Value Added $1,000s
Direct Effects				
Motel, hotel, cabin, transient rental, or B&B	$148,186	1,409	$39,236	$84,127
Camping fees	$11,168	145	$3,508	$5,066
Restaurants & bars	$63,385	1,098	$21,287	$34,596
Admissions & fees	$39,551	705	$10,618	$23,671
Local transportation	$23,545	495	$11,866	$18,020
Grocery stores	$6,855	103	$3,441	$5,004
Gas stations	$8,631	47	$4,323	$6,420
Other retail	$14,907	261	$6,876	$11,206
Wholesale trade	$1,510	10	$530	$1,123
Local Production of goods	$189	1	$27	$75
Total Direct Effects	**$317,926**	**4,274**	**$101,712**	**$189,308**
Indirect and Induced Effects	$125,729	1,083	$36,317	$76,447
Total Effects	**$443,655**	**5,357**	**$138,029**	**$265,754**
Multiplier	1.40	1.25	1.36	1.40

NOTE: Current economic impacts are measured in 2010 dollars.

SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012

TABLE 9-135: ECONOMIC IMPACTS OF NATIONAL PARK SERVICE PAYROLL AND EMPLOYMENT

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs	892	1.33	294	1,186
Labor Income				
NPS Payroll[b]				
Salaries $1,000s	$39,283			
Benefits $1,000s	$10,123			
Total Compensation	$49,406	1.15	$7,643	$57,049
Value Added				
Total Compensation	$49,406	1.29	$14,155	$63,561

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.

[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants analysis 2012

For the No Action Alternative it is also necessary to account for the portion of the Yosemite National Park budget that goes to purposes other than direct employee compensation. As was discussed in the methodology section, over the last five years this spending has averaged approximately $40 million per year. Table 9-136 presents an analysis of the regional impact of that spending, starting with the assumption that approximately 80% goes into the construction sector and 20% into such professional services as architecture, engineering, environmental and other technical consulting services. Not all of the NPS spending on contractor activities is captured within the four-county region because some firms are from beyond this area, resulting in multipliers that are less than 1.00. Including the direct, indirect and induced effects on value added, however, the majority stays within the region and supports the equivalent of approximately 357 additional jobs in the four counties.

TABLE 9-136: ECONOMIC IMPACTS OF THE NON-PAYROLL PORTION OF THE NPS BUDGET IN THE NO ACTION ALTERNATIVE

	Average Annual Budget		Value Added		Employment	
Spending by Sector	**Assumed Percent**	**(Millions $)**	**Multiplier[a]**	**(Millions $)**	**Multiplier (Jobs/ $ million)[b]**	**No. of Jobs**
Construction Sector	80%	$32.0	0.66	$21.1	10.93	231
Professional Services	20%	$8.0	0.81	$6.5	19.42	126
Total	**100%**	**$40.0**		**$27.6**		**357**

NOTES:
[a] Multipliers are averages of IMPLAN sectors 34 and 36, and 369 and 375.
[b] Employment multipliers are number of jobs per million dollars of value added in the region.

SOURCES: As noted; Land Economics Consultants analysis

It is assumed that a comparable average annual spending of approximately $40 million will continue to occur in all of the action alternatives in order to maintain the park's facilities and infrastructure over the long run. As such there will be no differential impact between alternatives from this activity. On the other hand, there will be different one-time costs to modify facilities and infrastructure to implement each alternative, and those impacts will be discussed below for each alternative.

Note that some projects have been undertaken by park partners in the past, which in theory would have added more spending and employment to what is formally in the NPS budget. Future actions of park partners, however, are expected to be independent of which management alternative NPS selects for the Merced River, and thus would be the same for all alternatives. As such, there is no need to treat them further in this analysis.

Also note that all concessioner employment is supported by concessioner revenues derived from visitor spending in concessioner operated facilities. In other words, all concessioner socioeconomic impacts are included in the analysis of visitor spending above.

Summary of Impacts Under Alternative 1 (No Action)

Current trends would be expected to continue under Alternative 1. These trends include full occupancy of lodging and day parking in the park during peak use periods, which implies there is additional demand for visits to the park that is currently being unmet, and would continue to be unmet during peak periods in the future. Some of that unmet demand may increase the demand for visitor services in gateway communities.

Cumulative socioeconomic impacts are derived from changes in the visitor recreation experience and are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region (local and regional) in combination with potential effects of each alternative. Actions evaluated include primarily

those that could affect the level of visitation parkwide and/or the amount of spending by visitors to Yosemite National Park. In addition, changes to NPS staffing levels, operating budget outlays, or capital projects that could affect the economy in the four-county region containing the park are also evaluated.

Past Actions

Today's mix of facilities and infrastructure to accommodate visitors in the park and the attractiveness of the recreational activities available has essentially been created by the cumulative effects of past actions. The more people that visit the park, and the longer they stay in the four-county region, the more likely they are to spend money, which benefits the regional economy. Past actions that have generally resulted in beneficial socioeconomic effects are those that enhance the visitor experience or provide better transportation infrastructure. Past actions generating beneficial socioeconomic effects include El Portal Road Improvement Project, Rehabilitate Yosemite Valley Campground Restrooms, Yosemite Valley Shuttle Fleet Replacement, Yosemite Valley Shuttle Bus Stop Improvements, Wawona Road Rehabilitation Project, and the Lower Yosemite Fall Project. Such projects help to incrementally accommodate high volumes of visitors, to satisfy strong demand and visitor spending is a resulting consequence.

However, other past actions (or inactions after natural events) have had adverse impacts on the size of the regional economy by reducing overnight lodging and camping facilities in Yosemite Valley. Notable examples include:

- *1997 Flood* – The Park sustained heavy impacts to campgrounds, roads, and lodging. The subsequent closure of the Upper & Lower River Campgrounds resulted in the loss of 376 campsites, and approximately one-half of the units at the Yosemite Lodge (there had been 440 units, which decreased to approximately 245). The El Portal Road was under construction for a year (which had regional impacts to Mariposa County from pass through visitors).
- *2000 Yosemite Valley Plan* – The mandatory mass transit element proposed in the YVP to this day causes confusion among potential visitors and may be affecting visitation.
- *2006 Ferguson Rockslide* – This had an adverse effect on parts of the regional economy, primarily the Mariposa area, when Highway 140 was closed for approximately 6 months (during the summer of 2006) for road repairs; however Groveland and Oakhurst benefited from traffic rerouting through those gateways.
- *2008 Rock falls in Curry Village* – Approximately one-third of the overnight accommodations were lost due to the establishment of a rockfall hazard zone. This had an effect on both the concessioner and Mariposa County in terms of TOT. However, a portion of the accommodations were re-established in Boys Town – a.k.a. the "signature tents."
- *2012 Hanta virus in Curry Village* – Not only has this situation caused a decline in stays at Curry Village, there have been thousands of systemic cancelations parkwide as a result.

Decisions not to immediately replace units lost through natural disasters have exacerbated a shortage of accommodations during periods of high demand and thus reduced the amount of economic activity attainable during peak periods.

Present Actions

Similar to past actions, some present actions may result in beneficial socioeconomic effects by improving visitor experience, providing recreational opportunities, or adding facilities that offer educational and cultural experiences. Notable projects that have had a modest beneficial effect on socioeconomics include the following:

- The Ahwahnee Comprehensive Rehabilitation Plan, Rehabilitation of Wawona Road, Tioga Road Rehabilitations, and Tioga Road Corridor Campground Accessibility Improvements have each improved park facilities;
- Commercial Use Authorization for Commercial Activities has improved opportunities for unique recreational experiences; and
- The Half Dome Trail Stewardship Plan has reduced access for some visitors and improved the experience for other visitors. In economic terms, such actions have the potential to reduce the number of visitors but increase the "willingness to pay" or strength of demand among those who remain.

Other ongoing planning efforts that could have an effect on jobs or visitation within the park are summarized below, and described more fully in Appendix B.

Tuolumne Wild and Scenic River Comprehensive Management Plan. This plan assesses the basic economies of the same four counties as the Merced River Plan, Madera, Mariposa, Mono and Tuolumne. Preparers relied on the same baseline data provided by U.S. Census Bureau and the State of California. An increase of 1 percent is anticipated for visitor capacity by the preferred alternative, while the overnight capacity would be decreased by 1 percent due to the proposed reduction of the Glen Aulin High Sierra Camp, by four beds. Day use visitation will be capped at 1,830 persons in the corridor, which represents a modest increase of 4 percent over existing visitation. Overall park visitation and in-park spending would therefore remain largely the same as current conditions. Concessioner revenue and employment would be affected by the elimination of day rides, the mountaineering shop and climbing school and gas station, though not appreciably. The concessioner will incur lower operating costs through decreases in supplies and staffing. While these changes might affect the concessioner's profits, they will bring no significant changes to the regional economy. With no net loss or gain in employment anticipated, and the employee housing largely provided within park boundaries, there are no changes anticipated in the regional housing market.

Taken together, these changes are described by the Tuolumne River Plan's socioeconomic analysis as having a negligible to minor beneficial impact, and are not expected to affect the population, the four-county regional economy, or local economies of the gateway communities. There are no hotels or restaurants in the Tuolumne River Corridor, with the exception of a small number of beds at Glen Aulin High Sierra Camp. Reductions in outfitter and commercial permit operator trips could result in a small decrease in local employment, unless outfitters and operators shift attention to areas outside the Tuolumne River corridor.

Restoration of the Mariposa Grove Ecosystem Project. Completion of the project socioeconomic impact analysis is pending. The scope of this project is limited to the relocation visitor use facilities and restoration of natural resources at one of the most highly-visited attraction sites in Yosemite National Park, a key component of the original Yosemite land grant signed into law in 1864. While important physical changes are proposed, they are localized and intended to accommodate the current amount of visitation. Thus, the project does not have the potential to affect visitor spending, jobs, or housing requirements on a regional, four-county scale.

Reasonably Foreseeable Future Actions

Future actions could have both beneficial and adverse socioeconomic effects. Future natural events may also have an impact, with weather, waterfall volumes, forest fires and other events affecting visitation. Demand for visits to the park will also likely evolve in the future due to changing demographics of visitors to

Yosemite. New facilities planned for the reasonably foreseeable future that could have a notable effect on park visitation and socioeconomic conditions include the Wahhoga Indian Cultural Center and Henness Ridge Environmental Education Center. Reasonably foreseeable future planning efforts with the potential to affect jobs and visitation within the park include the *Wilderness Stewardship Plan*. A socioeconomic impact analysis of the *Plan* will not be completed until project alternatives are developed. However, given the seasonal use of wilderness areas, the limited number of jobs associated with High Sierra Camps and commercial use, the project does not have the potential to affect visitor spending, jobs, or housing requirements on a four-county regional scale.

Overall Cumulative Impact

Future management of Yosemite National Park, particularly areas within or near the Merced River corridor, could result in either beneficial or adverse effects on total economic activity within the four-county region as described above. Except as modified by present and reasonably foreseeable future actions already planned, Alternative 1 would essentially leave conditions as they exist today. Alternative 1 would not meaningfully expand the inventory of camping and overnight lodging opportunities in Yosemite National Park. Although this would not have a cumulatively additive effect compared with current conditions, it would when compared with conditions at the time of designation (1987) and would represent a continued reduction in camping opportunities.

The overall cumulative effect of Alternative 1 would be that visitation is likely to continue to grow at an average rate of approximately 3% per year in the near term (i.e., the next five years). Without new accommodations in Yosemite Valley, growth could occur during peak periods if people substitute accommodations outside the park for preferred in-park camping and lodging. Growth could also occur if the numbers of visitors increases during nonpeak periods. Current total annual visitation is near the historic high of approximately 4 million visitors, though visitor volumes have ranged as low as 3.2 million over the last decade, and the 10-year average is 3.5 million per year. The baseline year in Alternative 1 of 3.95 million is very close to the highest visitation ever experienced. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 1, would be regional, long term, negligible, and beneficial.

Environmental Consequences to Actions Common to Alternatives 2–6

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Changes in management policies can have impacts on the regional economy that will follow effects commonly observed in market economies. A general *qualitative* description of some of the more common effects includes the following:

- For people seeking a visitor experience that includes more than just a daytrip to the park, demand for overnight accommodations tends to focus on Yosemite Valley first and then radiate outwards, filling motels and campgrounds in gateway communities and beyond as those closer fill up. Restriction on supply of accommodations in the park can increase demand outside, and building new campsites or lodging units in the park can decrease demand for accommodations in gateway communities.

- Due to the substitution effect described above, some people seeking an overnight experience in the park but unable to secure accommodations may be willing to substitute a lodging unit in a gateway community for their preferred unit in the Valley, and effectively become repeat day visitors to the park. Their willingness to move to a gateway location would depend in part, however, on their certainty of being able to access the park on a day use basis. A day-use reservation system that assures them that they will have access to the park, even if they are not staying in it, may increase demand for lodging in gateway communities.
- Due to the displacement, or time-shift, effect described above, some people unable to find accommodations in peak seasons may reschedule a planned visit to the park for a lower demand season. But because weather can be less predictable in the shoulder seasons, not all types of accommodations are conducive to this type of time shifting. While hard-sided cabin units may be able to accommodate travelers year round, camping and tent accommodations may not work as well in shoulder seasons.
- The single private business most heavily impacted by Alternatives 2–6 within the park would be the concessioner. A reduction in the inventory of lodging, or in the commercial recreational activities allowed, would decrease concessioner revenues and ultimately reduce the number of concessioner employees needed. With fewer supplies needed and with less employee spending coming out of the park, there would be further reductions through the multiplier effects to the size of the four-county regional economy. But at the same time demand that can no longer be satisfied within the park may shift outside to gateway communities to some extent. This may create new business opportunities there, which would also have multiplier effects that expand the regional economy. The net effects would likely be less dire than the adverse impacts estimated when looking at the concessioner and park alone.
- The existing concessioner is on a short-term extension of an older contract during the study process now underway. Once a management alternative is selected, and the framework for a new concession operation is established, a new concession contract would be executed. The standard NPS process requires that the new agreement represent a viable business, even if it is dramatically different than the business operation that was in place before. In other words, within the park there would be a one-time change to the business model for the concession operation that is agreeable to all parties. To the extent that the new concession business is smaller than what was there before, additional private business opportunities may be created outside the park.
- Each action alternative includes a set of project elements that would restore specific areas or construct and rehabilitate facilities to support visitor use. One-time spending on these capital projects would temporarily employ people in the construction industry within the four-county region. Some specialized construction skills and materials may be imported from beyond the adjacent four counties, but these projects would generate some new income for residents of the region, and the respending of that income would ripple outwards and further expand the economy of the region. The one-time beneficial impacts of construction would subside once the set of projects is fully implemented.

In terms of specific *quantitative* impacts created by the primary drivers of socioeconomics—spending by visitors and the NPS—each action alternative would have a unique impact, and no impacts would be common to all alternatives.

Spending by park partners is assumed to be independent from NPS management decisions and constant across all alternatives. Because the incremental difference between Alternative 1 and Alternatives 2–6 is zero in all cases, park partner activities are not analyzed further below.

Environmental Consequences of Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Alternative 2 would create the greatest reduction in Valley lodging units among Alternatives 2–6, with 46% fewer units than under Alternative 1. Camping spaces in Yosemite Valley would be slightly reduced, by about 3%. The peak day-use parking and transportation infrastructure in Yosemite Valley would be reduced by 23%, as measured by the number of day use parking spaces available. As a result, total annual visitation under Alternative 2 would be a reduction to approximately 3.6 million visitors per year. Table 9-137 applies results of the VSP survey findings to translate that total annual visitation estimate into visitor groups by market segment, which is necessary for input to the economic models.

TABLE 9-137: ALTERNATIVE 2 — ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 2		**3,644,879**						
Local-Day User	4.0%	145,795	1.1	132,541	2.2	60,246	1.0	60,246
Non-Local-Day User	24.0%	874,771	1.1	795,246	3.0	265,082	1.0	265,082
Motel-In	11.5%	419,161	1.1	381,056	3.5	108,873	2.4	261,295
Camp-In	9.5%	346,264	1.3	266,357	3.5	76,102	2.8	213,085
Motel-Out	36.5%	1,330,381	1.7	782,577	3.1	252,444	2.2	555,377
Camp-Out	4.0%	145,795	1.9	76,734	3.8	20,193	3.1	62,599
Other Overnight	10.5%	382,712	1.4	273,366	2.8	97,631	2.5	244,077
Totals	**100.0%**	**3,644,879**		**2,707,877**		**880,571**		**1,661,761**

NOTE:
[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009,* February, 2011

SOURCE: As noted, with Land Economics Consultants analysis 2012

Table 9-138 summarizes total spending derived from the level of visitation produced by analysis of the full pattern of spending within the MGM2 model. While holding constant the factors observed in the 2009 visitor survey produces a reliable estimate of total spending for this level of visitation, there would likely be some shift out of the category Motel-In (lodging units inside the park) and into Motel-Out (lodging outside the park) due to the proposed 46% reduction in overnight lodging units in Alternative 2. These categories have relatively similar spending patterns. Also, Alternative 2 proposes the elimination of some commercial recreational services including swimming pools, bike rentals, rafting and the like. This could alter visitor spending patterns somewhat from what was observed in 2009 when these services were in place. It is possible that reduction in recreational services could also reduce the desire to visit the park in the first place for some, which would make adverse economic impacts slightly larger. It is also possible that some people would be more inclined to visit the park if there was less commercial recreation.

TABLE 9-138: ALTERNATIVE 2 — VISITOR GROUPS AND TOTAL SPENDING BY MARKET SEGMENT

Market Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $000s	Percent of Spending
Local-Day User	60,246	$74.64	$4,497	1%
Non-Local-Day User	265,082	$86.71	$22,985	7%
Motel-In	261,295	$371.17	$96,986	28%
Camp-In	213,085	$170.02	$36,229	10%
Motel-Out	555,377	$312.95	$173,807	49%
Camp-Out	62,599	$130.81	$8,188	2%
Other Overnight	244,077	$37.54	$9,163	3%
Totals	**1,661,761**	**$211.74**	**$351,855**	**100%**
SOURCE: MGM2 model built for Merced River Analysis, Land Economics Consultants 2012				

The MGM2 model also estimates total economic activity in terms of job creation, income to workers, and value added to the four-county regional economy, as presented in Table 9-139. Table 9-139 summarizes the total economic activity associated with visitor spending for Alternative 2. Table 9-140 calculates the economic impacts of NPS spending.

TABLE 9-139: ALTERNATIVE 2 — TOTAL ECONOMIC ACTIVITY DUE TO VISITOR SPENDING (FOUR COUNTY REGION)

Sector/Spending Category	Sales $000s	Jobs	Labor Income $000s	Value Added $000s
Direct Effects				
Motel, hotel cabin, transient rental, or B&B	$136,691	1,299	$36,193	$77,601
Camping fees	$10,302	134	$3,236	$4,673
Restaurants & bars	$58,468	1,013	$19,636	$31,913
Admissions & fees	$36,483	650	$9,794	$21,835
Local transportation	$21,718	456	$10,946	$16,622
Grocery stores	$6,323	95	$3,174	$4,616
Gas stations	$7,961	44	$3,988	$5,922
Other retail	$13,750	241	$6,343	$10,337
Wholesale trade	$1,393	9	$489	$1,036
Local Production of goods	$174	1	$25	$69
Total Direct Effects	**$293,264**	**3,943**	**$93,822**	**$174,623**
Indirect and Induced Effects	$115,976	999	$33,500	$70,517
Total Effects	**$409,240**	**4,941**	**$127,322**	**$245,139**
Multiplier	**1.40**	**1.25**	**1.36**	**1.40**
NOTE: Current economic impacts are measured in 2010 dollars. SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012				

TABLE 9-140: ALTERNATIVE 2 — ECONOMIC IMPACTS OF NATIONAL PARK SERVICE SPENDING

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs[b]	862	1.33	284	1,146
Labor Income				
NPS Payroll[b]				
Salaries $000's	$37,942			
Benefits $000's	$9,777			
Total Compensation	$47,720	1.15	$7,383	$55,102
Value Added				
Total Compensation	$47,720	1.29	$13,672	$61,392

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.
[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants analysis 2012

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

The measure of Alternative 2's socioeconomic impact is the degree to which it differs from Alternative 1. Employment has been adopted as the single best indicator of relative economic impact. The number of jobs would be roughly proportional to other possible measures of socioeconomic impact, such as the impact on personal income (which is the wage and salary income associated with jobs) or the impact on total value added within the regional economy (which, as described under Alternative 1, is technically the sum of labor income, profits and rents, and indirect business taxes). The difference in jobs supported under Alternative 2 and Alternative 1 is presented in Table 9-141, with a detailed breakout by industrial sector within the four-county regional economy. Alternative 2, with its mix of reduced overnight lodging facilities and day use infrastructure, would support 517 fewer jobs than Alternative 1.

The adverse impacts of Alternative 2 might not be as intense as indicated by the job reduction calculated above. As described in the "Environmental Consequences Methodology" section, substitution and time-shift effects could offset some of the visitation displaced during peak times and seasons and soften ore even negate the economic impact portrayed here. In the context of total employment within the four-county region, Alternative 2 would support 456 fewer jobs than Alternative 1, and because it would be less than 2.5% fewer jobs the impact would be regional, long term, negligible, and adverse (see Table 9-142).

Job reduction would be more substantial in specific industry sectors within the four-county region, however. In the lodging industry alone, the reduction in jobs resulting from Alternative 2 would be a long-term, minor, adverse impact. However, to the extent that hotel and motel occupancy increases in gateway communities as a result of the Alternative 2 reduction in Yosemite Valley accommodations, some or all of the adverse impact could be compensated. Similarly, to the extent that overnight visitors to Yosemite Valley are displaced but shift their visits to a different time, the adverse impact could be mitigated.

TABLE 9-141: ALTERNATIVE 2 — IMPACT ON JOBS BY INDUSTRY SECTOR (FOUR COUNTY REGION)

Sector/Spending Category	Jobs Under Alt. 1 (No Action)	Jobs Under Alt. 2	Difference in Jobs
Direct Effects			
Motel, hotel cabin, or B&B	1,409	1,299	(109)
Camping fees	145	134	(11)
Restaurants & bars	1,098	1,013	(85)
Admissions & fees	705	650	(55)
Local transportation	495	456	(38)
Grocery stores	103	95	(8)
Gas stations	47	44	(4)
Other retail	261	241	(20)
Wholesale trade	10	9	(1)
Local Production of goods	1	1	(0)
Total Direct Effects	4,274	3,943	(332)
Indirect and Induced Effects	1,083	999	(84)
Total Effects of Visitor Spending	5,357	4,941	(416)
National Park Service Total Employment Effects	1,186	1,146	(40)
Total Job Creation in Four Counties	6,543	6,087	(456)

SOURCE: MGM2 model, Land Economics Consultants 2012

TABLE 9-142: ALTERNATIVE 2 – CHARACTERIZATION OF IMPACT SIGNIFICANCE

Industry Sector	Total Jobs in the 4-County Region	Alt. 2: Net Impact on Jobs	Impact as % of Total	Characterization of Impact Significance	
Total Impacts (including Indirect & Induced Effects)	**102,273**	**(456)**	**-0.4%**	**Negligible**	**Adverse**
Direct Impacts on Specific Sectors[a]					
Agriculture	13,619	0	0.0%	No Impact	
Mining	310	0	0.0%	No Impact	
Construction	5,115	0	0.0%	No Impact	
Manufacturing	4,043	0	0.0%	No Impact	
Transportation (and Public Utilities)	2,074	(38)	-1.9%	Negligible	Adverse
Retail Stores (and Wholesale Trade)	10,314	(33)	-0.3%	Negligible	Adverse
Lodging Industry	3,637	(121)	-3.3%	Minor	Adverse
Restaurants and Bars	5,887	(85)	-1.4%	Negligible	Adverse
All Other Service Industries	36,446	(55)	-0.2%	Negligible	Adverse
Government (Local, State, & Fed.)	20,828	(40)	-0.2%	Negligible	Adverse

NOTE:
[a] Indirect and induced effects would be spread throughout all the sectors of the economy and would have a negligible impact.

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants analysis 2012

For the Restaurant and Bar sector of the regional economy, the long-term, adverse impact on jobs would be negligible in intensity. The intensity could be reduced by substitution and time-shift effects that maintain volumes of visitors and spending.

Within the four-county regional economy, the single business in the Lodging and Restaurant sectors most affected by Alternative 2 would be the concessioner within the park. This would also constitute the one impact felt in the local context of the park, and a 43% reduction in lodging would no doubt be seen as a noticeable adverse impact by the existing concessioner. In the long term, however, a new concession agreement would result from the issuance of a Contract Prospectus describing the business opportunity offered under the *Merced Wild and Scenic River Comprehensive Management Plan* (CMP). Prior to issuing a prospectus to the public, the NPS must determine that a financially feasible business opportunity exists that would mitigate this local impact by realigning the financial performance expectations of the concessioner with the new facilities and infrastructure to support commercial visitor service in the park.

In the Transportation sector of the regional economy, the long-term, adverse impact on jobs would be negligible in intensity. Note, however, that in addition to the potential mitigating substitution and time-shift effects, the more intensive transportation management efforts under Alternative 2 might require additional staffing for regional public transportation systems and for traffic and parking management in the park.

Just as impacts are felt with different intensities in different sectors of the economy, intensities of impacts would also vary geographically within the four-county regional economy. In the smaller counties of Mariposa and Mono, where the Leisure and Hospitality sector comprises a third to half of all jobs, impacts derived from visitor spending would be more noticeable than in the larger and more diversified economies of Madera and Tuolumne counties. Within counties, gateway communities would experience impacts more intensely than larger and more distant cities that have more diversity in their economic support.

Mariposa County, and the gateway community of Mariposa within it, are likely to be the most noticeably impacted geographic areas because they combine both dependency on tourism industry spending and proximity to the park. A fiscal connection also exists because concessioner lodging in Yosemite Valley lies within Mariposa County, which receives the transient occupancy tax revenue collected there. El Portal Administrative Site falls within Mariposa County. Mariposa is further impacted because it is the closest place for park and concessioner employees to live who do not have housing within the park. Changes in the park workforce living in Mariposa County could cause increases or decreases in demand for county services and affect county revenues. Changes in the park workforce could also change school enrollment, affecting both costs and revenues for local schools.

The maximum fiscal impact of Alternative 2 on Mariposa County could include a reduction of $716,000 in TOT revenue, based on the 10% tax rate and the difference in spending between Alternatives 1 and 2 for all types of lodging, both inside and outside the park. This would be equivalent to a 1.7% reduction in General Fund revenue for the county.

In addition to the ongoing socioeconomic impacts analyzed above, there would be one-time impacts generated by NPS spending on construction and restoration projects to implement Alternative 2, estimated to cost a total of $168 million. If these implementation projects took place evenly over a five-year period, the $34 million per year would be equal to a 4.7% increase in Construction sector output within the region. This impact on the Construction sector would be regional, short term, minor, and beneficial. If the implementation were spread evenly over a longer period of 20 years, the intensity of the impact would drop to negligible (Table 9-142).

Cumulative Impacts from Alternative 2

Past Actions

Past actions would affect Alternative 2 to the same degree they affect Alternative 1 for socioeconomic impacts.

Present Actions

Present actions would affect the cumulative scenario under Alternative 2 to the same degree they affect Alternative 1 for socioeconomic impacts.

Reasonably Foreseeable Future Actions

For socioeconomic impacts, the cumulatively considerable factors would be the same as those described above for Alternative 1. These would include the effects of private decisions made in the gateway communities and elsewhere in the four-county region, as well as those of public decisions in the region and within the park. Over the long run, one of the most functional features of market economies is that they trend toward self-correction. If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may build to the point that private interests may expand supply in surrounding areas by developing additional lodging, restaurants, and other facilities. These effects are likely to be strongest in areas closest to the park, and due to its proximity Mariposa County could be a beneficiary of this additional market demand.

Short of new construction, additional demand may be satisfied by increasing hours and seasons of operations, adding additional staff, and other business operating responses to expand capacities in gateway communities. In the short run, management policies within the park can alter the flow of visitors and shift the mix of overnight and day visitors, but in the long run market adaptations can continue to increase the annual volumes of people visiting the park. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 2, would be regional, long term, negligible, and adverse.

Irreversible and Irretrievable Commitment of Resources for Alternative 2

For the most part, socioeconomic actions are reversible in the sense that markets adapt to changing circumstances and public policies can change strategies over time. On the other hand, the implementation of Alternative 2 would require the one-time expenditure of approximately $168 million to implement the various actions proposed. Once expended, those financial resources would no longer be available for other possible uses, and relatively permanent changes to facilities and infrastructure in the park would have been made. Physical changes made for Alternative 2 may be reversed in the future, but additional financial resources would be required to do so.

Relationship of Short-Term Uses and Long-Term Productivity for Alternative 2

Construction and restoration projects to implement Alternative 2 would create short-term disruptions to visitor use patterns during construction. There would also be a short-term, one-time change to the business model for the concessioner in the park, with a new concession agreement put in place to be consistent with the objectives and scale of facilities produced by Alternative 2. In the long term, a new pattern of economic flows in the region would emerge that would supply visitor services to meet the new level of visitor demand.

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

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Alternative 3 would create the second largest reduction in lodging units, with 40% fewer units than under Alternative 1. The inventory of camping spaces in Yosemite Valley would increase slightly, by about 2%. The day use infrastructure in the Valley would see the largest reduction of all the alternatives, with 32% fewer day use parking spaces. As a result, total annual visitation under Alternative 3 would be a reduction to 3.6 million visitors per year. Table 9-143 applies results of the VSP survey findings to translate that total annual visitation estimate into visitor groups by market segment, which is necessary for input to the economic models.

TABLE 9-143: ALTERNATIVE 3 — ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size[a]	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 3		**3,585,536**						
Local-Day User	4.0%	143,421	1.1	130,383	2.2	59,265	1.0	59,265
Non-Local-Day User	24.0%	860,529	1.1	782,299	3.0	260,766	1.0	260,766
Motel-In	11.5%	412,337	1.1	374,851	3.5	107,100	2.4	257,041
Camp-In	9.5%	340,626	1.3	262,020	3.5	74,863	2.8	209,616
Motel-Out	36.5%	1,308,721	1.7	769,836	3.1	248,334	2.2	546,335
Camp-Out	4.0%	143,421	1.9	75,485	3.8	19,864	3.1	61,580
Other Overnight	10.5%	376,481	1.4	268,915	2.8	96,041	2.5	240,103
Totals	**100.0%**	**3,585,536**		**2,663,789**		**866,234**		**1,634,706**

NOTE:
[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009,* February, 2011

SOURCE: As noted, with Land Economics Consultants analysis 2012

Table 9-144 summarizes total spending derived from the level of visitation produced by analysis of the full pattern of spending within the MGM2 model. While holding constant the factors observed in the 2009 visitor survey produces a reliable estimate of total spending for this level of visitation, there would likely be some shift out of the category Motel-In (lodging units inside the park) and into Motel-Out (lodging outside the park) due to the proposed 40% reduction in units in Alternative 3. These categories have relatively similar spending patterns. Also, Alternative 3 proposes the elimination of some commercial recreational services including swimming pools, bike rentals, rafting and the like. This could alter visitor spending patterns somewhat from what was observed in 2009 when these services were in place. It is possible that reduction in recreational services could also reduce the desire to visit the park in the first place for some, which would make adverse economic impacts slightly larger. It is also possible that some people would be more inclined to visit the park if there was less commercial recreation.

TABLE 9-144: ALTERNATIVE 3 – VISITOR GROUPS AND TOTAL SPENDING BY MARKET SEGMENT

Market Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $000s	Percent of Spending
Local-Day User	59,265	$74.64	$4,423	1%
Non-Local-Day User	260,766	$86.71	$22,610	7%
Motel-In	257,041	$371.17	$95,407	28%
Camp-In	209,616	$170.02	$35,640	10%
Motel-Out	546,335	$312.95	$170,978	49%
Camp-Out	61,580	$130.81	$8,055	2%
Other Overnight	240,103	$37.54	$9,014	3%
Totals	**1,634,706**	**$211.74**	**$346,127**	**100%**
SOURCE: MGM2 model built for Merced River Analysis, Land Economics Consultants 2012				

The MGM2 model also estimates total economic activity in terms of job creation, income to workers, and value added to the four-county regional economy, as presented in Table 9-145. Table 9-146 calculates economic impacts of NPS spending.

TABLE 9-145: ALTERNATIVE 3 — TOTAL ECONOMIC ACTIVITY DUE TO VISITOR SPENDING

Sector/Spending Category	Sales $000s	Jobs	Labor Income $000s	Value Added $000s
Direct Effects				
Motel, hotel cabin, transient rental, or B&B	$134,466	1,278	$35,603	$76,338
Camping fees	$10,134	132	$3,184	$4,597
Restaurants & bars	$57,516	996	$19,316	$31,393
Admissions & fees	$35,889	640	$9,634	$21,479
Local transportation	$21,365	449	$10,768	$16,351
Grocery stores	$6,220	94	$3,122	$4,541
Gas stations	$7,832	43	$3,923	$5,825
Other retail	$13,527	237	$6,239	$10,169
Wholesale trade	$1,370	9	$481	$1,019
Local Production of goods	$171	1	$25	$68
Total Direct Effects	$288,489	3,878	$92,295	$171,780
Indirect and Induced Effects	$114,088	982	$32,955	$69,368
Total Effects	$402,577	4,861	$125,249	$241,148
Multiplier	1.40	1.25	1.36	1.40
NOTE: Current economic impacts are measured in 2010 dollars. SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012				

TABLE 9-146: ALTERNATIVE 3 — ECONOMIC IMPACTS OF NATIONAL PARK SERVICE SPENDING

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs[b]	856	1.33	282	1,138
Labor Income				
NPS Payroll[b]				
Salaries $000s	$37,683			
Benefits $000s	$9,711			
Total Compensation	$47,393	1.15	$7,332	$54,725
Value Added				
Total Compensation	$47,393	1.29	$13,579	$60,972

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.

[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants analysis 2012

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

The difference in jobs supported under Alternative 3 and Alternative 1 is presented in Table 9-147, with a detailed breakout by industrial sector within the four-county regional economy. Alternative 3, with its smaller inventory of overnight lodging facilities and reduced day use infrastructure, would support 544 fewer jobs than Alternative 1 (No Action). Similarly to Alternative 2, the adverse impacts of Alternative 3 might not be as intense as indicated by the job reduction calculated above due to substitution and time-shift effects. In the context of total employment within the four-county region, the reduction in jobs resulting from Alternative 3 would be a long-term, adverse impact, but because at -0.5% it is less than the -2.5% threshold for minor, it would be negligible in intensity (see Table 9-148).

For specific industry sectors within the four-county region, however, the job reduction would be more significant. In the lodging industry alone, the reduction in jobs resulting from Alternative 3 would be a long-term, minor, adverse impact. As noted above, to the extent that hotel and motel occupancies increase in gateway communities as a result of the Alternative 3 reduction in Yosemite Valley accommodations, some or all of the adverse impact could be mitigated. Similarly, to the extent that overnight visitors to the Valley are displaced but shift their visits to a different time, the adverse impact could be mitigated.

In the Restaurant and Bar sector of the regional economy, the long-term, adverse impact on jobs would be negligible in intensity. The intensity could be reduced by substitution and time-shift effects that maintain volumes of visitors and spending.

Within the four-county regional economy, the single business in the Lodging and Restaurant sectors most affected by Alternative 3 would be the concessioner within the park. This would also constitute the one impact felt in the local context of the park, and a 36% reduction in lodging would no doubt be seen as a noticeable adverse impact by the existing concessioner. In the long term, however, a new concession agreement would result from the issuance of a Contract Prospectus describing the business opportunity

TABLE 9-147: ALTERNATIVE 3 — IMPACT ON JOBS BY INDUSTRY SECTOR

Sector/Spending Category	Jobs Under Alt. 1 (No Action)	Jobs Under Alt. 3	Difference in Jobs
Direct Effects			
Motel, hotel, cabin, or B&B	1,409	1,278	(130)
Camping fees	145	132	(13)
Restaurants & bars	1,098	996	(102)
Admissions & fees	705	640	(65)
Local transportation	495	449	(46)
Grocery stores	103	94	(10)
Gas stations	47	43	(4)
Other retail	261	237	(24)
Wholesale trade	10	9	(1)
Local Production of goods	1	1	(0)
Total Direct Effects	**4,274**	**3,878**	**(396)**
Indirect and Induced Effects	1,083	982	(100)
Total Effects of Visitor Spending	**5,357**	**4,861**	**(496)**
National Park Service Total Employment Effects	1,186	1,138	(48)
Total Job Creation in Four Counties	**6,543**	**5,999**	**(544)**

SOURCE: MGM2 model, Land Economics Consultants 2012

TABLE 9-148: ALTERNATIVE 3 — CHARACTERIZATION OF IMPACT SIGNIFICANCE

Industry Sector	Total Jobs in the 4-County Region	Alt. 3: Net Impact on Jobs	Impact as % of Total	Characterization of Impact Significance	
Total Impacts (including Indirect & Induced Effects)	**102,273**	**(544)**	**-0.5%**	Negligible	Adverse
Direct Impacts on Specific Sectors[a]					
Agriculture	13,619	0	0.0%	No Impact	
Mining	310	0	0.0%	No Impact	
Construction	5,115	0	0.0%	No Impact	
Manufacturing	4,043	0	0.0%	No Impact	
Transportation (and Public Utilities)	2,074	(46)	-2.2%	Negligible	Adverse
Retail Stores (and Wholesale Trade)	10,314	(39)	-0.4%	Negligible	Adverse
Lodging Industry	3,637	(144)	-4.0%	Minor	Adverse
Restaurants and Bars	5,887	(102)	-1.7%	Negligible	Adverse
All Other Service Industries	36,446	(65)	-0.2%	Negligible	Adverse
Government (Local, State, & Fed.)	20,828	(48)	-0.2%	Negligible	Adverse

NOTE:

[a] Indirect and induced effects would be spread throughout all sectors of the economy and would have a negligible impact.

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants analysis 2012

offered under the CMP. Prior to issuing a Prospectus to the public, the NPS must determine that a financially feasible business opportunity exists that would mitigate this local impact by realigning the financial performance expectations of the concessioner with the new opportunity for commercial visitor service in the park.

In the Transportation sector of the regional economy, the long-term, adverse impact on jobs would be negligible in intensity. Note, however, that in addition to the potential mitigating substitution and time-shift effects, the more intensive transportation management efforts under Alternative 3 might require additional staffing for regional public transportation systems and for traffic and parking management in the park.

Just as impacts are felt with different intensities in different sectors of the economy, intensities of impacts would also vary geographically within the four-county regional economy. In the smaller counties of Mariposa and Mono, where the Leisure and Hospitality sector comprises a third to half of all jobs, impacts derived from visitor spending would be more noticeable than in the larger and more diversified economies of Madera and Tuolumne counties. Within counties, gateway communities would experience impacts more intensely than larger and more distant cities that have more diversity in their economic support.

Mariposa County, and the gateway community of Mariposa within it, is likely to be the most noticeably impacted geographic areas because they combine both dependency on tourism industry spending and proximity to the park. There is also a fiscal connection in that the concessioner lodging in Yosemite Valley lies within Mariposa County, which receives the transient occupancy tax revenue collected there. El Portal Administrative Site falls within Mariposa County. Mariposa is further impacted because it is the closest place for park and concessioner employees to live who do not have housing within the park. Changes in the park workforce living in Mariposa County could cause increases or decreases in demand for county services and affect county revenues. Changes in park workforce could also change school enrollment, affecting both costs and revenues for local schools.

The maximum fiscal impact of Alternative 3 on Mariposa County could include a reduction of $855,000 in TOT revenue, based on the 10% tax rate and the difference in spending between Alternatives 1 and 3 for all types of lodging, both inside and outside the park. This would be equivalent to a 2.0% reduction in General Fund revenue for the county.

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

Past Actions

Past actions would affect the cumulative scenario under Alternative 3 to the same degree they affect Alternative 1 for socioeconomic impacts.

Present Actions

Present actions would affect the cumulative scenario under Alternative 3 to the same degree they affect Alternative 1 for socioeconomic impacts.

Reasonably Foreseeable Future Actions

For socioeconomic impacts, the cumulatively considerable factors would be the same as those described above for Alternative 1. These would include the effects of private decisions made in the gateway communities and elsewhere in the four-county region, as well as those of public decisions in the region and

within the park. Over the long run, one of the most functional features of market economies is that they trend toward self-correction. If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may build to the point that private interests may expand supply in surrounding areas by developing additional lodging, restaurants, and other facilities. These effects are likely to be strongest in areas closest to the park, and due to its proximity Mariposa County could be a beneficiary of this additional market demand.

Short of new construction, additional demand may be satisfied by increasing hours and seasons of operations, adding additional staff, and other business operating responses to expand capacities in gateway communities. In the short run, management policies within the park can alter the flow of visitors and shift the mix of overnight and day visitors, but in the long run market adaptations can continue to increase the annual volumes of people visiting the park. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 3, would be regional, long term, negligible, and adverse.

Irreversible and Irretrievable Commitment of Resources for Alternative 3

For the most part, socioeconomic actions are reversible in the sense that markets adapt to changing circumstances and public policies can change strategies over time. On the other hand, the implementation of Alternative 3 would require the one-time expenditure of approximately $147 million. Once expended, those financial resources would no longer be available for other possible uses, and relatively permanent changes to facilities and infrastructure in the park would have been made. Physical changes made under Alternative 3 may be reversed in the future, but additional financial resources would be required to do so.

Relationship of Short-Term Uses and Long-Term Productivity for Alternative 3

Construction and restoration projects to implement Alternative 3 would create short-term disruptions during construction, but would produce desired changes to the park over the long term. There would also be a short-term, one-time change to the business model for the concessioner in the park, with a new concession agreement put in place to be consistent with the objectives and scale of facilities produced under Alternative 3. In the long term, a new pattern of economic flows in the region would be likely to emerge that would supply visitor services to meet the new level of visitor demand.

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

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Alternative 4 would create a reduction in lodging units, with 20% fewer units than under Alternative 1 (No Action). On the other hand, the inventory of camping spaces in Yosemite Valley would increase by about 50%. The peak day-use infrastructure in the Valley would see a reduction of 13% in day use parking spaces. As a result, total annual visitation under Alternative 4 was a reduction to approximately 3.88 million visitors per year. Table 9-149 applies results of the VSP survey findings to translate that total annual visitation estimate into visitor groups by market segment, which is necessary for input to the economic models.

TABLE 9-149: ALTERNATIVE 4 — ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size[a]	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 4		**3,877,354**						
Local-Day User	4.0%	155,094	1.1	140,995	2.2	64,088	1.0	64,088
Non-Local-Day User	24.0%	930,565	1.1	845,968	3.0	281,989	1.0	281,989
Motel-In	11.5%	445,896	1.1	405,360	3.5	115,817	2.4	277,961
Camp-In	9.5%	368,349	1.3	283,345	3.5	80,956	2.8	226,676
Motel-Out	36.5%	1,415,234	1.7	832,491	3.1	268,545	2.2	590,800
Camp-Out	4.0%	155,094	1.9	81,629	3.8	21,481	3.1	66,592
Other Overnight	10.5%	407,122	1.4	290,802	2.8	103,858	2.5	259,644
Totals	**100.0%**	**3,877,354**		**2,880,588**		**936,735**		**1,767,751**

NOTE:
[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009,* February, 2011

SOURCE: As noted, with Land Economics Consultants analysis 2012

Table 9-150 summarizes the total spending derived from the level of visitation produced by analysis of the full pattern of spending within the MGM2 model. While holding constant the factors observed in the 2009 visitor survey produces a reliable estimate of total spending for this level of visitation, there would likely be some shift out of the category Motel-In (lodging units inside the park) and into Motel-Out (lodging outside the park) due to the proposed 20% reduction in units in Alternative 4. There would also likely be a shift in the opposite direction into more people in the Camp-In category due to the 50% increase in park camping opportunities. These lodging categories have relatively similar spending patterns, however, whether inside or outside the park. Also, Alternative 4 proposes the elimination of some commercial recreational services including swimming pools and bike rentals. This could alter visitor spending patterns somewhat from what was observed in 2009 when these services were in place. It is possible that reduction in recreational services could also reduce the desire to visit the park in the first place for some, which would make adverse economic impacts slightly larger. It is also possible that some would be more inclined to visit the park if there was less commercial recreation.

TABLE 9-150: ALTERNATIVE 4 — VISITOR GROUPS AND TOTAL SPENDING BY MARKET SEGMENT

Market Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $000s	Percent of Spending
Local-Day User	64,088	$74.64	$4,783	1%
Non-Local-Day User	281,989	$86.71	$24,451	7%
Motel-In	277,961	$371.17	$103,172	28%
Camp-In	226,676	$170.02	$38,540	10%
Motel-Out	590,800	$312.95	$184,893	49%
Camp-Out	66,592	$130.81	$8,711	2%
Other Overnight	259,644	$37.54	$9,747	3%
Totals	**1,767,751**	**$211.74**	**$374,297**	**100%**

SOURCE: MGM2 model built for Merced River Analysis, Land Economics Consultants 2012

The MGM2 model also estimates total economic activity in terms of job creation, income to workers, and value added to the four-county regional economy, as presented in Table 9-151. Table 9-152 calculates the economic impacts of NPS spending.

TABLE 9-151: ALTERNATIVE 4 — TOTAL ECONOMIC ACTIVITY DUE TO VISITOR SPENDING

Sector/Spending Category	Sales $000s	Jobs	Labor Income $000s	Value Added $000s
Direct Effects				
Motel, hotel cabin, transient rental, or B&B	$145,409	1,382	$38,501	$82,551
Camping fees	$10,959	143	$3,443	$4,971
Restaurants & bars	$62,197	1,077	$20,888	$33,948
Admissions & fees	$38,810	692	$10,419	$23,227
Local transportation	$23,103	486	$11,644	$17,682
Grocery stores	$6,726	101	$3,376	$4,910
Gas stations	$8,469	46	$4,242	$6,299
Other retail	$14,627	256	$6,747	$10,996
Wholesale trade	$1,482	10	$520	$1,102
Local Production of goods	$185	1	$27	$74
Total Direct Effects	**$311,969**	**4,194**	**$99,806**	**$185,761**
Indirect and Induced Effects	$123,373	1,062	$35,637	$75,014
Total Effects	**$435,342**	**5,256**	**$135,443**	**$260,775**
Multiplier	1.40	1.25	1.36	1.40

NOTE: Current economic impacts are measured in 2010 dollars.

SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012

TABLE 9-152: ALTERNATIVE 4 — ECONOMIC IMPACTS OF NATIONAL PARK SERVICE SPENDING

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs[b]	885	1.33	292	1,176
Labor Income				
NPS Payroll[b]				
Salaries $000s	$38,959			
Benefits $000s	$10,040			
Total Compensation	$48,999	1.15	$7,580	$56,579
Value Added				
Total Compensation	$48,999	1.29	$14,0359	$63,037

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.

[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants analysis 2012

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

The difference in jobs supported under Alternative 4 and Alternative 1 is presented in Table 9-153, with a detailed breakout by industrial sector within the four-county regional economy. Alternative 4, with its different mix of facilities and infrastructure, would support 110 fewer jobs than Alternative 1.

TABLE 9-153: ALTERNATIVE 4 — IMPACT ON JOBS BY INDUSTRY SECTOR

Sector/Spending Category	Jobs Under Alt. 1 (No Action)	Jobs Under Alt. 4	Difference in Jobs
Direct Effects			
Motel, hotel, cabin, or B&B	1,409	1,382	(26)
Camping fees	145	143	(3)
Restaurants & bars	1,098	1,077	(21)
Admissions & fees	705	692	(13)
Local transportation	495	486	(9)
Grocery stores	103	101	(2)
Gas stations	47	46	(1)
Other retail	261	256	(5)
Wholesale trade	10	10	(0)
Local Production of goods	1	1	(0)
Total Direct Effects	**4,274**	**4,194**	**(80)**
Indirect and Induced Effects	1,083	1,062	(20)
Total Effects of Visitor Spending	**5,357**	**5,256**	**(100)**
National Park Service Total Employment Effects	**1,186**	**1,176**	**(10)**
Total Job Creation in Four Counties	**6,543**	**6,433**	**(110)**
SOURCE: MGM2 model, Land Economics Consultants 2012			

As described for other alternatives, the adverse impacts of Alternative 4 might not be as intense as indicated by the job reduction calculated above due to substitution and time-shift effects. In the context of total employment within the four-county region, the reduction in jobs resulting from Alternative 4 would be a long-term, adverse impact, but it would be negligible in intensity (see Table 9-154).

For specific industry sectors within the four-county region, however, the job reduction would be more significant in terms of percentage changes within each sector. In the lodging industry, the reduction in jobs resulting from Alternative 4 would be a long-term, negligible, adverse impact. As noted previously, to the extent that hotel and motel occupancies increase in gateway communities as a result of the Alternative 4 reduction in Yosemite Valley accommodations, some or all of the adverse impact could be mitigated. Similarly, to the extent that overnight visitors to the Valley are displaced but shift their visits to a different time, the adverse impact could be mitigated.

In the Restaurant and Bar sector of the regional economy, the long-term, adverse impact on jobs would also be negligible in intensity. The intensity could be reduced by substitution and time-shift effects that maintain volumes of visitors and spending.

Within the four-county regional economy, the single business in the lodging and restaurant sectors most affected by Alternative 4 would be the concessioner within the park. This would also constitute the one impact felt in the local context of the park, and a 20% reduction in lodging would no doubt be seen as a noticeable

TABLE 9-154: ALTERNATIVE 4 — CHARACTERIZATION OF IMPACT SIGNIFICANCE

Industry Sector	Total Jobs in 4-County Region	Alt. 4: Net Impact on Jobs	Impact as % of Total	Characterization of Impact Significance	
Total Impacts (including Indirect & Induced Effects)	**102,273**	**(110)**	**-0.1%**	Negligible	Adverse
Direct Impacts on Specific Sectors[a]					
Agriculture	13,619	0	0.0%	No Impact	
Mining	310	0	0.0%	No Impact	
Construction	5,115	0	0.0%	No Impact	
Manufacturing	4,043	0	0.0%	No Impact	
Transportation (and Public Utilities)	2,074	(9)	-0.4%	Negligible	Adverse
Retail Stores (and Wholesale Trade)	10,314	(8)	-0.1%	Negligible	Adverse
Lodging Industry	3,637	(29)	-0.8%	Negligible	Adverse
Restaurants and Bars	5,887	(21)	-0.3%	Negligible	Adverse
All Other Service Industries	36,446	(13)	0.0%	Negligible	Adverse
Government (Local, State, & Fed.)	20,828	(10)	0.0%	Negligible	Adverse

NOTE:

[a] Indirect and induced effects would be spread throughout the economy and would have a negligible impact.

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants analysis 2012

adverse impact by the existing concessioner. In the long term, however, a new concession agreement would result from the issuance of a Contract Prospectus describing the business opportunity offered under the CMP. Prior to issuing a Prospectus to the public, the NPS must determine that a financially feasible business opportunity exists that would mitigate this local impact by realigning the financial performance expectations of the concessioner with the new opportunity for commercial visitor service in the park.

In the Transportation sector of the regional economy, the long-term, adverse impact on jobs would be negligible in intensity. Note, however, that in addition to the potential mitigating substitution and time-shift effects, the more intensive transportation management efforts under Alternative 4 might require additional staffing for regional public transportation systems and for traffic and parking management in the park.

Just as impacts are felt with different intensities in different sectors of the economy, intensities of impacts would also vary geographically within the four-county regional economy. In the smaller counties of Mariposa and Mono, where the leisure and hospitality sector comprises a third to half of all jobs, impacts derived from visitor spending would be more noticeable than in the larger and more diversified economies of Madera and Tuolumne counties. Within counties, gateway communities would experience impacts more intensely than larger and more distant cities that have more diversity in their economic support.

Mariposa County, and the gateway community of Mariposa within it, is likely to be the most noticeably impacted geographic areas because they combine both dependency on tourism industry spending and proximity to the park. There is also a fiscal connection in that the concessioner lodging in Yosemite Valley lies within Mariposa County, which receives the transient occupancy tax revenue collected there. El Portal Administrative Site falls within Mariposa County. Mariposa is further impacted because it is the closest place for park and concessioner employees to live who do not have housing within the park. Changes in the park workforce living in Mariposa County could cause increases or decreases in demand for county services and affect county revenues. Changes in park workforce could also change school enrollment, affecting both costs and revenues for local schools.

The maximum fiscal impact of Alternative 4 on Mariposa County could include a reduction of $173,000 in TOT revenue, based on the 10% tax rate and the difference in spending between Alternatives 1 and 4 for all types of lodging, both inside and outside the park. This would be equivalent to a 0.4% reduction in General Fund revenue for the county.

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

Past Actions

Past actions would affect the cumulative scenario under Alternative 4 to the same degree they affect Alternative 1 for socioeconomic impacts.

Present Actions

Present actions would affect the cumulative scenario under Alternative 4 to the same degree they affect Alternative 1 for socioeconomic impacts.

Reasonably Foreseeable Future Actions

For socioeconomic impacts, the cumulatively considerable factors would be the same as those described for Alternative 1. These would include the effects of private decisions made in the gateway communities and elsewhere in the four-county region, as well as those of public decisions in the region and within the park. Over the long run, one of the most functional features of market economies is that they trend towards self-correction. If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may build to the point that private interests may expand supply in surrounding areas by developing additional lodging, restaurants, and other facilities. These effects are likely to be strongest in areas closest to the park, and due to its proximity Mariposa County could be a beneficiary of this additional market demand.

Short of new construction, additional demand may be satisfied by increasing hours and seasons of operations, adding additional staff, and other business operating responses to expand capacities in gateway communities. In the short run, management policies within the park can alter the flow of visitors and shift the mix of overnight and day visitors, but in the long run market adaptations can continue to increase the annual volumes of people visiting the park. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 4, would be regional, long term, negligible, and adverse.

Irreversible and Irretrievable Commitment of Resources for Alternative 4

For the most part, socioeconomic actions are reversible in the sense that markets adapt to changing circumstances and public policies can change strategies over time. On the other hand, the implementation of Alternative 4 would require the one-time expenditure of approximately $168 million. Once expended, those financial resources would no longer be available for other possible uses, and relatively permanent changes to facilities and infrastructure in the park would have been made. Physical changes made under Alternative 4 may be reversed in the future, but additional financial resources would be required to do so.

Relationship of Short-Term Uses and Long-Term Productivity for Alternative 4

Construction and restoration projects to implement Alternative 4 would create short-term disruptions during construction, but would produce desired changes to the park over the long term.

There would also be a short-term, one-time change to the business model for the concessioner in the park, with a new concession agreement put in place to be consistent with the objectives and scale of facilities produced under Alternative 4. In the long term, a new pattern of economic flows in the region would be likely to emerge that would supply visitor services to meet the new level of visitor demand.

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

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Compared with Alternative 1 (No Action), Alternative 5 would create slightly more lodging units in the park, approximately 5% more. The camping unit inventory in Yosemite Valley would grow more substantially, by approximately 37%. Peak day-use infrastructure in the Valley, as measured by the number of day use parking spaces available, would increase by approximately 8%. As a result, and as discussed in the "Environmental Consequences Methodology" section above, the scenario for total annual visitation under Alternative 5 maintains the level generally experienced today, approximately 3.95 million visitors per year. Table 9-155 applies results of the VSP survey findings to translate that total annual visitation estimate into visitor groups by market segment, which is necessary for input to the economic models.

TABLE 9-155: ALTERNATIVE 5 — ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size[a]	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 5		**3,948,995**						
Local-Day User	4.0%	157,960	1.1	143,600	2.2	65,273	1.0	65,273
Non-Local-Day User	24.0%	947,759	1.1	861,599	3.0	287,200	1.0	287,200
Motel-In	11.5%	454,134	1.1	412,849	3.5	117,957	2.4	283,097
Camp-In	9.5%	375,155	1.3	288,580	3.5	82,452	2.8	230,864
Motel-Out	36.5%	1,441,383	1.7	847,872	3.1	273,507	2.2	601,716
Camp-Out	4.0%	157,960	1.9	83,137	3.8	21,878	3.1	67,822
Other Overnight	10.5%	414,644	1.4	296,175	2.8	105,777	2.5	264,442
Totals	**100.0%**	**3,948,995**		**2,933,812**		**954,043**		**1,800,413**

NOTE:

[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009," February, 2011

SOURCE: As noted, with Land Economics Consultants analysis 2012

Table 9-156 summarizes total spending derived from this level of visitation produced by analysis of the full pattern of spending within the MGM2 model. While holding constant the factors observed in the 2009 visitor survey produces a reliable estimate of total spending for this level of visitation, there would likely be some shift out of the category Camp-Out (campsites outside the park) and into Camp-In (campsites inside the park) due to the proposed 37% increase in park camping opportunities. Campers have relatively similar spending patterns, however, whether inside or outside the park. Alternative 5 proposes to retain many of the commercial recreational services including swimming pools, bike rentals, rafting and the like, although many of these would be relocated out of the river corridor and/or be serviced using mobile platforms. By retaining recreational services, Alternative 5 would likely support the most similar spending patterns to what was observed in the 2009 visitor survey, which was taken when these services were in their existing locations.

TABLE 9-156: ALTERNATIVE 5 — VISITOR GROUPS AND TOTAL SPENDING BY MARKET SEGMENT

Market Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $000s	Percent of Spending
Local-Day User	65,273	$74.64	$4,872	1%
Non-Local-Day User	287,200	$86.71	$24,902	7%
Motel-In	283,097	$371.17	$105,078	28%
Camp-In	230,864	$170.02	$39,252	10%
Motel-Out	601,716	$312.95	$188,309	49%
Camp-Out	67,822	$130.81	$8,871	2%
Other Overnight	264,442	$37.54	$9,927	3%
Totals	**1,800,413**	**$211.74**	**$381,213**	**100%**
SOURCE: MGM2 model built for Merced River Analysis, Land Economics Consultants 2012				

The MGM2 model also estimates total economic activity in terms of job creation, income to workers, and value added to the four-county regional economy, as presented in Table 9-157. Table 9-158 calculates the economic impacts of NPS spending.

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

The difference in jobs supported under Alternative 5 and Alternative 1 is presented in Table 9-159, with a detailed breakout by industrial sector within the four-county regional economy. Alternative 5 would be essentially the same as Alternative 1 in terms of jobs; it would support the equivalent of three fewer jobs than Alternative 1.

The long-term, regional, adverse impacts of Alternative 5 would be negligible. In the context of total employment within the four-county region, the support for jobs resulting from Alternative 5 would be almost the same as from Alternative 1 (see Table 9-160). In the context of specific industry sectors within the four-county region, the long-term economic impacts would be slightly adverse but would also be negligible.

TABLE 9-157: ALTERNATIVE 5 — TOTAL ECONOMIC ACTIVITY DUE TO VISITOR SPENDING

Sector/Spending Category	Sales $000s	Jobs	Labor Income $000s	Value Added $000s
Direct Effects				
Motel, hotel cabin, transient rental, or B&B	$148,096	1,408	$39,212	$84,076
Camping fees	$11,161	145	$3,506	$5,063
Restaurants & bars	$63,346	1,097	$21,274	$34,575
Admissions & fees	$39,527	704	$10,611	$23,657
Local transportation	$23,530	495	$11,859	$18,009
Grocery stores	$6,851	103	$3,439	$5,001
Gas stations	$8,625	47	$4,321	$6,416
Other retail	$14,898	261	$6,872	$11,200
Wholesale trade	$1,509	10	$529	$1,122
Local Production of goods	$189	1	$27	$75
Total Direct Effects	**$317,733**	**4,272**	**$101,650**	**$189,193**
Indirect and Induced Effects	$125,652	1,082	$36,296	$76,400
Total Effects	**$443,385**	**5,354**	**$137,946**	**$265,593**
Multiplier	1.40	1.25	1.36	1.40

NOTE: Current economic impacts are measured in 2010 dollars.

SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics MISSING Consultants 2012

TABLE 9-158: ALTERNATIVE 5 — ECONOMIC IMPACTS OF NATIONAL PARK SERVICE SPENDING

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs[b]	892	1.33	294	1,186
Labor Income				
NPS Payroll[b]				
Salaries $000s	$39,273			
Benefits $000s	$10,120			
Total Compensation	$49,393	1.15	$7,641	$57,034
Value Added				
Total Compensation	$49,393	1.29	$14,152	$63,545

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.

[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants analysis 2012

TABLE 9-159: ALTERNATIVE 5 — IMPACT ON JOBS BY INDUSTRY SECTOR

Sector/Spending Category	Jobs Under Alt. 1 (No Action)	Jobs Under Alt. 5	Difference in Jobs
Direct Effects			
Motel, hotel, cabin, or B&B	1,409	1,408	(1)
Camping fees	145	145	(0)
Restaurants & bars	1,098	1,097	(1)
Admissions & fees	705	705	(0)
Local transportation	495	495	(0)
Grocery stores	103	103	(0)
Gas stations	47	47	(0)
Other retail	261	261	(0)
Wholesale trade	10	10	(0)
Local Production of goods	1	1	(0)
Total Direct Effects	**4,274**	**4,272**	**(2)**
Indirect and Induced Effects	1,083	1,082	(1)
Total Effects of Visitor Spending	**5,357**	**5,354**	**(3)**
National Park Service Total Employment Effects	**1,186**	**1,186**	**(0)**
Total Job Creation in Four Counties	**6,543**	**6,540**	**(3)**
SOURCE: MGM2 model, Land Economics Consultants 2012			

TABLE 9-160: ALTERNATIVE 5 — CHARACTERIZATION OF IMPACT SIGNIFICANCE

Industry Sector	Total Jobs in the 4-County Region	Alt. 5: Net Impact on Jobs	Impact as % of Total	Characterization of Impact Significance	
Total Impacts (including Indirect & Induced Effects)	**102,273**	**(3)**	**-0.0%**	Negligible	Adverse
Direct Impacts on Specific Sectors[a]					
Agriculture	13,619	0	0.0%	No Impact	
Mining	310	0	0.0%	No Impact	
Construction	5,115	0	0.0%	No Impact	
Manufacturing	4,043	0	0.0%	No Impact	
Transportation (and Public Utilities)	2,074	(0)	0.0%	No Impact	
Retail Stores (and Wholesale Trade)	10,314	(0)	0.0%	No Impact	
Lodging Industry	3,637	(1)	0.0%	Negligible	Adverse
Restaurants and Bars	5,887	(1)	0.0%	Negligible	Adverse
All Other Service Industries	36,446	(0)	0.0%	No Impact	
Government (Local, State, & Fed.)	20,828	(0)	0.0%	No Impact	

NOTE:

[a] Indirect and induced effects would be spread throughout all sectors of the economy and would have a negligible impact.

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants 2012

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

Past Actions

Past actions would affect the cumulative scenario under Alternative 5 to the same degree they affect Alternative 1 for socioeconomic impacts.

Present Actions

Present actions would affect the cumulative scenario under Alternative 5 to the same degree they affect Alternative 1 for socioeconomic impacts.

Reasonably Foreseeable Future Actions

For socioeconomic impacts, the cumulatively considerable factors would be the same as those described above for alternative 1. These will include the effects of private decisions made in the gateway communities and elsewhere in the four-county region, as well as those of public decisions in the region and within the park. Over the long run, one of the most functional features of market economies is that they trend toward self-correction. If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may build to the point that private interests may expand supply in surrounding areas by developing additional lodging, restaurants, and other facilities. Short of new construction, additional demand may be satisfied by increasing hours and seasons of operations, adding additional staff, and other business operating responses to expand capacities in gateway communities. In the short run, management policies within the park can alter the flow of visitors and shift the mix of overnight and day visitors, but in the long run market adaptations can continue to increase the annual volumes of people visiting the park. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 5, would be regional, long term, negligible, and adverse.

Irreversible and Irretrievable Commitment of Resources for Alternative 5

For the most part, socioeconomic actions are reversible in the sense that markets adapt to changing circumstances and public policies can change strategies over time. On the other hand, the implementation of Alternative 5 would require the one-time expenditure of approximately $183 million. Once expended, those financial resources would no longer be available for other possible uses, and relatively permanent changes to facilities and infrastructure in the park would have been made. Physical changes made for Alternative 5 may be reversed in the future, but additional financial resources would be required to do so.

Relationship of Short-Term Uses and Long-Term Productivity for Alternative 5

Construction and restoration projects to implement Alternative 5 would create short-term disruptions during construction, but would produce desired changes to the park over the long term. There would also be a short-term, one-time change to the business model for the concessioner in the park, with a new concession agreement put in place to be consistent with the objectives and scale of facilities produced under Alternative 5. In the long term, a new pattern of economic flows in the region would be likely to emerge that supplies visitor services to meet the new level of visitor demand.

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

All River Segments

Impacts of Actions to Manage Visitor Use and Facilities

Compared with Alternative 1 (No Action), Alternative 6 would create the largest increase in the number of lodging units in the park, growing by approximately 21%. The camping unit inventory in Yosemite Valley would grow even more proportionately, by approximately 59%. Peak day-use infrastructure in the Valley, as measured by the number of day use parking spaces available, would increase by approximately 11%. As a result of these actions, the total annual visitor handling facilities and infrastructure of Alternative 6 would be larger than today. This would allow growth to continue at an assumed 3% average rate for another two years before the daily maximum number of visitors would start to be reached on peak days as was described in the methodology section. At that point the annual visitor volume would be approximately 4.19 million.
Table 9-161 applies results of the VSP survey findings to translate that total annual visitation estimate into visitor groups by market segment, which is necessary for input to the economic models.

TABLE 9-161: ALTERNATIVE 6 — ANALYSIS OF TOTAL VISITATION BY MARKET SEGMENT

Visitor Market Segment	Visitor Market Segment Share of Park Entries[a]	Calculated Distribution of Visitors	Re-Entry Rate[a]	Visitor Trips to the Park	Ave. Group Size[a]	Visitor Groups	Length of Stay (Nights or Days)[a]	Visits in Party-Days / Nights
Total Visitors: Alt. 6		**4,190,917**						
Local-Day User	4.0%	167,637	1.1	152,397	2.2	69,271	1.0	69,271
Non-Local-Day User	24.0%	1,005,820	1.1	914,382	3.0	304,794	1.0	304,794
Motel-In	11.5%	481,955	1.1	438,141	3.5	125,183	2.4	300,440
Camp-In	9.5%	398,137	1.3	306,259	3.5	87,503	2.8	245,007
Motel-Out	36.5%	1,529,685	1.7	899,814	3.1	290,263	2.2	638,578
Camp-Out	4.0%	167,637	1.9	88,230	3.8	23,218	3.1	71,977
Other Overnight	10.5%	440,046	1.4	314,319	2.8	112,257	2.5	280,642
Totals	**100.0%**	**4,190,917**		**3,113,543**		**1,012,489**		**1,910,709**

NOTE:
[a] Findings from the 2009 Visitor Services Project survey results as reported in Cook, Philip S., *Impacts of Visitor Spending on the Local Economy: Yosemite National Park, 2009,* February, 2011

SOURCE: As noted, with Land Economics Consultants 2012

Table 9-162 summarizes total spending derived from the level of visitation produced by analysis of the full pattern of spending within the MGM2 model. While holding constant the factors observed in the 2009 visitor survey produces a reliable estimate of total spending for this level of visitation, there would likely be some shift into the category Motel-In (lodging units inside the park) from Motel-Out (lodging outside the park) due to the proposed 21% increase in units in Alternative 6. There would also likely be a shift into more people in the Camp-In category due to the 59% increase in park camping opportunities. These lodging categories have relatively similar spending patterns, however, whether inside or outside the park. Also, Alternative 6 proposes to retain some commercial recreational services including swimming pools, bike rentals, rafting and the like,

TABLE 9-162: ALTERNATIVE 6 — VISITOR GROUPS AND TOTAL SPENDING BY MARKET SEGMENT

Market Segment	Visits in Party-Days/Nights	Average Spending ($)	Total Spending in 2010 $000s	Percent of Spending
Local-Day User	69,271	$74.64	$5,170	1%
Non-Local-Day User	304,794	$86.71	$26,428	7%
Motel-In	300,440	$371.17	$111,516	28%
Camp-In	245,007	$170.02	$41,657	10%
Motel-Out	638,578	$312.95	$199,845	49%
Camp-Out	71,977	$130.81	$9,415	2%
Other Overnight	280,642	$37.54	$10,536	3%
Totals	**1,910,709**	**$211.74**	**$404,567**	**100%**

SOURCE: MGM2 model built for Merced River Analysis, Land Economics Consultants 2012

although many of these would be relocated out of the river corridor and/or be serviced using mobile platforms. By retaining recreational services, Alternative 6 would likely support the most similar spending patterns to what was observed in the 2009 visitor survey, which was taken when these services were in their existing locations.

The MGM2 model also estimates total economic activity in terms of job creation, income to workers, and value added to the four-county regional economy, as presented in Table 9-163. Table 9-164 calculates the economic impacts of NPS spending.

TABLE 9-163: ALTERNATIVE 6 — TOTAL ECONOMIC ACTIVITY DUE TO VISITOR SPENDING

Sector/Spending Category	Sales $000s	Jobs	Labor Income $000s	Value Added $000s
Direct Effects				
Motel, hotel, cabin, or B&B	$157,169	1,494	$41,615	$89,227
Camping fees	$11,845	154	$3,721	$5,373
Restaurants & bars	$67,227	1,164	$22,577	$36,693
Admissions & fees	$41,949	748	$11,261	$25,106
Local transportation	$24,972	525	$12,586	$19,112
Grocery stores	$7,270	109	$3,649	$5,308
Gas stations	$9,154	50	$4,585	$6,809
Other retail	$15,810	277	$7,293	$11,886
Wholesale trade	$1,602	11	$562	$1,191
Local Production of goods	$200	1	$29	$80
Total Direct Effects	**$337,198**	**4,533**	**$107,878**	**$200,783**
Indirect and Induced Effects	$133,350	1,148	$38,519	$81,081
Total Effects	**$470,548**	**5,682**	**$146,396**	**$281,864**
Multiplier	1.40	1.25	1.36	1.40

NOTE: Current economic impacts are measured in 2010 dollars.

SOURCE: MGM2 model built for Merced River Alternatives Analysis, Land Economics Consultants 2012

TABLE 9-164: ALTERNATIVE 6 — ECONOMIC IMPACTS OF NATIONAL PARK SERVICE SPENDING

Yosemite National Park	Direct Effects	Economic Multipliers[a]	Indirect and Induced Effects	Total of Direct, Indirect and Induced Effects
Employment				
National Park Service Jobs[b]	916	1.33	302	1,218
Labor Income				
NPS Payroll[b]				
Salaries $000s	$40,331			
Benefits $000s	$10,393			
Total Compensation	$50,724	1.15	$7,847	$58,571
Value Added				
Total Compensation	$50,724	1.29	$14,533	$65,257

NOTE: Current economic impacts are measured in 2010 dollars.

[a] Multipliers are from IMPLAN sector 439, federal government/nonmilitary employment and payroll.
[b] As reported in Stynes, D.J., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010,* Natural Resource Report NPS/NRSS/EQD/NRR--2011/481.

SOURCES: As noted; Land Economics Consultants 2012

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

The difference in jobs supported under Alternative 6 and Alternative 1 is presented in Table 9-165, with a detailed breakout by industrial sector within the four-county regional economy. Alternative 6 would support approximately 356 more jobs than Alternative 1.

TABLE 9-165: ALTERNATIVE 6 — IMPACT ON JOBS BY INDUSTRY SECTOR

Sector/Spending Category	Jobs Under Alt. 1	Jobs Under Alt. 6	Difference in Jobs
Direct Effects			
Motel, hotel cabin, transient rental, or B&B	1,409	1,494	85
Camping fees	145	154	9
Restaurants & bars	1,098	1,164	67
Admissions & fees	705	748	43
Local transportation	495	525	30
Grocery stores	103	109	6
Gas stations	47	50	3
Other retail	261	277	16
Wholesale trade	10	11	1
Local Production of goods	1	1	0
Total Direct Effects	**4,274**	**4,533**	**259**
Indirect and Induced Effects	1,083	1,148	66
Total Effects of Visitor Spending	**5,357**	**5,682**	**325**
National Park Service Total Employment Effects	**1,186**	**1,218**	**32**
Total Job Creation in Four Counties	**6,543**	**6,899**	**356**

SOURCE: MGM2 model, Land Economics Consultants 2012

The long-term, regional socioeconomic impacts of Alternative 6 would be beneficial, but they would also be negligible. In the context of total employment within the four-county region, the support for jobs resulting from Alternative 6 would be approximately 0.3% larger than Alternative 1 and well within the 0-2.5% categorization for negligible (see Table 9-166). For specific industry sectors within the four-county region, the beneficial socioeconomic impacts would also be negligible, except in the lodging industry sector where the long-term, regional, beneficial impacts would be minor in intensity.

TABLE 9-166: ALTERNATIVE 6 — CHARACTERIZATION OF IMPACT SIGNIFICANCE

Industry Sector	Total Jobs in the 4-County Region	Alt. 6: Net Impact on Jobs	Impact as % of Total	Characterization of Impact Significance	
Total Impacts (including Indirect & Induced Effects)	**102,273**	**356**	**0.3%**	Negligible	Beneficial
Direct Impacts on Specific Sectors[a]					
Agriculture	13,619	0	0.0%	No Impact	
Mining	310	0	0.0%	No Impact	
Construction	5,115	0	0.0%	No Impact	
Manufacturing	4,043	0	0.0%	No Impact	
Transportation (and Public Utilities)	2,074	30	1.4%	Negligible	Beneficial
Retail Stores (and Wholesale Trade)	10,314	26	0.2%	Negligible	Beneficial
Lodging Industry	3,637	94	2.6%	Minor	Beneficial
Restaurants and Bars	5,887	67	1.1%	Negligible	Beneficial
All Other Service Industries	36,446	43	0.1%	Negligible	Beneficial
Government (Local, State, & Fed.)	20,828	32	0.2%	Negligible	Beneficial

NOTE:

[a] Indirect and induced effects would be spread throughout all sectors of the economy and would have a negligible impact.

SOURCE: Minnesota IMPLAN Group, Inc. data; Land Economics Consultants 2012

As was discussed under the other action alternatives, Mariposa County, and the gateway community of Mariposa within it, are likely to be the most noticeably impacted geographic areas because they combine both dependency on tourism industry spending and proximity to the park. There is also a fiscal connection in that the concessioner lodging in Yosemite Valley lies within Mariposa County, which receives the transient occupancy tax revenue collected there. Mariposa is further impacted because it is the closest place for park and concessioner employees to live who do not have housing within the park. Changes in the park workforce living in Mariposa County could cause increases or decreases in demand for county services and affect county revenues. Changes in park workforce could also change school enrollment, affecting both costs and revenues for local schools.

The maximum fiscal impact of Alternative 6 on Mariposa County could include an additional $560,000 in TOT revenue after two additional years of growth in visitation to the park, and based on the 10% tax rate and the difference in spending between Alternatives 1 and 6 for all types of lodging, both inside and outside the park. This would be equivalent to a 1.3% increase in General Fund revenue for the county.

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

Past Actions

Past actions would affect the cumulative scenario under Alternative 6 to the same degree they affect Alternative 1 for socioeconomic impacts.

Present Actions

Present actions would affect the cumulative scenario under Alternative 6 to the same degree they affect Alternative 1 for socioeconomic impacts.

Reasonably Foreseeable Future Actions

For socioeconomic impacts, the cumulatively considerable factors would be the same as those described above for Alternative 1. These will include the effects of private decisions made in the gateway communities and elsewhere in the four-county region, as well as those of public decisions within the park. Over the long run, one of the most functional features of market economies is that they trend toward self-correction. If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may build to the point that private interests may expand supply in surrounding areas by developing additional lodging, restaurants, and other facilities. Short of new construction, additional demand may be satisfied by increasing hours and seasons of operations, adding additional staff, and other business operating responses to expand capacities in gateway communities. In the short run, management policies within the park can alter the flow of visitors and shift the mix of overnight and day visitors, but in the long run market adaptations can continue to increase the annual volumes of people visiting the park. Based on these considerations, the cumulative economic impact of past, present, and reasonably foreseeable future actions, when combined with those of Alternative 6, would be regional, long term, negligible, and beneficial.

Irreversible and Irretrievable Commitment of Resources for Alternative 6

For the most part, socioeconomic actions are reversible in the sense that markets adapt to changing circumstances and public policies can change strategies over time. On the other hand, the implementation of Alternative 6 would require the one-time expenditure of approximately $259 million. Once expended those financial resources would no longer be available for other possible uses, and relatively permanent changes to facilities and infrastructure in the park would have been made. Physical changes made for Alternative 6 may be reversed in the future, but additional financial resources would be required to do so.

Relationship of Short-Term Uses and Long-Term Productivity for Alternative 6

Construction and restoration projects to implement Alternative 6 would create short-term disruptions during construction, but would produce desired changes to the park over the long term. There would also be a short-term, one-time change to the business model for the concessioner in the park, with a new concession agreement put in place to be consistent with the objectives and scale of facilities produced by Alternative 6. In the long term, a new pattern of economic flows in the region is likely to emerge that supplies visitor services to meet the new level of visitor demand.

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ANALYSIS TOPICS: HISTORIC PROPERTIES

Historic Buildings, Structures, and Cultural Landscapes

Comprehensive investigations of historic sites, structures, and cultural landscape resources have been completed for Yosemite Valley and El Portal. For other areas, information is taken from overview documents (e.g., Greene 1987) and specific inventories (e.g., the Wilderness Historic Resource Surveys). The types of resources potentially affected by the Merced River Plan include districts, buildings, structures, and landscapes listed in the National Register of Historic Places (NRHP, or National Register) or designated as National Historic Landmarks. These resource types are described below.

- **Districts.** A district is a geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history (36 CFR 60.3).
- **Buildings.** A building is a structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure. Building may refer to a historically related complex such as a courthouse and jail or a house and barn (36 CFR 60.3).
- **Structures.** A structure is a work made up of interdependent and interrelated parts in a definite pattern of organization. Constructed by man, it is often an engineering project large in scale (examples are historic trails, bridges, road systems, etc.) (36 CFR 60.3).
- **Cultural Landscapes.** Cultural landscapes are a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Cultural landscapes are the result of the long interaction between people and the land, and the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historical land use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past, a visual chronicle of its history. The dynamic nature of modern human life contributes to the continual reshaping of cultural landscapes, making them a good source of information about specific times and places but at the same time rendering their long-term preservation a challenge (NPS *Management Policies 2006*).

National Historic Landmarks. National Historic Landmarks (NHL) are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. Designation as an NHL affords a property additional protection as the federal government is tasked with avoiding or minimizing any potential adverse impacts to the landmark, and monitoring the condition of the property (36 CFR 65).

National Register of Historic Places Eligibility Criteria. The criteria of the NRHP provide the basis under which a structure, site, building, district, or object can be considered significant for listing on the National Register. A possible resource needs to meet only one of the four criteria to achieve significance. The criteria include resources that (36 CFR 60.4):

(A) are associated with events that have made a significant contribution to the broad patterns of history; or

(B) are associated with the lives of persons significant in our past; or

(C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(D) have yielded or may likely yield information important in prehistory or history.

Affected Environment

Regulations and Policies

Section 106 of National Historic Preservation Act 1966 (as amended). Section 106 of the National Historic Preservation Act of 1966 (NHPA) (16 USC 470) directs federal agencies to take into account the effects of any undertaking on properties listed in or eligible for listing in the NRHP. The Advisory Council on Historic Preservation (ACHP) has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties.

2008 Programmatic Agreement. The servicewide 2008 programmatic agreement provides coordination between the NPS, ACHP, and National Conference of SHPOs for the section 106 compliance process. The NHPA, 36 CFR 800, and the 2008 programmatic agreement provide the NPS with a roadmap to plan for and carry out undertakings to minimize harm to cultural resources.

Plan-specific Programmatic Agreement. As a part of the Final Merced River Plan/EIS, the NPS through consultation efforts has worked with the SHPO, ACHP, traditionally-associated American Indian tribes and groups, and other consulting parties, to developed a plan-specific programmatic agreement (Appendix I) regarding treatment of historic resources in accordance with 36 CFR 800. The programmatic agreement will guide the process for future consultation efforts and is based on the assessment of impacts for the individual actions proposed in the final preferred alternative found in Appendix J.

Secretary of the Interior's Standards for the Treatment of Historic Properties. The Secretary of the Interior's Standards for Treatment of Historic Properties (Standards for Treatment of Historic Properties) are prepared under the authority of NHPA Sections 101(f) (g), and (h), and NHPA Section 110 and are intended to promote responsible preservation practices that help protect irreplaceable cultural resources. The Standards for Treatment of Historic Properties are not intended to make decisions about which features of a historic building should be saved and those features that may be changed; rather, when a treatment is selected, they provide guidance for consistency in the proposed work.

The four treatment approaches are preservation, rehabilitation, restoration, and reconstruction. Preservation places a high premium on the retention of all historic fabric through conservation, maintenance, and repair. Rehabilitation emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is intended to provide a compatible use for a property (when the use for which it was originally built is no longer practical or feasible) through repair, alterations or additions. Restoration focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods. Reconstruction establishes limited opportunities to re-create a nonsurviving site, landscape, building, structure, or object in all new materials (Weeks 2001).

NPS Management Polices 2006. The NPS *Management Policies 2006* also provide direction regarding the management and preservation of historic properties. In accordance with these policies, the NPS is committed to protecting cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources. The NPS *Management Policies 2006* also provide guidance on procedures for protection and maintenance of historic properties under lease, among other instruction.

Director's Order 28-Cultural Resources Management Guideline (1998). Director's Order-28 guides the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship

and in accordance with the policies and principles contained in the NPS *Management Policies*. It also ensures that the NPS comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. Additionally, the NPS would comply with the 2008 programmatic agreement with the ACHP on Historic Preservation and the National Conference of SHPOs.

Yosemite National Park General Management Plan (1980). The *Yosemite General Management Plan* calls for a reduction in traffic congestion, demolition of nonessential buildings and facilities, restoration of large areas of the Valley to their natural conditions, and relocation of visitor and employee accommodations away from environmentally sensitive or dangerous areas.

Cultural Resources Management Plan (1979). The *Cultural Resources Management Plan* completed for the *Yosemite General Management Plan* was designed to protect the significant cultural resources of the park through compliance with all cultural resource legislative, executive, and regulatory requirements. The CRMP provides specific policies to guide cultural resources management at Yosemite, including consultation, survey and evaluation, preservation/restoration/reuse, and documentation.

Concession Services Plan (1992). The Concession Services Plan, which is a 1992 amendment to the *Yosemite General Management Plan*, guides the management of concession enterprises, such as lodging, food, retail, and other commercial services in Yosemite. This plan serves as the basis for contracts between the NPS and the park's primary concessioner.

Scope of the Analysis

Historical Context

Arguably, the earliest record of non-indigenous presence in Yosemite was Joseph Rutherford Walker's 1833 exploratory party that crossed the Sierra Nevada from east to west, along the divide between the Tuolumne River and Merced River drainages. Walker's party may have been the first non-Indians to see Yosemite Valley. Prior to the 1850s, the U. S. military, which had increased its presence in the Central Valley, responded to raids by local American Indian tribes and conducted the 1851 relocation of the Ahwahneechees, led by Chief Tenaya, to the Fresno River Reservation (Greene 1987). The California Gold Rush, the single largest migration in human history, had profound impacts on the land, people and resources in the Sierra Nevada foothills. This event triggered massive disruption of native cultures and lifeways, brought thousands of people to the lands immediately surrounding Yosemite, and inspired the violent conflicts that lead to these military campaigns. In response to the increased military presence, some American Indians relocated, though many, including Chief Tenaya, left the camp.

During the 1850s and 1860s, tourism drove numbers of visitors to Yosemite Valley. Magazines depicting the scenery of the Valley drew the attention of the nation, and in 1855 James M. Hutchings organized the first tourist excursion to the Valley. Within two years of this trip, entrepreneurs constructed hotels to capitalize on what would become a thriving tourist trade. The community of Wawona, for example, was founded near the site of the log cabin built by Galen Clark in 1857. Clark, originally from New Hampshire, had moved to California during the Gold Rush, and moved to the Valley in 1856 as a homesteader. Clark established a 160-acre homestead and 12-foot-by-16-foot cabin, which was called "Clark's Station" or "Clark's Crossing" (Greene 1987).

Homestead claims were filed, orchards were planted, and Yosemite Valley became a residential base for many families during the 1850s and 1860s. Hutchings became a permanent resident of the Valley in 1864

and constructed several structures, including a sawmill on Yosemite Creek. By 1870, the establishment of visitor hotels in the Valley had created a need for local fresh produce and livestock. James Lamon, the Valley's first non-indigenous homesteader, became one of the largest producers of commercial agricultural products in the Valley (Greene 1987).

In 1864, President Abraham Lincoln and the U.S. Congress set aside the Big Tree Grove (Mariposa Grove) and Yosemite Valley as a public park to preserve the monumental scenic qualities of the area. The act clearly stated that the Valley and Mariposa Grove were to be managed by the governor of California and his eight appointed commissioners, with Frederick Law Olmsted appointed as chairman by the governor and elected by the commission (Greene 1987).

Due to the early conservation movement led by people such as John Muir and Robert Underwood Johnson, Congress passed an act establishing Yosemite National Park in 1890. This act brought protection to the lands and resources within the watersheds of the Tuolumne River and Merced River systems. The park was managed by U.S. Cavalry troops sent from the Presidio in San Francisco. Yosemite was the responsibility of the Department of the Interior (DOI), and army units answered to both DOI and Army. By 1906, the State of California had relinquished their rights of control over the Yosemite Valley and Mariposa Grove grant lands, ceding them to the U.S. government (Greene 1987).

Between 1906 and 1914, Yosemite Valley and the Mariposa Grove were administered by the U.S. Army, which established camp at the site of an American Indian village. Major H.C. Benson, acting superintendent from 1905 until 1908 under the Department of the Army, stated in his 1907 annual report that, "[s]ome definite general plan should be devised for the beautifying of the valley and making it the most beautiful park in the world. All bridges and buildings constructed in the future should conform to a definite plan, suited to existing conditions. All roads should be laid out according to a plan fully worked out by a competent landscape gardener, nothing should be done in the way of expending money which does not tend to carry out these ideas. All small buildings, practically shacks, should be replaced by stone buildings, and all bridges, when replaced, should be either of stone or concrete." Many bridges and roads were, in fact, built by the U.S. Army Corps of Engineers between 1905 and 1915 (Carr 1998). Bridges such as the Bridalveil Falls bridges in 1913 set the precedent for later Rustic design for bridges established in the Yosemite Bridge Historic District.

In 1916 Congress created the National Park Service with a mandate to conserve the scenery and the natural and historic objects and provide opportunities for the enjoyment of future generations. The advent of automobile culture in the late 1910s and early 1920s changed the management plan for the park. As early as 1919, nearly 75% of visitors to Yosemite entered as auto tourists in their own cars. The demographic shift indicated that the era of the national park as a minimally funded, semiprivate resort had seen its day. After the All-Year Highway (Highway 140) to Yosemite opened in 1926, the annual number of visitors jumped to nearly half a million, up from about 40,000 just 10 years prior. Auto tourists, not reliant on concessioners, were part of a much larger and broader public that required additional facilities at a scale previously absent from the park (NPS 2006d).Rustic-style architecture was a type of design and style of construction used throughout the national parks beginning with the Yosemite Administration Building in 1924, and remains in use through the present. The style expressed the philosophy that buildings should be in harmony with the landscape and in harmony with each other. Oversized stone and logs were used in construction to ensure that the mass of the building appeared to fit within the setting. For example, The Ahwahnee Hotel, which opened in 1927, is a six-story steel-framed building, sheathed in textured concrete and stone veneer to simulate rough wood siding and massive stone piers. The Ahwahnee culminated epitomized the tradition of massive, centralized national

park lodges built by concessioners to cater to wealthy tourists (NPS 2006d). Yosemite Village Historic District contains a collection of rustic architecture dating from the 1918 through the 1930s.

The primary trails originating in the valley are the Mist Trail, Four Mile Trail, Yosemite Falls Trail, Pohono Trail, and the Valley Loop Trail. The Valley Loop Trail dates from the 1920s and was originally built as a bridle trail, generally aligned along existing circulation routes. Thirteen additional miles were added to the Valley Loop Trail in 1928, requiring the construction of 14 bridges. Today, the Valley Loop Trail includes the entire remaining bridle trail system in the valley and it is approximately 21 miles long.

The Great Depression resulted in a decrease of tourists visiting the Valley, but the initiation of Franklin D. Roosevelt's New Deal in the spring of 1933 resulted in an unprecedented era of park development and park system expansion. The Public Works Administration and Civilian Conservation Corps (CCC) were responsible for completing a tremendous amount of work in the 1930s. Their extensive range of projects in the Valley included construction of roads, trails, fire roads, fire buildings, fire lanes, fire trails, comfort stations, campgrounds, and a rock diversion channel at Yosemite Creek (Greene 1987).

Visitation to the Valley further decreased during World War II but increased to unprecedented levels as soon as the war ended. In 1954, over a million park visitors were recorded. However, in 1955, Yosemite experienced the worst flooding ever recorded in the Valley. Facilities that had already been damaged in the floods of 1950 were inundated, along with additional roads, trails, bridges, and other facilities. In 1956, Park Service Director Conrad L. Wirth announced Mission 66 as a large new construction campaign. Intended to improve or replace aging and inadequate national park facilities, Mission 66 was implemented to meet the demand for services created by postwar levels of visitation. This increased funding and visitation, as well as flood damage repair, came together and resulted in substantial changes to Yosemite Valley. Yosemite Mission 66 program projects included the Tioga Road middle segment and the El Portal Administrative area housing. The Yosemite Valley visitor center was completed in 1968. In 1970, much of the Valley's road network was made into a one-way loop. The addition of parking lots along with the new concession and visitor use buildings during the Mission 66 period make the public plaza area of the Village one of the most changed areas since 1942 (NPS 2006d).

Properties Analyzed for this Plan

Historic properties that could potentially be affected by the Merced River Plan include various National Register-listed historic districts, landscapes, individual historic buildings, structures, trails, and other features in each of the river segments that are eligible or possibly eligible for inclusion in the *National Register of Historic Properties*. It should be noted that the majority of post-WWII buildings have not been assessed for eligibility and that prior to demolition or alteration of these resources, and assessments as to their eligibility for listing on the National Register would be completed in order to carry out actions with potential impact to these areas. Tables 9-207 through 9-210 provide detail regarding the historic properties within the APE.

Historic Period Resources

Segment 1: Merced River Above Nevada Falls – Historic Properties. Known historic resources within Segment 1 consist of the eligible Merced Lake High Sierra Camp Historic District and the eligible Merced Lake Ranger Station. Table 9-167 and Figure 9-47 describe these resources.

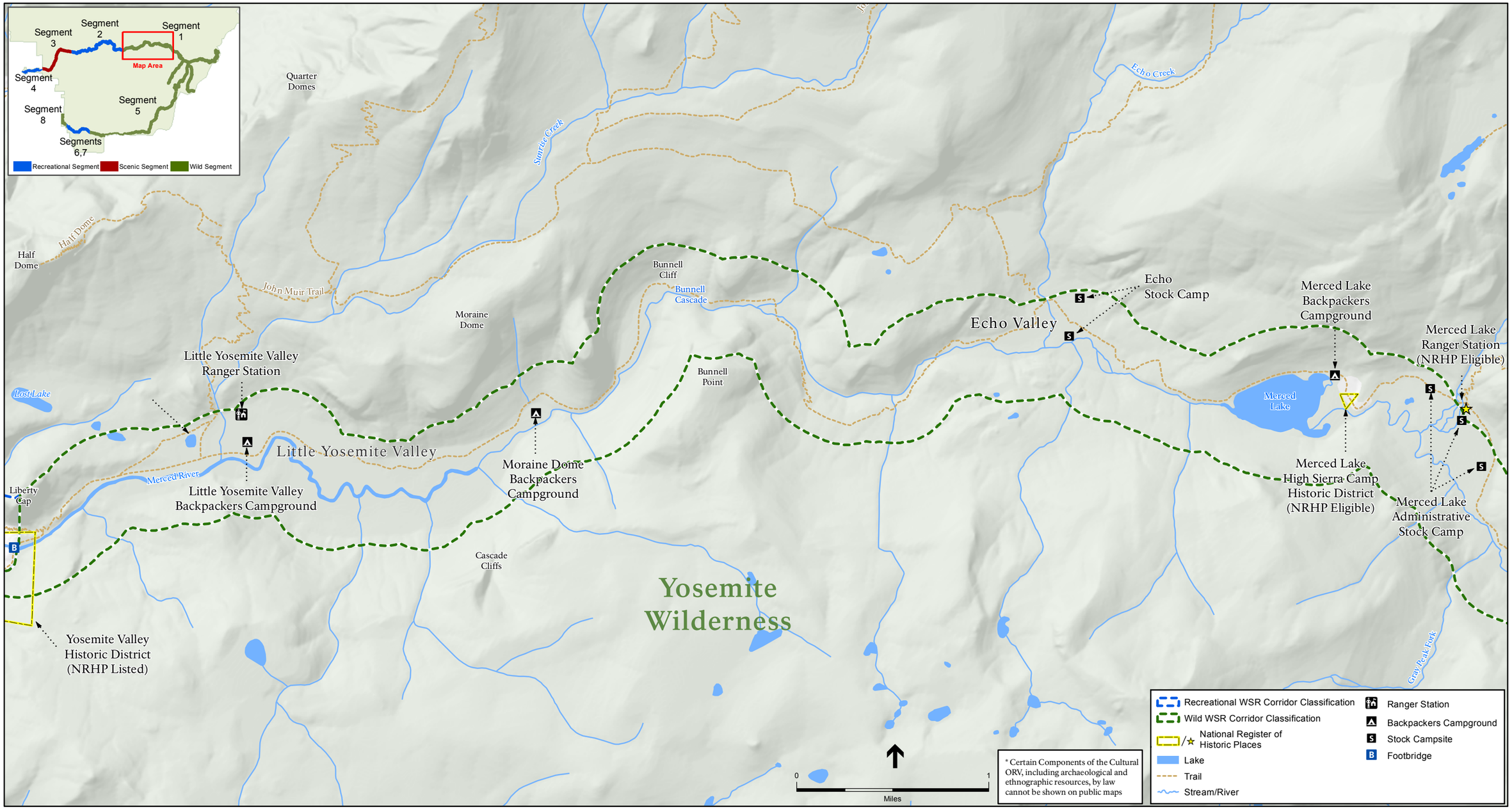
TABLE 9-167: KNOWN HISTORIC PROPERTIES WITHIN SEGMENT 1

National Register Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Merced Lake High Sierra Camp Historic District	District	Eligible 2004	Local	The Merced Lake High Sierra Camp is considered significant in recreation and education as one of seven high country camps whose origin dates back to the earliest days of the NPS. 1916-1938	22 tents for guest and employee housing, 2 tent bathhouses Permanent cookhouse, icehouse and barn
Merced Lake Ranger Station	Building	Eligible 2004	Local	The Merced Lake snow survey shelter/patrol cabin is considered significant in conservation. 1927-1938	building
Abbreviations: N/A = not applicable; NPS = National Park Service: NRHP = National Register of Historic Places SOURCE: NPS 2012h					

Segments 2A and 2B: Yosemite Valley – Historic Properties. Known historic resources within Segments 2A and 2B include four listed historic districts (Camp Curry Historic District, Yosemite Valley Bridges Historic District, Yosemite Valley Historic District, Yosemite Village Historic District), including their associated contributing historic buildings and structures; numerous structures that have been determined to be eligible for listing on the *National Register of Historic Places* (NRHP) as well as those that are individually listed; and three National Historic Landmarks (The Ahwahnee, Rangers' Club, and the LeConte Memorial Lodge). In addition, eight granite-faced, concrete arched, two-lane vehicle bridges were constructed between 1922 and 1933 and are both contributing resources of the Yosemite Valley Historic District and the Yosemite Valley Bridges Historic District. Table 9-168 describes these resources.

Many historic sites and structures within the Valley have been singled out for their significance and are either National Historic Landmarks or are listed in or have been determined eligible for listing in the NRHP. These resources are described in greater detail in Table 9-167 through Table 9-170 and Figure 9-48.

The geophysical characteristics of Yosemite Valley have shaped patterns of human use since the earliest days of American Indian settlement. As a result, the Valley's cultural landscape is significant for its role in the exploration and settlement of the west, as well as for its architecture, art, landscape architecture, recreation, and conservation. The historical importance of the Valley landscape derives from the fact that countless generations of local tribal groups and, later, millions of park visitors have infused the Valley's natural features with great cultural significance.



SOURCE: NPS, 1997, 2011

Merced River Comprehensive Management Plan / EIS . 210436

Figure 9-47

Segment 1 - Little Yosemite Valley and Merced Lake High Sierra Camp Historic Properties

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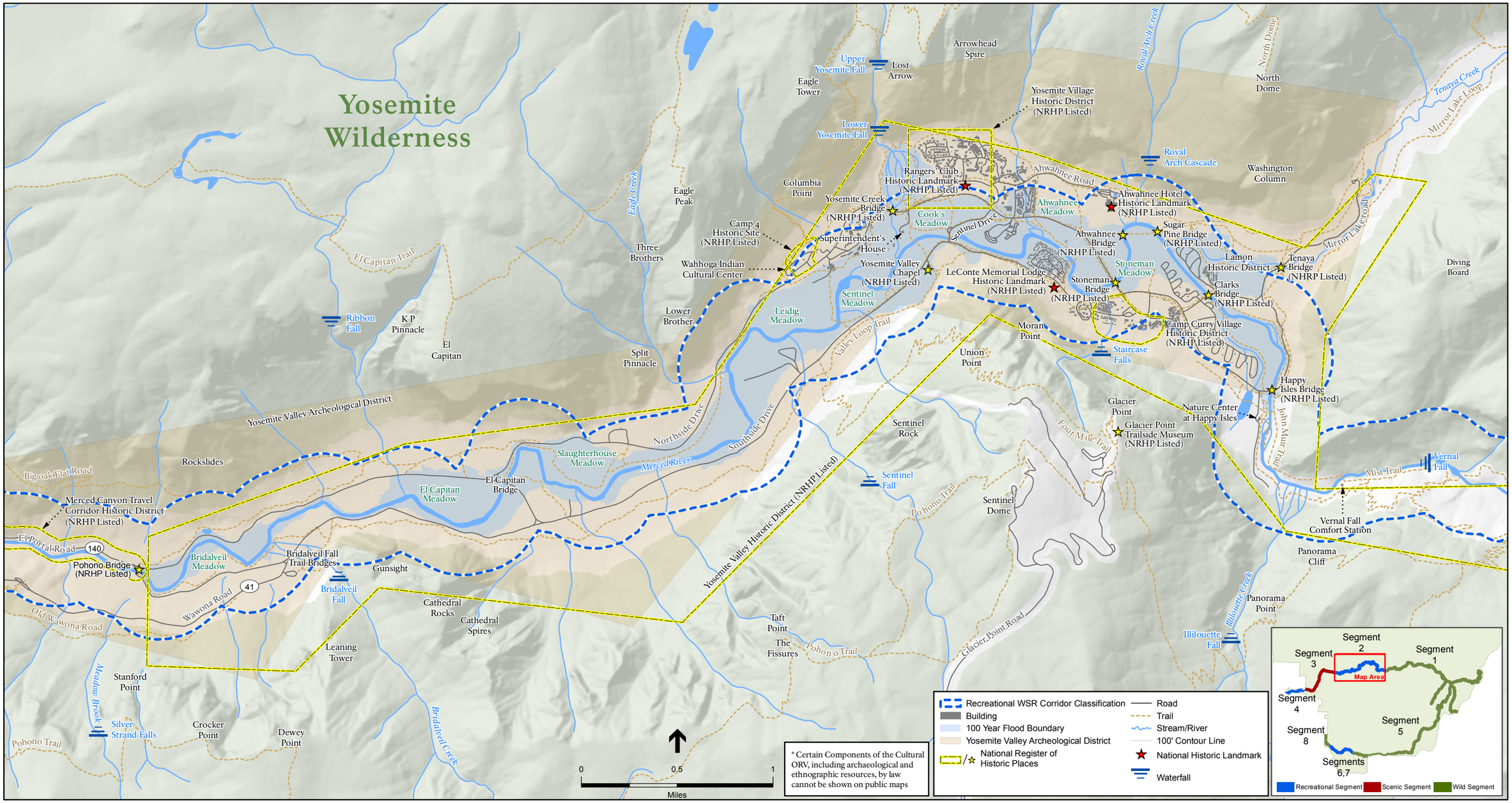

SOURCE: NPS, 1997, 2011

Figure 9-48
Segment 2 - Yosemite Valley
Historic Properties

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TABLE 9-168: KNOWN HISTORIC PROPERTIES WITHIN SEGMENT 2

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
The Ahwahnee Hotel (National Register listing)	Building	Listed 1977	National, Regional	The Ahwahnee, because of its monumental rustic architectural design (Gilbert Stanley Underwood) and unaltered condition, is among the most significant park hotels in the United States. The significance of the hotel lies in the preservation of the exterior of the building and its setting, and in the preservation of the interior, with its original decorative features and furnishings. (Also Contributes to the Yosemite Valley Historic District)	The 35-acre site, which includes a number of small structures and landscape features, eight guest cottages, an employee dormitory, two tennis courts, a pond, and two parking lots.
The Ahwahnee Hotel NHL	Buildings	Listed 1987	National	Plan, Exterior Materials, Masonry, Massing, Roof, Balconies and terraces at several levels, Guest Rooms, Dining Room, Utility Spaces, Porte Cochere, Lobby, Elevator Lobby, Great Lounge, California Room (Winter Club Room), Writing Room (Mural Room), Solarium, Meadow directly south of hotel, Stone Gatehouse, Parking Lots, Walkways (Also contributes to the Yosemite Valley Historic District)	Hotel Building, interior furnishings, decorations, ironwork, and fixtures Meadow South of Hotel Stone gatehouse, parking lots, pond, walkways
Camp 4 (Sunnyside Campground) (2003000056)	Site	Listed 2003	National	Camp 4 has integrity and is listed in the NRHP for its significant association with the growth and development of rock climbing in the Yosemite Valley after World War II. (Also Contributes to the Yosemite Valley Historic District)	Entire area, including natural features (boulders, cliffs, vegetation), is considered a contributing resource.
Camp Curry Historic District	District	Listed 1979	Local	This historic district is illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation still available in Yosemite. (Also Contributes to the Yosemite Valley Historic District)	Original Registration Office/Post Office (Lounge) Entrance Sign Foster Curry Cabin (Tressider Residence) Mother Curry Bungalow 48 Bungalows with Bath ~400 Canvas Tent Cabins 23 Cabins without Bath Stoneman House Bathhouses and toilet facilities Ice skating rink and snack bar/warming room 2 employee housing sections
Glacier Point Road Historic District	District	Eligible	Local	Glacier Point Road exemplifies the naturalistic landscape design aesthetic of the NPS in the 1930s and represents the initial burst of development of automobile roads in the national parks.	Includes 140 contributing features.
Glacier Point Trailside Museum	Building	Listed 1975	Local	This museum, the first permanent teaching instrument of its kind in the NPS, is an integral component of the old Yosemite Museum.	Building

TABLE 9-168: KNOWN HISTORIC PROPERTIES WITHIN SEGMENT 2

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
LeConte Memorial Lodge NHL	Structure	Listed 1987	Regional	Originally constructed in 1903, and moved and rebuilt in 1919, the lodge was the principal foothold of the influential Sierra Club in the Sierra Nevada Mountains. It is a transitional building in 20th century architecture, with strong European roots in its Tudor Revival design, combined with an interesting use of building materials found in the work of architects of the Bay Area tradition. An outstanding example of the theory that the materials and site should determine the design of the building. (Also Contributes to the Yosemite Valley Historic District)	Building
LeConte Memorial Lodge (individual listing)	Structure	Listed 1975	Regional, Local	See above	Building
New Big Oak Flat Road	Structure	Eligible 2004	Local	The new Big Oak Flat road tunnels, bridges, and retaining walls are considered significant in transportation as well as landscape architecture and architecture. Eligible under criteria A, C, and D.	8 structures: Cascade Creek Bridge, Tamarack Creek Bridge, Wildcat Creek Bridge, 3 tunnels, and stretches of masonry guard walls.
Old Big Oak Flat Road	Structure	Eligible 2004	Local	The Old Big Oak Flat Road is significant as one of the earliest transportation routes into Yosemite Valley. It served horse and wagon traffic and it eventually opened the Yosemite Valley to automobiles. Eligible under criterion A.	All manmade structures on the route such as bridges, culverts, walls, and building foundations as well as the roadbed itself.
Rangers' Club	Building	Listed 1977	National, Regional	The Rangers' Club in Yosemite Valley, designed by Charles Sumner Kaiser, is representative of NPS's first director, Stephen T. Mather's commitment to an architectural aesthetic appropriate for the park lands that he was charged to manage. The Rangers' Club is also of regional historical significance in the category of conservation through its connection with the first director of the NPS and through its integrity of function as the residence for unmarried rangers. (Also Contributes to the Yosemite Valley Historic District)	Building
Ranger's Club NHL	Building	Listed 1977	National	See above	Ranger's Club, Interior furnishings, fixtures; garage-woodshed; wood-framed transformer house
Wawona Tunnel	Structure	Eligible 2004	National	The Wawona Tunnel is considered significant in the fields of transportation, architecture, and landscape architecture. It was built as part of the rerouting of the old Wawona Road between Yosemite Valley and Grouse Creek, where engineers determined that a tunnel was necessary to attain a satisfactory grade. Construction of a tunnel would also be cheaper and require less excavation. Its construction was an innovation in highway design within the National Park System, following the precedent set by the Zion Park highway tunnel. Upon completion, it was the longest vehicle tunnel in the western United States. Eligible	Wawona Tunnel and the low stone retaining walls around the parking area.

TABLE 9-168: KNOWN HISTORIC PROPERTIES WITHIN SEGMENT 2

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
				under criteria A, C, and D.	
Yosemite Valley Bridges Historic District	District	Listed1977	National	These Valley bridges are unique for their architectural design and aesthetic considerations. The use of native granite in the form of rough boulders reflects the tenets of the Rustic style. They represent rare early examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads. (Also Contributes to the Yosemite Valley Historic District)	Yosemite Creek Bridge, Ahwahnee Bridge, Clark's Bridge, Pohono Bridge, Sugar Pine Bridge, Tenaya Creek Bridge, Happy Isles Bridge, Stoneman Bridge.
Yosemite Valley Chapel	Building	Listed 1973	Regional	This chapel, now the oldest building in Yosemite, was erected in 1879 as a chapel and has been used as such since then. It is still used for church services on Sundays. The simple architectural design of the structure represents a particularly fine example of the early chapels constructed in the Sierra Nevada Mountains and is well preserved. 1879 built, 1901 relocated, 1965 foundation raised 3 ft.	Building
Yosemite Valley Historic District					
Yosemite Village Historic District	District	Listed 1974	Regional, Local	This historic district, through both sites and structures, represents almost the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the resources of Yosemite.	44 buildings and sites (A complete description of the contributing resources is included in Appendix J-1)
Yosemite Lodge	Possibly eligible to historic district	Not evaluated	Unknown	The Yosemite Lodge area is a 1950s motel complex consisting of the main lodge (registration building), 249 mid-scale motel units, two restaurants, a cafeteria, bar, gift and general merchandise store, specialty gift shop, bike rental shop, post office, swimming pool, and permanent and temporary employee housing and administrative facilities. The last of the historic guest cabins along Yosemite Creek and the Merced River were removed after the 1997 flood, leaving the swimming pool as the only pre-1942 structure in the entire complex.	Buildings
Housekeeping Camp	Possibly eligible to historic district	Not evaluated	Unknown	The Housekeeping Camp area consists of 133 closely sited, rustic cinderblock and canvas tents, constituting 266 lodging units. Circulation is informal with few paved surfaces. Service buildings include a camp store and laundry and shower facilities all built after 1942.	Site
SOURCE: NPS 2012h Abbreviations: N/A = not applicable; NHL = National Historic Landmark; NPS = National Park Service					

Segments 3 and 4: Merced River Gorge and El Portal – Historic Properties. Known historic resources within Segments 3 and 4 include the Merced River Travel Corridor, the Yosemite Hydroelectric Power Plant (the Cascades Powerhouse), the Old Coulterville Forestry Department Road and Trail, and designated El Portal Historic Structures. Table 9-169 describes these resources and Figure 9-49 and Figure 9-50.

The primary element of the Merced Canyon Travel Corridor is El Portal Road, which was originally constructed as a wagon road in 1905 and was substantially reconstructed in 1925. The road includes hand-laid stone parapet guardwalls and drainage catchment structures. Following consultation with the SHPO and the ACHP, many of these features were removed as part of the El Portal Road Reconstruction Project that was a direct consequence of damage caused by a catastrophic flood in 1997. Other properties within the river corridor include rock quarries, historic trash scatters, sections of pre-1925 roadbed, historic work campsites, and the Arch Rock Entrance Station complex (eligible for the NRHP as an individual property), which consists of a ranger residence/office, entrance kiosk, parking lot, and restroom building (Volpe 1997).

Properties in El Portal that are either listed in or are eligible for listing in the NRHP include the Bagby stationhouse (now used as the Yosemite Conservancy headquarters); Yosemite Valley Railroad caboose number 15; El Portal Murchison House; three National Lead Company residences; El Portal Old Schoolhouse; the El Portal Hotel (now used as the NatureBridge headquarters), and two Yosemite Valley Railroad residences, mostly in the Village Center of Old El Portal. Some of these structures are privately owned but located on federal land.

Segments 5, 6, 7, and 8: South Fork Merced River Wawona – Historic Properties. Known historic resources within Segments 5, 6, 7, or 8 include the Wawona Hotel and Thomas Hill Studio District NHL Wawona, Wawona Covered Bridge, Hodgdon Homestead Cabin, Chris Jorgensen Studio, Acting Superintendent's Headquarters, and the Pioneer Yosemite History Center. Table 9-170 and Figure 9-51 describe these resources.

The most significant of the historic structures in Wawona is the Victorian-style Wawona Hotel complex. The hotel complex includes seven structures and is significant for its architectural features as well as for its historical associations with early California commerce and the landscape painter Thomas Hill. The complex includes the Pavilion (former Hill's Studio), Little White (Manager's Cottage), Little Brown (Moore Cottage), Long White (Clark Cottage), Long Brown (Washburn Cottage), the Wawona Hotel, and the annex. The complex was designated a National Historic Landmark on May 28, 1987. The Wawona Golf Course, in operation since 1918, is a being evaluated as a contributing resource under the current Cultural Landscape Inventory being completed by the NPS Pacific West Regional Office staff.

The Pioneer Yosemite History Center, which was determined eligible for listing as a historic district by the California SHPO in 2011, contains many structures relocated from other areas of the park to its current location on the bank of the South Fork Merced River. This site consists of 26 contributing features, including Wawona Grey Barn/Washburn Barn; Hodgdon homestead/cabin, Yosemite Transportation Company office/Wells Fargo office, Wells Fargo utility building, Acting Superintendent's Headquarters/Army cabin, Army tack room, Crane Flat ranger cabin/ranger patrol cabin, jail/powder house/morgue, Chris Jorgenson Studio/artist cabin, wagon shelter/wagon shed, Wawona Covered Bridge, Wawona stables, Chinese laundry/laundry/carriage shop; Pioneer Yosemite History Center signs (two); historic circulation system; flagpoles (two); hitching posts (two); retaining walls; stone perimeters; privy; water trough; and split rail perimeter fences (NPS 2011s).

TABLE 9-169: KNOWN HISTORIC PROPERTIES WITHIN SEGMENTS 3 AND 4

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Bagby Stationhouse	Building	Listed 1979	Local	Along with the uniquely designed twin water tanks, the stationhouse is illustrative of an important era in Yosemite's history.	This 1-acre historic district includes the Bagby stationhouse, water tanks, and turntable
El Portal Hotel	Building	Eligible 1999	Local	This building qualifies for listing because of its association with the development and expansion of the tourist industry at El Portal. It also qualifies for listing because it embodies architectural characteristics associated with a 1930s-era commercial buildings construction type.	Building
El Portal Historic Structures	District	Eligible 1999	Local	The Village Center and Old El Portal areas appear to qualify for listing in the NRHP as historic districts under Criterion A because they are associated with the development and expansion of the railroad, mining, timber, and tourist industries at El Portal, as well as the town's socioeconomic development and expansion.	Murchison House, Yosemite Research Center Office, three National Lead Company residences, Village Center Store, three Yosemite Valley Railroad residences, school, El Portal Market, El Portal Hotel
El Portal Murchison House	Building	Eligible 1999	Local	This building qualifies for listing because of its association with the significant National Lead Company barium mining operations at El Portal; it embodies the distinctive architectural characteristics associated with mining-related residential and management structures during the late 1920s-early 1930s; and it is associated with Earl H. Murchison, National Lead Company superintendent at El Portal.	Building
El Portal Old Schoolhouse	Building	Listed 1999	Local	The El Portal Old Schoolhouse is significant as an educational institution that serves as an example of the socioeconomic development of the town of El Portal. Architectural characteristics and building materials associate the Old Schoolhouse with the local El Portal vernacular style during the 1920s and 1930s.	Building
Foresta Road	Possible district	Not evaluated	Unknown	The present-day Foresta Road largely follows a wagon road built in 1913 to take early automobile tourists from Foresta to El Portal as part of what was known as the "Triangle Route." It is only paved within the residential area; north of the administrative area it is an unimproved road. Though likely in its original route, its significance has not been evaluated. The unpaved section also includes bridges that also have not been evaluated. Although Native Americans traveled between El Portal and Yosemite Valley through Foresta, it is not known if that trail followed the same route as the Foresta Road.	Structure
Hennessey's Ranch	Possible archeological district and/or site	Not evaluated	Unknown	James Hennessey began the first known ranch in the El Portal area in the early 1870s and was one of the earliest to promote tourism to Yosemite. The ranch house included accommodations for paying guests who were usually on their way to Yosemite Valley. The ranch included berries, grapes, a vegetable garden, and an orchard of fruit trees, some of which still exist. All that is left currently, besides some of the orchard, are some stone remnants and the graves of his mother and an unknown traveler at the site of the ranch.	Historic archeological resources and orchard remnant

TABLE 9-169: KNOWN HISTORIC PROPERTIES WITHIN SEGMENTS 3 AND 4

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Hetch Hetchy Railroad Engine No. 6	Structure	Listed 1978	Local, Regional	Hetch Hetchy Railroad Engine No. 6 is the last and heaviest locomotive, and the only one of Shay design, purchased by the Hetch Hetchy Railroad. It contributed in an important way to the history of a railroad as part of a regionally significant engineering project, and later as part of a locally significant lumber industry logging railroad.	Structure
McCauley and Meyer Barn	Building	Listed 1978	Local	This barn is among the last remaining barns in Yosemite that possess Architectural significance and integrity. They also represent some local interest in agriculture through association with pioneering ranches once located within the park boundaries.	Building
Merced Canyon Travel Corridor Historic District	District	Eligible 1977	National, state	This historic district is a unique multiple resource historical property eligible for listing on the NRHP. The travel route from El Portal to Yosemite Valley has been used for at least the past 2,000 years, spanning a myriad of cultural needs satisfied by the natural landscape and its resources.	El Portal Road, historic period sites (trash scatters, Arch Rock Entrance Station, historic road beds, Coulterville Road Blacksmith Shop, aligned rock structure, historic camp area, Cascade Falls Trail, possible privy, CCC camp, Pohono pit, rock quarry), landscape, and prehistoric/historic native American sites.
National Lead Company Buildings (Murchison House and offices)	Building	Eligible 1999	Local	The buildings qualify for listing because of their association with the significant National Lead Company barium mining operations at El Portal; it embodies the distinctive architectural characteristics associated with mining-related residential and management structures during the late 1920s-early 1930s.	Three residences, including Murchison House.
National Lead Company Residence Buildings Nos. 703 704, and 705 (Rancheria Flat)	Building	Eligible 1999	Local	These buildings qualify for listing because of their association with the significant National Lead Company barium mining operations at El Portal, embodying the distinctive architectural characteristics associated with mining-related residential and management structures during the late 1920s-early 1930s.	Building
Old Coulterville Road and Trail	Structure	Eligible 1978	Local	The Coulterville Road is the first stagecoach road to have reached the floor of Yosemite Valley and is of local significance in transportation and engineering.	Structure
Rancheria Flat Mission 66-Era Employee Housing and Infrastructure	Possible District	Not evaluated	Unknown	Constructed in the fall/spring of 1960-61, the 20 homes built in Rancheria are typical of Mission 66-style architecture. They were built from standard plans designed by the NPS Branch of Architecture to create efficient, utilitarian housing which gives these homes a particularly strong connection to Mission 66. The homes have been continuously occupied by Yosemite staff and, although some modifications have occurred, they likely maintain a good degree of integrity.	19 out of 20 buildings remain.

TABLE 9-169: KNOWN HISTORIC PROPERTIES WITHIN SEGMENTS 3 AND 4

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Track Bus No. 19	Object	Listed 1978	Local	Track Bus No. 19 is of local historical significance in the category of transportation. It is one of the few survivors of the gasoline-powered rigs which ran on the Hetch Hetchy Railroad.	Object

Abbreviations: No. = number; NPS = National Park Service; NRHP = National Register of Historic Places
SOURCE: NPS 2012h

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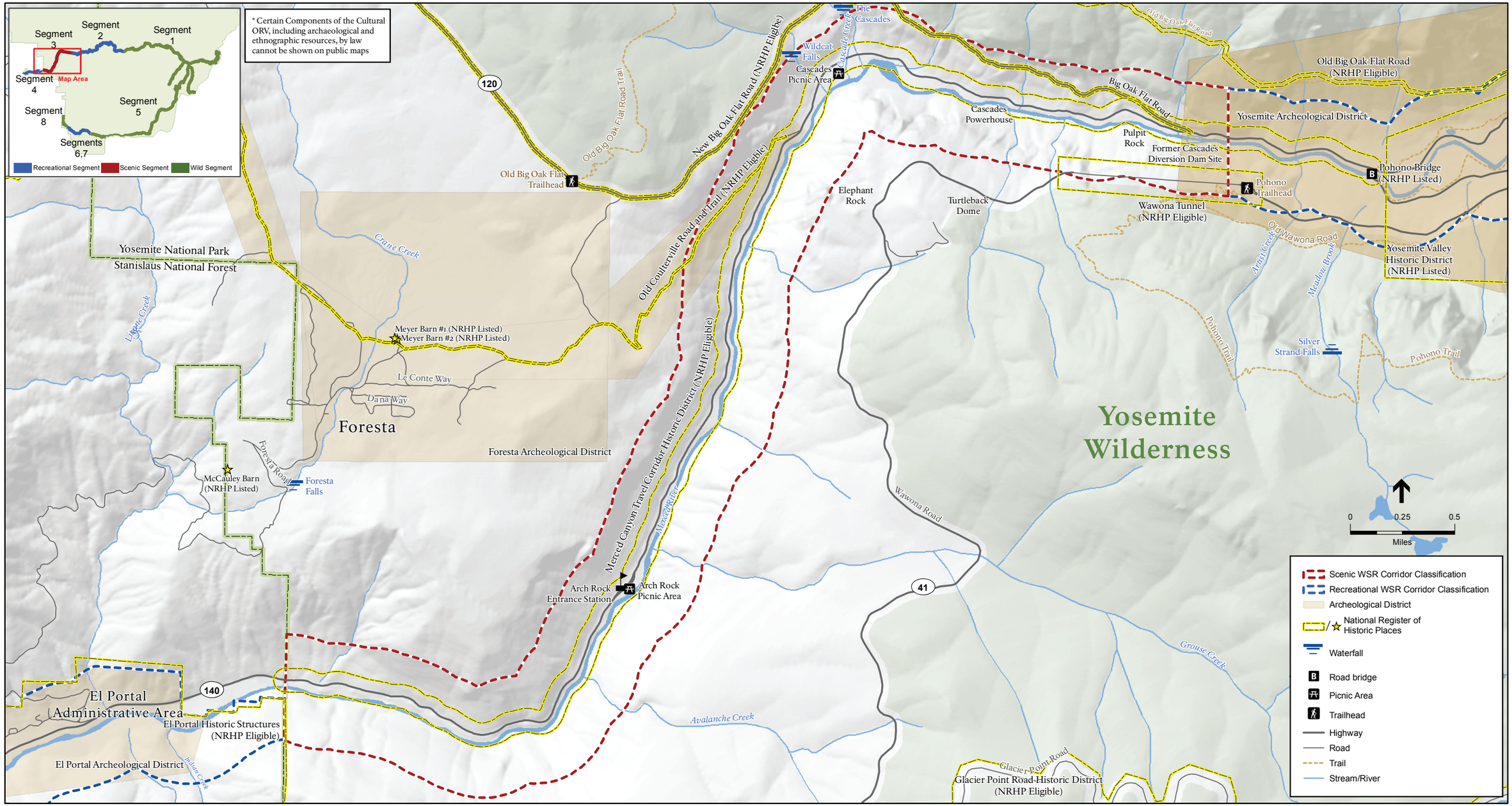

SOURCE: NPS, 1997, 2011

Figure 9-49
Segment 3 - Merced Gorge
Historic Properties

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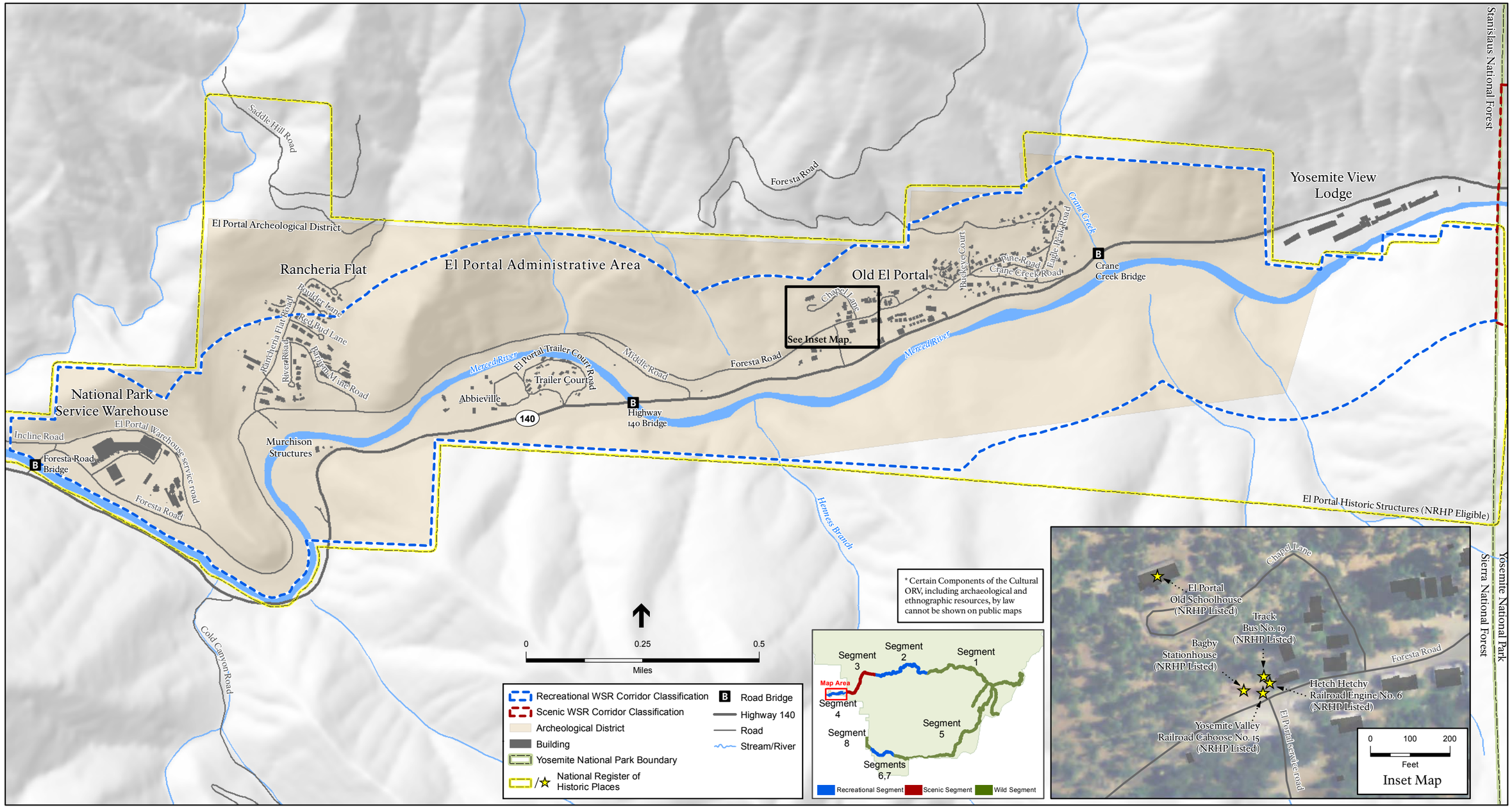

SOURCE: NPS, 1997, 2011

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Figure 9-50
Segment 4 - El Portal
Historic Properties

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TABLE 9-170: KNOWN HISTORIC PROPERTIES WITHIN SEGMENTS 5, 6, 7, AND 8

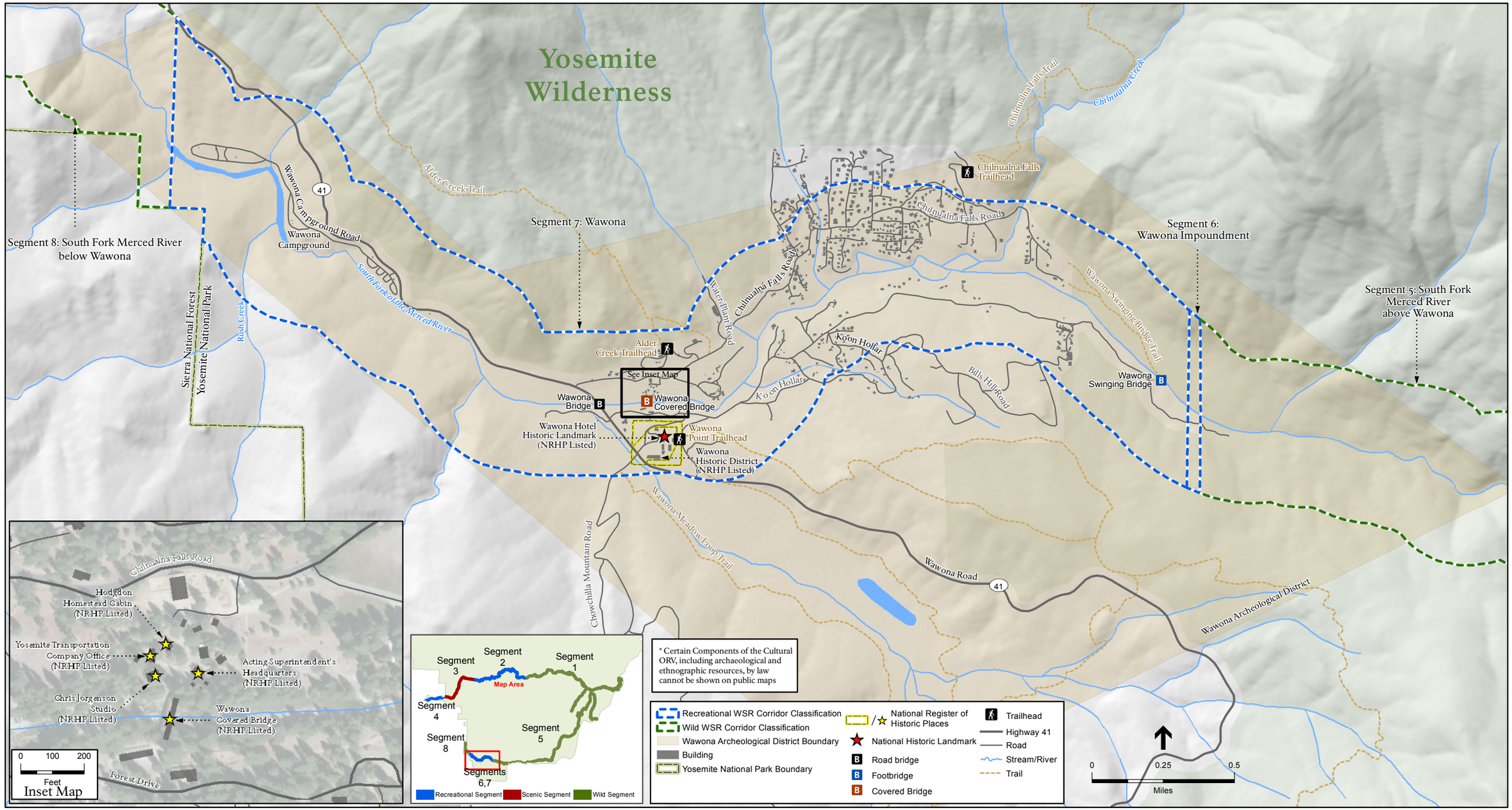
National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Acting Superintendent's Headquarters	Building	Listed 1978	Local	This building is the sole remaining structure associated with the military tenure in Wawona.	Building
Chris Jorgenson Studio	Building	Listed 1979	Local	Yosemite has been a lodestone for artists since 1856 when lithographer Thomas Ayres accompanied the first tourist party to the Valley. One of the park's most prolific scenic interpreters was the noted California painter Chris Jorgenson, who maintained a seasonal residence and studio in the Valley for 20 years. This studio, now an integral part of the Pioneer Yosemite History Center, is of local significance in art.	Building
Hodgdon Homestead Cabin	Structure	Listed 1978	Local	The Hodgdon homestead cabin possesses local architectural significance as the finest example of a pioneer homestead in Yosemite.	Building
Pioneer Yosemite History Center	District	Eligible 2011	Local	The Pioneer Yosemite History Center is significant under the NRHP criterion A for its association with the development of tourism and outdoor recreation during the Mission 66 period.	Contributing features include Wawona grey barn/Washburn barn; Hodgdon homestead/cabin; Yosemite Transportation Company office/Wells Fargo office; Wells Fargo utility building; Acting Superintendent's Headquarters/Army cabin; Army tack room; Crane Flat ranger cabin/ranger patrol cabin; jail/powder house/morgue; Chris Jorgenson studio/artist cabin; Wagon shelter/wagon shed; Wawona Covered Bridge; Wawona stables; Chinese laundry/laundry/carriage shop; Pioneer Yosemite History Center signs (2); historic circulation system; flagpoles (2); hitching posts (2); retaining walls; stone perimeters; privy; water trough; and split rail perimeter fences.
Wawona Covered Bridge	Structure	Listed 2007	State	The Wawona Covered Bridge is significant at the state level under NRHP criteria A, B, and C for its association within the contexts of transportation, entertainment, and recreation; its association with Galen Clark; and as a unique example of a covered bridge within both California and the western region of the NPS.	Structure

TABLE 9-170: KNOWN HISTORIC PROPERTIES WITHIN SEGMENTS 5, 6, 7, AND 8

National Register-Listed or Eligible Properties	Property Type	NR Status	Level of Significance	Significance Summary	Contributing Resources
Wawona Hotel and Pavilion	District	Listed 1975	National	Wawona's architectural importance to American architecture is the largest existing Victorian-style hotel complex within the boundaries of a national park, and one of the few remaining in the United States with this high level of integrity.	The Clark Cottage, the Wawona Hotel building, the Little White Cottage, the Moore Cottage, the Washburn Cottage, the Pavilion (former Hill's studio), and the Annex.
Yosemite Transportation Company Office	Building	Listed 1978	Local	The Yosemite Transportation Company office (Wells Fargo office) is of local significance in the fields of architecture and transportation, based on the design of the structure and on its use for many years as a transportation facility for visitors to Yosemite Valley.	Building
National Historic Landmarks					
Wawona Hotel and Thomas Hill Studio NHL	District	Listed 1987	National	Wawona's architectural importance to American architecture is as the largest existing Victorian-style hotel complex within the boundaries of a national park, and one of the few remaining in the United States with this high level of integrity.	Clark Cottage, the Wawona Hotel Building, the Little White Cottage, the Moore Cottage, the Washburn Cottage, and the Annex.

Abbreviations: N/A = not applicable; NHL = National Historic Landmark

SOURCE: NPS 2012h



SOURCE: NPS, 1997, 2011

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Figure 9-51
Segments 6, 7, 8 - Wawona
Historic Properties

Back page of Figure 9-51

Four of the buildings are also listed as individual resources in the National Register, including the Hodgdon homestead/cabin, Acting Superintendent's Headquarters/Army cabin, Chris Jorgenson Studio/artist cabin, and Wawona Covered Bridge.

Several CCC structures (e.g., the NPS maintenance complex and ranger office) and three residences constructed immediately after the Wawona land purchase in 1932 still exist in this area and are being evaluated for eligibility through a cultural landscape inventory being completed by the NPS Pacific West Regional Office for the Wawona Valley.

Environmental Consequences Methodology

Historic districts, buildings, structures, and landscapes are considered eligible for inclusion on the *National Register of Historic Properties* (NRHP) when the properties have significance and retain integrity associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); when they are associated with the lives of persons significant in our past (Criterion B); when they embody the distinctive characteristics of a type, period, or method of construction (Criterion C); or when they have contributed or have the potential to contribute information about the past (Criterion D). Typically, an "adverse effect" as described in the National Historic Preservation Act (NHPA) is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects include those detailed in CFR 800.5 (a)(2)(i-vii), which include physical destruction or damage, alterations inconsistent with the Standards for the Treatment of Historic Properties (36 CFR part 68), relocation of the property, change in character of use, or neglect resulting in deterioration. For an analysis of historic properties in accordance with the NHPA, please refer to Appendix J in the Final Merced River Plan/EIS.

The analysis below focuses on listed, eligible, and identified but not yet evaluated historic properties; however uses National Environmental Protection Act (NEPA) impact thresholds which are different but consistent with analysis presented in Appendix J.

NEPA Methodology

For the purposes of NEPA, historic resources include those that are listed, eligible, or identified but not yet been evaluated. In accordance with the spirit of the National Historic Preservation Act's criteria for adverse effect; historic properties evaluated under NEPA are analyzed qualitatively, based on existing knowledge about the significance of historic districts or individually-listed historic properties. Actions specific to individual alternatives that would affect these historic properties are described under each alternative.

Analyses of impacts for the historic built-environment under NEPA are based on:

- **Context.** All actions called for in the Final Merced River Plan / EIS are considered local.
- **Intensity.** The intensity of impact would be negligible, minor, moderate, or major and is based on the number of contributing or individually-eligible contributing resources within a historic district impacted and/or the amount of new infrastructure proposed in a given area. Under NEPA criteria, intensity of the impact is as follows:
    - ***Negligible.*** Impact results when a single contributing resource of a historic district is removed, altered or retained but redesigned; however, overall the action allows the

historic district to retain its significance and does not affect its National Register status or its ability to become listed if only eligible.

- ***Minor*.** Impact results when a multiple contributing resources of a historic district or an individually listed historic property is removed, altered or retained but redesigned, and/or the addition of minimal new infrastructure; however, overall the action allows the district to retain its significance and does not affect its National Register status or its ability to become listed if only eligible.
- ***Moderate*.** Impact when a substantial portion of contributing resources of a historic district or multiple individually-listed historic properties are removed, altered or retained but redesigned, and/or the addition of substantial new infrastructure and requires an update to the National Register nomination to ensure its significance can still be conveyed or that its ability to become listed if only eligible has not been compromised.
- ***Major*.** Impact results when an entire historic district is removed/eliminated and/or completely redesigned and replaced with new infrastructure the actions could result in the property losing its National Register status or no longer make it eligible, if it has been identified but not yet evaluated.

– **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, such as short-term impacts associated with construction or restoration activities. A long-term impact would have a permanent i**mpact on** historic resources.

- **Type of Impact.** The type of impact considers whether the impact would be beneficial or adverse to visitor services. Beneficial impacts would stabilize a historic resource and improve its overall condition. Adverse impacts are found when an undertaking may alter, directly or indirectly, and of the characteristics of a historic property that qualify the property for including in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Evaluating Effects under the National Historic Preservation Act

For an evaluation of adverse effects to historic properties in accordance with Section 106 of the National Historic Preservation Act, please refer to Appendix J.

Environmental Consequences of Alternative 1 (No Action)

All River Segments

Under Alternative 1 (No Action), all cultural landscape resources, historic buildings, and structures would continue to be managed as they are today. Alternative 1 also includes rehabilitation or other historic preservation as defined in existing or future plans that address specific structures, such as the Yosemite Historic Preservation Program. Impacts would occur only as a result of ongoing park operations and programs, such as facilities maintenance and repair. For historic buildings, cultural landscapes, and structures, these activities would be subject to the Secretary of the Interior's Standards for the Treatment of Historic Properties. Under Alternative 1 (No Action), impacts on these resources would be negligible under NEPA criteria.

Segment 1: Merced River Above Nevada Fall

Known historic resources in Segment 1 include the Merced Lake High Sierra Camp Historic District and the Merced Lake Ranger Station. Other resources may exist in the upper reaches of the Merced River drainage. Under the No-Action Alternative (Alternative 1), ongoing impacts resulting from use and wear would occur however the parks ongoing maintenance and historic preservation program would continue to improve the condition of historic properties and contributing resources over time, resulting in a long-term beneficial impact.

Segment 2: Yosemite Valley

There are numerous listed, eligible, and identified but not evaluated historic districts, as well as three National Historic Landmarks in Yosemite Valley. Under the No-Action Alternative (Alternative 1), ongoing impacts resulting from use and wear would occur, however the parks ongoing maintenance and historic preservation program would continue to improve the condition of historic properties and contributing resources over time, resulting in a long-term beneficial impact. However, long-term, negligible, adverse impacts would persist due to continued encroachment of conifers into contributing meadows and lack of scenic vista management.

Segments 3 and 4: Merced River Gorge and El Portal

Both of these segments include several historic sites and structures considered eligible for listing in the NRHP. Under the No-Action Alternative (Alternative 1) ongoing impacts resulting from use and wear would occur, however the parks ongoing maintenance and historic preservation program would continue to improve the condition of historic properties and contributing resources over time, resulting in a long-term beneficial impact.

Segments 5, 6, 7, and 8: South Fork Merced River

Segment 7 contains several historic sites and structures, one historic district, and one National Historic Land Mark. Under the No-Action Alternative (Alternative 1) ongoing impacts resulting from use and wear would occur, however the parks ongoing maintenance and historic preservation program would continue to improve the condition of historic properties and contributing resources over time, resulting in a long-term beneficial impact.

Summary of Impacts under No Action Alternative (Alternative 1)

Under Alternative 1 ongoing impacts resulting from use and wear would occur, however the parks ongoing maintenance and historic preservation program would continue to improve the condition of historic properties and contributing resources over time, resulting in a long-term beneficial impact. In Yosemite Valley, long-term, negligible, adverse impacts would persist due to continued encroachment of conifers into contributing meadows and lack of scenic vista management.

Cumulative Impacts from Alternative 1

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The Final Tuolumne River Plan/EIS calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for within historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management / access.

Overall Cumulative Impact

The cumulative impact of would be long-term and beneficial primarily due to the park's ongoing maintenance and historic preservation program, even with the loss of historic properties within Curry Village, conifer encroachment into contributing meadows and lack of comprehensive scenic vista management.

Environmental Consequences Common to Alternatives 2–6

While discussed separately, actions and impacts common to Alternatives 2-6 are summarized for each alternative, but the individual actions are evaluated separately in the section to follow.

All River Segments

Impacts of Actions to Protect and Enhance River Values

Table 9-171 describes impacts of actions intended to protect and enhance river values in all river segments under Alternatives 2-6.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no actions to protect and enhance river values that are common to Alternatives 2–6 that would affect historic properties; therefore there would be no impact on historic resources.

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TABLE 9-171: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN ALL RIVER SEGMENTS UNDER ALTERNATIVES 2-6

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Corridorwide	Remove abandoned infrastructure	Yosemite Valley Historic District; Merced Canyon Travel Corridor Historic District; Wawona Campground	Throughout the corridor, abandoned underground infrastructure that alters hydrology, including remnants of former sewer treatment facilities, sewer and water line, and manholes, will be removed and the area restored to natural conditions.	The removal of abandoned infrastructure would result in long-term, negligible, adverse impacts; however, the long-term beneficial impacts would result from restored contributing meadow conditions.
Hydrological / Geological Processes Actions				
Corridorwide	Remove revetments	Yosemite Valley Historic District	Remove 3,400 feet of riprap and revegetate with riparian species where needed. An additional 2,300 feet will be removed but replaced with bioconstructed riverbank stabilization (see map in Appendix E for precise locations).	The removal of abandoned infrastructure would result in long-term, negligible, adverse impacts; however, the long-term beneficial impacts would result from restored contributing meadow conditions.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

There are no visitor use or user capacity management actions common to Alternatives 2–6 that would affect historic properties; therefore, there would be no impact on historic resources.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-172 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternatives 2-6.

Biological Actions. Biological resource actions such as meadow restoration, formalization of access points to the river or within meadows, the removal of social trials and abandoned infrastructure within meadows, rerouting historic trails out of sensitive resource areas or sections immediately adjacent to the river, and removing campsites within 100 feet of the ordinary highwater mark. The removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in a long-term, negligible, adverse impacts; however, restoration of the contributing resource would result in a long-term, beneficial impact.

Hydrological/Geological Processes Actions. Hydrological / Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources.

Scenic Resource Actions. Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-173 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternatives 2-6.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources.

Yosemite Lodge and Camp 4. Actions to manage visitor use and facilities in the Yosemite Lodge and Camp 4 Campgrounds areas would include the removal or relocation of some facilities and services outsides the river corridor, and the construction of new infrastructure such as a bus stop, additional overnight parking, and additional campsites at the Camp 4 Campground. The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact.

TABLE 9-172: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVES 2-6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resource Actions				
Segments 2A and 2B	Restoration of Ahwahnee Meadow	The Ahwahnee Hotel NHL; Yosemite Valley Historic District	Restoring Ahwahnee Meadow to natural meadow conditions, through removal of the tennis courts, irrigation, ditches, and restoration of topography would affect a contributing resource of the Yosemite Valley Historic District.	Removal of a contributing resource (tennis courts) would result in a long-term, negligible, adverse impact; however restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restoration of Cook's Meadow	Yosemite Valley Historic District	Remove fill of a former road bed north of Northside Drive between the Rangers' Club and the three-way stop. Revegetate with native meadow species. Remove roadside parking along Sentinel Drive and restore to meadow conditions. Ecologically restore associated non-historic informal trails in Cook's Meadow and address continuing use patterns to enhance black oak woodland and meadow habitat.	Restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restoration of Sentinel Meadow	Yosemite Valley Historic District	Add 150 feet of boardwalk to the west of the existing boardwalk in order to accommodate visitors and reduce meadow trampling. Road improvements over meadows will maintain formalized shoulder parking and use wide box culverts or other design components such as rolling dips, permeable subgrade, etc. to improve surface water flow.	Restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restoration of Leidig Meadow	Yosemite Valley Historic District	Remove non-historic informal trails that incise meadow, and areas of wet and/or sensitive vegetation which fragment meadow habitat. Restore native meadow vegetation. Replace a section of paved trail within the bed and banks of the river with an elevated boardwalk.	Restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restoration of Stoneman Meadow	Yosemite Valley Historic District	Slightly expand fenced area to protect wetlands on north end of meadow near Lower Pines Campground. Remove invasive non-native species and encroaching conifers. Remove ditch, fill with native soils and revegetate.	Removal of a contributing resource (historic ditches) would result in a long-term, negligible, adverse impact; however restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restoration of Bridalveil Meadow	Yosemite Valley Historic District	Remove former non-historic sewer plant including buried structure, piping on both sides of the river, and add fill if needed. Cover with native topsoil and revegetate with native plants. Plant willows into the deep ditch on west end of meadow. Address headcuts by planting willows along riverbank. Re-establish the riparian shrub layer. Remove encroaching conifer saplings. Move 780 feet of the historic Valley Loop Trail 8-12 feet south adjacent to the Southside Drive road prism. Re-vegetate abandoned sections of the Valley Loop Trail with native meadow species.	Realignment of a contributing resource (Valley Loop Trail) would result in a long-term, negligible, adverse impact; however restoration of the contributing resource would result in a long-term, beneficial impact.

TABLE 9-172: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVES 2-6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segments 2A and 2B	Restoration of Slaughterhouse Meadow	Yosemite Valley Historic District	Re-route section of trail through Slaughterhouse Meadow out of wetlands to an upland area. Re-vegetate abandoned sections of the Valley Loop Trail with native meadow species.	Realignment of a contributing resource (Valley Loop Trail) would result in a long-term, negligible, adverse impact; however restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Restore historic ditches	Yosemite Valley Historic District	Throughout Segment 2, fill 2,155' of ditches not serving current operational needs using adjacent berm material or pond and plug techniques.	Removal of a contributing resource (historic ditches) would result in a long-term, negligible, adverse impact; however restoration of the contributing resource would result in a long-term, beneficial impact.
Segments 2A and 2B	Reduce conifer encroachment in meadows		Manually or mechanically remove conifer seedlings and saplings from meadows and black oak communities in Yosemite Valley. Restore low-intensity, high frequency fire as an ecological process. Restore hydrologic processes where possible.	Restoration of the contributing resource (meadows) would result in a long-term, beneficial impact.
Segments 2A and 2B	Establish riparian zone; remove existing infrastructure away from river	Yosemite Valley Historic District	Protect riparian zone from new development within 150 feet from the ordinary high water mark. Relocate or remove all non-contributing campsites at least 100 feet away from the ordinary high water mark at Backpackers, North Pines and Lower Pines Campgrounds.	Removal of non-contributing resources would result in no impact.
Hydrological / Geological Processes Actions				
Segments 2A and 2B	Remove former Happy Isles footbridge footings	Yosemite Valley Historic District	Remove former footings and the former river gauge base from the bed and banks of the river. Revegetate denuded non-historic informal trails.	Removal of a contributing resource (historic bridge footings) would result in a long-term, negligible, adverse impact.
Segments 2A and 2B	Restore highly impacted riverbanks between Clark's and Sentinel Bridges	Yosemite Valley Historic District; Yosemite Valley Historic Bridges District	Place eight constructed log jams in the channel between Clark's and Sentinel Bridges to address river widening and low channel complexity. Log jams would be designed to look natural, without straight-cut edges and with root wads remaining. Incorporate brush-layering and re-vegetation to repair localized riverbank erosion.	Restoration actions immediately adjacent to historic bridges would result in no impact to contributing resources.
Segments 2A and 2B	Remove Pohono Gauging Station	Yosemite Valley Historic District	Move the gauging station north of the river outside of the bed and banks of the river. Revegetate denuded areas.	Removal of a contributing resource (gauging station) would result in a long-term, negligible, adverse impact.
Scenic Resource Actions				
Segments 2A and 2B	Scenic Vista Management	Yosemite Valley Historic District	Selectively thin trees to maintain views. See appendix H.	Restoration of contributing resource (historic views and vistas) would result in a long-term, beneficial impact.

TABLE 9-173: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVES 2-6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Yosemite Village and Housekeeping Camp				
Segment 2A	Remove temporary employee housing at Lost Arrow and Huff House	Yosemite Valley Historic District	Remove non-historic hard-sided cabins at Lost Arrow and non-historic canvas tent cabins Huff House temporary employee housing	Removal of the non-contributing resources would result in a long-term, beneficial impact to the historic district.
Segment 2A	Redesign The Ahwahnee Hotel Parking Area	The Ahwahnee Hotel NHL; Yosemite Valley Historic District	Redesign and formalize the existing parking lot at the Ahwahnee Hotel, providing for proper drainage to meet hotel needs and replace spaces lost in the rockfall. This would include the construction of a new 50 parking space lot east of the current parking.	Redesign of an existing contributing resource would result in a long-term, minor, adverse impact due to NHL status.
Segment 2A	Remove Concession Headquarters and Concessioner Garage	Yosemite Valley Historic District; Yosemite Village Historic District	Removal of the Concessioner Headquarters Building and the Concessioner Garage would affect contributing resources.	Removal of two contributing resources – the Concessioner Headquarters Building and the Concessioner Garage – would result in long-term, minor, adverse impacts to the districts.
Segment 2A	Repurposing of the Government Utility Building for shuttle maintenance	Yosemite Valley Historic District; Yosemite Village Historic District	Repurposing of the historic Government Utility Building for shuttle maintenance would result in the alteration of a contributing resource.	The alteration of a contributing resource would result in a long-term, negligible, adverse impact.
Segment 2A	Yosemite Valley NPS Maintenance Building	Yosemite Valley Historic District; Yosemite Village Historic District	Construct new NPS Maintenance Building for Roads and Trails operations displaced by relocation of shuttle maintenance to the Government Utility Building	Construction of minimal new infrastructure within the historic district would result in long-term, minor, adverse impacts.
Yosemite Lodge and Camp 4				
Segment 2A	Actions to Manage Visitor Use and Facilities	Camp 4 Historic Site; Yosemite Valley Historic District	Expansion eastward to provide 40 walk-in sites while retaining 35 campsites at Camp 4 would affect Camp 4 as a historic property as well as its status as a contributing site in the Yosemite Valley Historic District.	The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact.
Segment 2A	Camp 4 overnight parking expansion and shuttle bus stop construction	Camp 4 Historic Site; Yosemite Valley Historic District	Construction a shuttle bus stop, parking for 41 vehicles, and an overflow parking lot for 25 vehicles within the Yosemite Valley Historic District and within the vicinity of the Camp 4 Historic Site.	The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact.
Segment 2A	Remove Yosemite Lodge employee housing	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Remove non-contributing temporary housing at Highland Court and the historic Thousands Cabins.	Removal of both non-contributing and contributing resources would result in a long-term, negligible, adverse impact.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Table 9-174 describes impacts of actions intended to restore riparian and floodplain conditions in Segments 3 and 4 under Alternatives 2-6.

Riparian and Floodplain Actions. Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-175 describes impacts of actions intended to manage visitor use and facilities Segments 3 and 4 under Alternatives 2-6.

El Portal Employee Housing. Actions to provide additional infill employee housing within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts.

TABLE 9-174: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENT 3 AND 4 UNDER ALTERNATIVES 2-6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Riparian Actions				
Segment 4	Remove Employee Housing and establish Riparian buffer at Abbieville / Trailer Village	Hennessey's Ranch (Identified but not evaluated)	Remove or relocate 36 existing private residences. Ecologically restore the former footprints within the 150-foot riparian buffer. All redevelopment will be outside of the 150-foot riparian buffer. Remove development, asphalt and imported fill; recontour and plant native riparian species and oaks within the 150-foot riparian buffer at Abbieville/Trailer Village.	Removal of non-contributing resources would result in no impact.
Floodplain Actions				
Segment 4	Restore the Greenemeyer Sand Pit	None	Restore the Greenemeyer sand pit to natural conditions; remove fill material and recontour. Retain road for river and utility access.	No known historic resources are located at this highly disturbed site, therefore the action would result in no impact.
Segment 4	Remove bulk fuel storage facility from floodplain	Standard Oil Bulk Fuel Storage Facility (Identified but no evaluated)	Remove bulk fuel storage facility, all associated development, and non-native fill from the floodplain. Decompact soils, and plant appropriate native plant species, including valley oak. Relocate the fuel storage area outside the Merced River corridor or find an alternate source for emergency fuel supplies.	Removal of a contributing resource (bulk fuel storage) would result in a long-term, negligible, adverse impact.

TABLE 9-175: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVES 2-6

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Infill El Portal Employee Housing	Rancheria Flat Mission-66 era Housing and Infrastructure Historic District (Identified but not evaluated); Yosemite Valley Railroad Residences (Eligible 1998)	The construction of infill employee housing in Rancheria, Old El Portal, and El Portal Village Center.	Construction of substantial new infrastructure within historic district and/or adjacent to individually-eligible historic properties would result in long-term, moderate, adverse impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Table 9-176 describes impacts of actions intended to restore riparian and floodplain conditions in Segments 5, 6, 7, and 8 under Alternatives 2-6.

Cultural Resource Actions. Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-177 describes impacts of actions intended to protect and enhance river values in Segments 5, 6, 7, and 8 under Alternatives 2-6.

Actions in Wawona to address visitor use and user capacity management or land use and development include the relocation of the RV dump station (currently located at the Wawona Store) to the Wawona Campground and connecting the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts. Additionally, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in long-term, beneficial impacts.

TABLE 9-176: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 5, 6, 7 AND 8 UNDER ALTERNATIVES 2-6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Cultural Resource Actions				
Segment 7	Historic preservation and maintenance	Wawona Hotel and Thomas Hill Studio NHL	Follow the recommendations from the Wawona Hotel Historic Structures Report (2012) to address contributing resources such as Clark Cottage, Main Hotel, Manager's Cottage, and Annex Building.	Improving the condition of contributing resources would have a long-term beneficial impact.

TABLE 9-177: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE FACILITIES IN SEGMENTS 5, 6, 7 AND 8 UNDER ALTERNATIVES 2-6

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 7	Wawona Maintenance Yard Operations	Wawona CCC-era Buildings (Identified but not evaluated)	In Wawona Town center, the park plans to construct a 4,500 square foot building and grounds maintenance facility, a 6,800 square foot combined structural and wild land fire station, and a 4,000 square foot roads maintenance facility, and rehabilitate the existing Civilian Conservation Corps (CCC) structures for potential re-use.	Construction of minimal new infrastructure in the vicinity of historic properties would result in a long-term, minor, adverse impact; however, the rehabilitation of the historic properties would result in a long-term, beneficial impact.
Segment 7	New restrooms, picnic area, and bus stop in the vicinity of the Wawona Store	Pioneer Yosemite History Center Historic District (Eligible 2011)	Replace the existing public restroom facilities next to the Wawona Store with larger restrooms. Delineate picnic area. Add formal river access point and path to river that encourages visitors to walk in the more resilient areas.	Construction of minimal new infrastructure in the vicinity of historic properties would result in a long-term, minor, adverse impact
Segment 7	Remove roadside parking on Wawona Road	Wawona Road (Identified but not evaluated)	Roadside parking between store and Chilnualna Falls Road removed. Relocate bus parking to the Wawona Store parking lot and formalize.	Relocating non-contributing parking spaces along historic property would result in no impact.
Segment 7	Relocate RV Dump Station to Wawona Campground; connect campground to Wastewater Treatment Plan and	Wawona Campground (Identified but not evaluated)	Develop a waste water collection system. Build a pump station above the Wawona Campground to connect the facility to the existing waste water treatment plant. Relocate the dump site to the Wawona Campground away from the river. Design and construct RV dump station on a new sewer line near the campground entrance, at least 150 feet away from the river's	Construction of minimal new underground infrastructure in the vicinity of historic property would result in a long-term, minor, adverse impact

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

All River Segments

There are no additional actions in Alternative 2 beyond those described in actions common to Alternatives 2 – 6 for all river segments.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 2 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-178 describes impacts of actions intended to manage visitor use and facilities in Segment 1 under Alternative 2.

Actions to manage visitor use and facilities in Segment 1 under Alternative 2 would result in a long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-179 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternative 2.

Biological Resource Actions. Biological resource actions including the restoration of El Capitan Meadow and Ahwahnee Meadow would result in long-term beneficial impacts to those contributing resources; however, the removal of a substantial number of contributing resources (Ahwahnee Row and Tecoya housing) would result in a long-term, moderate, adverse impact to both the Yosemite Valley and Yosemite Village Historic Districts.

Hydrological/Geological Processes Actions. Hydrological/Geological Processes actions to remove the historic Stoneman, Ahwahnee, and Sugar Pine Bridges (three of the seven contributing resources within the Yosemite Valley Historic Bridges District) would result in a long-term, moderate, adverse impact.

Cultural Resource Actions. Cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

TABLE 9-178: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 1 UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 1	Actions to Manage Visitor Use and Facilities	Merced Lake High Sierra Camp Historic District	Removal of the Merced Lake High Sierra Camp and conversion of the area to designated wilderness. This would result in the loss of the Merced Lake High Sierra Camp Historic District.	Elimination of the Merced Lake High Sierra Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register.

TABLE 9-179: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resource Actions				
Segments 2A and 2B	Restoration of El Capitan Meadow	Yosemite Valley Historic District	Remove all non-historic informal trails and areas of bare compacted soils and restore to native plant communities. Disperse and reduce roadside parking along the meadow through alternative pavement striping (approximately 30 spaces removed). Retain some roadside parking for SAR and other administrative traffic. Use restoration fencing and signing where necessary to further protect the meadow from trampling.	Restoration of the contributing resource (meadow) would result in a long-term, beneficial impact.
Segments 2A and 2B	Remove Ahwahnee Row and Lower Tecoya Employee Housing	Yosemite Valley Historic District; Yosemite Village Historic District	Removal of historic Ahwahnee Row and Tecoya Housing buildings (21 contributing resources) in order to reclaim the extent of Ahwahnee Meadow to Indian Creek.	Removal of a substantial number of contributing resources of both the Yosemite Valley and Yosemite Village Historic Districts would result in a long-term, moderate, adverse impact to the districts; however, the restoration of a contributing resource (Ahwahnee Meadow) would result in a long-term, beneficial impact.
Geological/Hydrological Processes Actions				
Segments 2A and 2B	Remove Stoneman, Sugar Pine and Ahwahnee Bridges	Yosemite Valley Bridges Historic District; Yosemite Valley Historic District(	Removal of Stoneman, Sugar Pine and Ahwahnee Bridges and restoration to natural conditions would affect the Yosemite Valley Bridges and Yosemite Valley Historic Districts.	Removal of three of the seven contributing resources to the historic district would result in the loss of a relative substantial number of contributing resources and would result in a long-term, moderate, adverse impact to the district and the eligibility would likely need to be re-evaluated.

TABLE 9-179: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Cultural Resource Actions				
Segments 2A and 2B	Rehabilitation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District (2004001159); Yosemite Village Historic District	Rehabilitation of the historic Superintendent's House (Residence 1) per the Secretary of the Interior's Standards for the Treatment of Historic Properties once relocated	Rehabilitation of the contributing resource would result in a long-term, beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-180 describes impacts of actions intended to manage visitor use and facilities in Segments 2A and 2B under Alternative 2.

Curry Village. Actions in the Curry Village Area include the removal of a substantial number of contributing resources at Boys Town and the construction of 78 new hard-sided units, the removal of a short segment of Southside Drive through Stoneman Meadow and the redesign of the Curry Orchard Parking Area, in addition to the removal of the Concession Stables operation and associated infrastructure. The removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging and 16 dormitories at Huff House area) within the historic district would result in long-term, moderate to major, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village and Housekeeping Camp Areas include the removal of non-contributing temporary employee housing at Lost Arrow and re-establishing parking, removal of the non-contributing pool at The Ahwahnee Hotel, elimination of all visitor lodging units and services at Housekeeping Camp, the relocation of Superintendent's House (Residence 1) to the NPS lower housing area, and the redesign and consolidation of parking at the Yosemite Village Day-use Parking Area. The elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4. Actions in the Yosemite Lodge and Camp 4 Area include the construction of a new parking area west of Yosemite Lodge, removal of all Yosemite Lodge visitor accommodations and conversion of the area to camping and a day lodge. The elimination of the Yosemite Lodge Historic District would result in a long-term, major adverse impact and would likely result in ineligibility of the historic district and the construction of a new parking area within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.

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TABLE 9-180: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Curry Village				
Segment 2A	Curry Village Lodging	Yosemite Valley Historic District	A total of 433 guest units 290 tents in Curry Village retained; remove 73 historic canvas tent cabins and replace with 78 hard-sided units in Boys Town; 18 units at Stoneman House retained; and 47 cabin-with-bath units in Curry Village retained. Would affect the Yosemite Valley Historic District.	The removal of a substantial number of contributing resources within the historic district and the construction of substantial new infrastructure within the historic district would result in long-term, major, adverse impacts.
Segment 2A	Curry Orchard Parking Area and Stoneman Meadow Restoration	Yosemite Valley Historic District	Restore Stoneman Meadow including removal of 1,335 feet of Southside Drive and realignment of road through Boys Town area. Extend the meadow boardwalk through wet areas to Curry Village (up to 275 feet). Formalize the Curry Orchard Parking Area to have 420 parking spaces. Remove apple trees and replace with native vegetation.	The removal of a short segment of Southside Drive and the redesign of the Curry Orchard that includes the removal of trees would have a long-term, negligible, adverse impact to the district; however, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.
Segment 2A	Ecologically restore the Curry Village Stables area and associated housing	Yosemite Valley Historic District	Remove Concessioner Stables Office, Horse Stable, Mule Barn, Linen Building, Tack Building, Harness Shop, Blacksmith Shop, Comfort Station, Pony Tack Shed #1 and #2, Employee Residence, Employee Cabins (5), Corral, Feeders, and Fence.	The removal of numerous contributing resources within the Yosemite Valley Historic District would result in long-term, minor, adverse impacts.
Segment 2A	Huff House Employee Housing	Yosemite Valley Historic District	Eliminate the seasonal Curry Village bike and raft rental and remove the Curry Ice Rink. Construct 16 buildings (same dormitory type as Curry Village Residential Area) providing housing 164 employees	Elimination of commercial services and removal of non-contributing ice rink would result in no impact. Construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Yosemite Village and Housekeeping Camp				
Segment 2A	Lost Arrow Administrative Parking Area	Yosemite Valley Historic District	Re-establish an administrative parking lot with 50 spaces.	Re-establishing a parking area for a contributing resource (Lost Arrow Dormitory) would have long-term, beneficial impact to the historic district.
Segment 2A	Remove pool at The Ahwahnee Hotel	The Ahwahnee Hotel NHL; Yosemite Valley Historic District;	Retaining the existing facilities and services, but remove of the non-contributing pool.	The removal of a non-contributing resource would result in no impact to The Ahwahnee Hotel NHL.
Segment 2A	Housekeeping Camp Lodging	Housekeeping Camp Historic District (Identified but not yet evaluated);	Demolition of all lodging units at Housekeeping Camp would potentially result in the demolition of a possible historic property.	Elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register.

TABLE 9-180: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 2A	Relocation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District; Yosemite Village Historic District	Relocation of the Superintendent's House (Residence 1) to the NPS housing area, demolition of the garage, and restoration of the area to natural conditions would result in an adverse impact to contributing resources.	The relocation of a contributing resource within historic districts would result in a long-term, minor, local, adverse impact.
Segment 2A	Redesign the Yosemite Village Day-use Parking Area	Yosemite Valley Historic District; Yosemite Village Historic District	Move Yosemite Village Day-use Parking Area parking northward outside the 10-year floodplain and reroute Northside Drive south of the parking area. Provide a total of 550 parking places by redeveloping part of the current administrative footprint as parking.	Redesign of the non-historic parking area, realignment of a section of the contributing resources (Northside Drive) within the historic district would result in a long-term, negligible, adverse impact.
Yosemite Lodge and Camp 4				
Segment 2A	West of Yosemite Lodge Parking Area	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Re-develop Yosemite Lodge Parking Area to provide additional 150 day-use parking spaces. This parking area will also accommodate 15 tour buses.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Visitor Accommodations	Yosemite Lodge Historic District (Identified but not yet evaluated); Yosemite Valley Historic District	Remove all of the lodging units at Yosemite Lodge (245 units). Re-purpose the area outside the 100-year floodplain for day-use parking, and camping. Restore the 100-year floodplain.	The elimination of the Yosemite Lodge Historic District would result in a long-term, major adverse impact and would likely result in ineligibility of the historic district.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 2 beyond those described in actions common to Alternatives 2 – 6 for Segments 3 and 4.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-181 describes impacts of actions intended to manage visitor use and facilities in Segments 3 and 4 under Alternative 2.

Actions in El Portal include construction of high-density employee housing for 405 employees and a group administrative in the Abbieville / Trailer Village area and would result in long-term, negligible to moderate, adverse impacts to historic properties.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 2 beyond those described in actions common to Alternatives 2 – 6 for Segments 5, 6, 7 and 8.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-182 describes impacts of actions intended to manage visitor use and facilities in Segments 5, 6, 7 and 8 under Alternative 2.

Actions in Wawona include the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

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TABLE 9-181: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVE 2

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Abbieville / Trailer Village Employee Housing	Hennessey's Ranch (Identified but not evaluated)	Construct high-density employee housing for 405 employees.	Construction of substantial new infrastructure resulting in the redevelopment of a contributing resource would result in long-term, moderate, adverse impacts.
Segment 4	Abbieville / Trailer Village Visitor Camping	Hennessey's Ranch (Identified but not evaluated)	Construct a group administrative campground to replace Yellow Pine Administrative Campground.	Redesign and minimal al new infrastructure to support group camping would result in long-term, negligible, adverse impacts.

TABLE 9-182: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 5, 6, 7 AND 8 UNDER ALTERNATIVE 2

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 7	Elimination of commercial day rides form the Wawona Stables	Pioneer Yosemite History Center Historic District (Eligible 2011)	Eliminate the stables operation and day rides. Relocate the Wawona stock use campground (2 sites) to this area.	The retention of a contributing resource, but elimination of the service, would result in no impact to the historic district.

Summary of Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration and Actions Common to Alternatives 2 – 6

Biological resource actions such as the removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the removal of a substantial number of contributing resources (Ahwahnee Row and Tecoya housing) would result in a long-term, moderate, adverse impact to both the Yosemite Valley and Yosemite Village Historic Districts.

Hydrological / Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact.

Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Merced Lake High Sierra Camp – Actions at the Merced Lake High Sierra Camp include the removal of all contributing resources of the Merced Lake High Sierra Camp would results in a long-term, major, adverse impact to the district.

Curry Village – Actions in the Curry Village Area include the removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging and 16 dormitories at Huff House area) within the historic district would result in long-term, moderate to major, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp – Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Additionally, the elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4 Campgrounds –The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, the elimination of the Yosemite Lodge Historic District would result in a long-term, major adverse impact and would likely result in ineligibility of

the historic district and the construction of a new parking area within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.

El Portal – Actions to provide additional infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additional, construction of high-density employee housing for 405 employees and a group administrative campground to replace Yellow Pine Administrative Campground (removed from Yosemite Valley) in the Abbieville / Trailer Village area and would result in long-term, negligible to moderate, adverse impacts to historic properties.

Wawona – Actions in Wawona to relocate the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in a long-term, beneficial impacts. Additionally, the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

Cumulative Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The Final Tuolumne River Plan/EIS calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions

to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for within historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management/access.

Overall Cumulative Impact of Alternative 2

Segment 1 – The Merced Lake High Sierra Camp Historic District would no longer convey its significance in the role it plays in recreation and education as one of seven high country camps, with origins back to the earliest days of the National Park Service. Mitigation of adverse impacts would be addressed though project-specific agreements.

Segments 2A and 2B – The Yosemite Valley Historic District's significance would be retained because the themes of outdoor recreation, tourism, and conservation, and the preservation of scenic places through their development as public parks will still be conveyed. Likewise, the Yosemite Village Historic District's significance would be retained because the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the resources of Yosemite would still be conveyed.

The Camp Curry Historic District's significance would be retained because Camp Curry would continue to be illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation that will still available in Yosemite National Park. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

For the Yosemite Lodge Historic District, its significance would no longer be conveyed as a 1950's-era motel complex nor would the Housekeeping Camp Historic District convey its significance as the closely sited, rustic cinderblock and canvas tents, and informal circulation within the camp would remain intact. The significance of the Yosemite Valley Historic Bridges District would no longer convey the unique architectural design and aesthetic considerations, use of native granite in the form of rough boulders reflecting the tenets of the Rustic style, and examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads due to the removal of the three primary stone-arch bridges of the seven within the district. Mitigation of adverse impacts would be addressed though project-specific agreements.

And finally, The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design.

Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed in that the typical Mission 66-style architecture used to create efficient, utilitarian housing; would remain continuously occupied by Yosemite staff. Other individual historic properties within El Portal and the Merced River Gorge would retain their integrity as infill development would only be in the vicinity.

Segments 5, 6, 7 and 8 – No impacts would occur within the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and the significance of the NHL and districts would

still convey the largest existing Victorian-style hotel complex within the boundaries of a national park with a high-level of integrity. The Pioneer Yosemite History Center would retain its significance as its association with the development of tourism and outdoor recreation during the Mission 66 period would be retained.

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

All River Segments

There are no additional actions in Alternative 3 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 3 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-183 describes impacts of actions intended to manage visitor use and facilities in Segment 1 under Alternative 3.

Actions to manage visitor use and facilities in Segment 1 under Alternative 3 would result in a long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-184 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternative 3.

Biological Resource Actions. Biological resource actions including the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological/Geological Processes Actions. Hydrological/Geological Processes actions to remove the historic Stoneman, Ahwahnee, and Sugar Pine Bridges (three of the seven contributing resources within the Yosemite Valley Historic Bridges District) would result in a long-term, moderate, adverse impact.

Cultural Resource Actions. Cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-185 describes impacts of actions intended to manage visitor use and facilities in Segments 2A and 2B under Alternative 3.

Curry Village. Actions in the Curry Village Area include the removal of a substantial number of contributing resources at Boys Town and ecological restoration of the area, the removal of a short segment of Southside Drive through Stoneman Meadow and the redesign of the Curry Orchard Parking Area, in

addition to the reduction of the Concession Stables operation and associated infrastructure. The removal of a substantial number of contributing resources and construction of substantial new infrastructure (16 dormitories at Huff House area) within the historic district would result in long-term, negligible to moderate, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village and Housekeeping Camp Areas include the removal of non-contributing temporary employee housing at Lost Arrow and re-establishing parking, removal of the non-contributing pool at The Ahwahnee Hotel, elimination of all visitor lodging units and services at Housekeeping Camp, the relocation of Superintendent's House (Residence 1) to the NPS lower housing area, and the redesign and consolidation of parking at the Yosemite Village Day-use Parking Area. The elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4. Actions in the Yosemite Lodge and Camp 4 Area includes the removal of a substantial amount of contributing resources within the Yosemite Lodge Historic District and would result in long-term, moderate, adverse impacts to the districts and may affect the eligibility of the Yosemite Lodge Historic District. The construction of new infrastructure (employee housing and West of Lodge Parking Area) within the historic districts would result in long-term, minor to moderate, adverse impacts.

TABLE 9-183: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 1 UNDER ALTERNATIVE 3

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 1	Actions to Manage Visitor Use and Facilities	Merced Lake High Sierra Camp Historic District	The conversion of the Merced Lake High Sierra Camp to a temporary pack camp and demolition of the infrastructure would adversely affect contributors to the Merced Lake High Sierra Camp Historic District.	The removal of all contributing resources of the Merced Lake High Sierra Camp would results in a long-term, major, adverse impact to the district.

TABLE 9-184: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 3

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resources Actions				
Segments 2A and 2B	Restore El Capitan Meadow	Yosemite Valley Historic District	Remove all non-historic informal trails from the meadow that incise, promote habitat fragmentation, or are located in sensitive and frequently inundated areas, and restore to natural condition. Use restoration fencing and signing to designate appropriate meadow access points.	Restoration of the contributing resource (meadow) would result in a long-term, beneficial impact.
Hydrological/Geological Processes Actions				
Segments 2A and 2B	Remove Stoneman, Sugar Pine and Ahwahnee Bridges	Yosemite Valley Bridges Historic District; Yosemite Valley Historic District	Removal of Stoneman, Sugar Pine and Ahwahnee Bridges and restoration to natural conditions would affect the Yosemite Valley Bridges and Yosemite Valley Historic Districts.	Removal of three of the seven contributing resources to the historic district would result in the loss of a relative substantial number of contributing resources and would result in a long-term, moderate, adverse impact to the district and the eligibility would likely need to be re-evaluated.
Cultural Resource Actions				
Segments 2A and 2B	Rehabilitation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District; Yosemite Village Historic District	Rehabilitation of the historic Superintendent's House (Residence 1) per the Secretary of the Interior's Standards for the Treatment of Historic Properties once relocated	Rehabilitation of the contributing resource would result in a long-term, beneficial impact.

TABLE 9-185: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 3

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Curry Village				
Segment 2A	Curry Orchard Parking Area and Stoneman Meadow Restoration	Yosemite Valley Historic District	Restore Stoneman Meadow including removal of 1,335 feet of Southside Drive and realignment of road through Boys Town area. Extend the meadow boardwalk through wet areas to Curry Village (up to 275 feet). Partially restore the Curry Orchard Parking Area to provide 300 parking spaces. Remove apple trees and replace with native vegetation.	The removal of a short segment of Southside Drive and the redesign of the Curry Orchard that includes the removal of trees would have a long-term, negligible, adverse impact to the district; however, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.
Segment 2A	Actions to Manage Visitor Use and Facilities	Yosemite Valley Historic District	Total would be 355 guest units, including: 290 tents in Curry Village retained; 18 units at Stoneman House retained; and 47 cabin-with-bath units in Curry Village retained. At Boys Town, remove 73 historic canvas tent cabins, re-route Southside Drive through the area and ecologically restore.	The removal of a substantial number of contributing resources within the historic district would result in long-term, moderate, adverse impacts.
Segment 2A	Huff House Employee Housing	Yosemite Valley Historic District	Eliminate the seasonal Curry Village bike and raft rental and remove the Curry Ice Rink. Construct 16 buildings (same dormitory type as Curry Village Residential Area) providing housing 164 employees	Elimination of commercial services and removal of non-contributing ice rink would result in no impact. Construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Segment 2A	Actions to Manage Visitor Use and Facilities	Yosemite Valley Historic District	Reduction of the footprint of the Curry Village Stables to provide staging for temporary pack camp operation at Merced Lake High Sierra Camp and overflow parking for campgrounds, eliminating commercial day rides, would affect a contributor to the Yosemite Valley Historic District.	The reduction in footprint and removal of a few contributing resources within the Yosemite Valley Historic District would result in a long-term, negligible, adverse impact to the district.
Yosemite Village and Housekeeping Camp				
Segment 2A	Lost Arrow Administrative Parking Area	Yosemite Valley Historic District	Re-establish an administrative parking lot with 50 spaces.	Re-establishing a parking area for a contributing resource (Lost Arrow Dormitory) would have long-term, beneficial impact to the historic district.
Segment 2A	Remove pool at The Ahwahnee Hotel	The Ahwahnee Hotel NHL; Yosemite Valley Historic District;	Retaining the existing facilities and services, but remove of the non-contributing pool.	The removal of a non-contributing resource would result in no impact to The Ahwahnee Hotel NHL.

TABLE 9-185: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 3

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 2A	Relocation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District; Yosemite Village Historic District	Relocation of the Superintendent's House (Residence 1) to the NPS housing area, demolition of the garage, and restoration of the area to natural conditions would result in an adverse impact to contributing resources.	The relocation of a contributing resource within historic districts would result in a long-term, minor, local, adverse impact.
Segment 2A	Housekeeping Camp Lodging	Housekeeping Camp Historic District (Identified but not yet evaluated)	Remove all of the lodging units. Convert Housekeeping Camp to a day use river access point and picnic area.	Elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register.
Segment 2A	Redesign the Yosemite Village Day-use Parking Area	Yosemite Valley Historic District; Yosemite Village Historic District	Move Yosemite Village Day-use Parking Area parking northward outside the 10-year floodplain and reroute Northside Drive south of the parking area. Provide a total of 550 parking places by redeveloping part of the current administrative footprint as parking.	Redesign of the non-historic parking area, realignment of a section of the contributing resources (Northside Drive) within the historic district would result in a long-term, negligible, adverse impact.
Yosemite Lodge and Camp 4				
Segment 2A	West of Yosemite Lodge: Yosemite Lodge Parking Area	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Re-develop Yosemite Lodge Parking Area to provide additional 150 day-use parking spaces. This parking area will also accommodate 15 tour buses.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Employee Housing	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Construct two new concessioner housing areas for 104 employees (26 rooms in each structure/ double occupancy). Construct 78 employee parking spaces.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Visitor Accommodations	Yosemite Lodge Historic District (Identified but not yet evaluated); Yosemite Valley Historic District	Retain 143 units. Remove 4 buildings from the 100-year floodplain and restore the floodplain.	Removal of a substantial amount of potentially eligible contributing resources of the Yosemite Lodge Historic District would result in long-term, moderate, adverse impacts to the districts and may affect the eligibility of the Yosemite Lodge Historic District.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 3 beyond those described in actions common to Alternatives 2 – 6 for Segments 3 and 4.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-186 describes impacts of actions intended to manage visitor use and facilities in Segments 3 and 4 under Alternative 3.

Actions to manage visitor use and facilities values in Segments 3 and 4 under Alternative 3 would result in no impact.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 3 beyond those described in actions common to Alternatives 2 – 6 for Segments 5, 6, 7 and 8.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-187 describes impacts of actions intended to manage visitor use and facilities in Segments 5, 6, 7, and 8 under Alternative 3.

Actions in Wawona include the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

TABLE 9-186: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVE 3

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Abbieville / Trailer Village Employee Housing	Hennessey's Ranch (Identified but not evaluated)	Also, continue to provide for housing land use for 40 employees and volunteers at this location.	No impact.
Segment 4	Abbieville / Trailer Village Visitor Parking	Hennessey's Ranch (Identified but not evaluated)	No new day-use parking spaces added at the Abbieville/Trailer Village area.	No impact.

TABLE 9-187: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 5, 6, 7, AND 8 UNDER ALTERNATIVE 3

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 7	Elimination of commercial day rides form the Wawona Stables	Pioneer Yosemite History Center Historic District (Eligible 2011)	Eliminate the stables operation and day rides. Relocate the Wawona stock use campground (2 sites) to this area.	The retention of a contributing resource, but elimination of the service, would result in no impact to the historic district.

Summary of Impacts from Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration and Actions Common to Alternatives 2 – 6

Biological resource actions such as the removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological / Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact.

Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Merced Lake High Sierra Camp – Actions at the Merced Lake High Sierra Camp include the removal of all contributing resources of the Merced Lake High Sierra Camp would results in a long-term, major, adverse impact to the district.

Curry Village – Actions in the Curry Village Area include the removal of a substantial number of contributing resources and construction of substantial new infrastructure (16 dormitories at Huff House area) within the historic district would result in long-term, negligible to moderate, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp – Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Additionally, the elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4 Campgrounds –The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, removal of a substantial amount of contributing resources within the Yosemite Lodge Historic District and would result in long-term, moderate, adverse impacts to the districts and may affect the eligibility of the Yosemite Lodge Historic District and the construction of new infrastructure (employee housing and West of Lodge Parking Area) within the historic districts would result in long-term, minor to moderate, adverse impacts.

El Portal – Actions to provide additional infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additional actions to manage visitor use and facilities values in Segments 3 and 4 under Alternative 3 would result in no impacts.

Wawona – Actions in Wawona to relocate the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in a long-term, beneficial impacts. Additionally, the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

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

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The Final Tuolumne River Plan/EIS calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for within historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management / access.

Overall Cumulative Impact of Alternative 3

Segment 1 – The Merced Lake High Sierra Camp Historic District's significance would be retained because recreation and education in one of seven high country camps, with origins back to the earliest days of the National Park Service will still be conveyed. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

Segments 2A and 2B – The Yosemite Valley Historic District's significance would be retained because the themes of outdoor recreation, tourism, and conservation, and the preservation of scenic places through their development as public parks will still be conveyed. Likewise, the Yosemite Village Historic District's significance would be retained because the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the resources of Yosemite would still be conveyed.

The Camp Curry Historic District's significance would be retained because Camp Curry would continue to be illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation that will still available in Yosemite National Park. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

For the Yosemite Lodge Historic District, its significance would still be conveyed as the 1950's era motel complex; however, the significance of Housekeeping Camp Historic District would no longer be conveyed as the closely sited, rustic cinderblock and canvas tents, and informal circulation within the camp would remain intact.

The significance of the Yosemite Valley Historic Bridges District would no longer convey the unique architectural design and aesthetic considerations, use of native granite in the form of rough boulders reflecting the tenets of the Rustic style, and examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads due to the removal of the three primary stone-arch bridges of the seven within the district. Mitigation of adverse impacts would be addressed though project-specific agreements.

And finally, The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design.

Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed in that the typical Mission 66-style architecture used to create efficient, utilitarian housing; would remain continuously occupied by Yosemite staff. Other individual historic properties within El Portal and the Merced River Gorge would retain their integrity as infill development would only be in the vicinity.

Segments 5, 6, 7 and 8 – No impacts would occur within the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and the significance of the NHL and districts would still convey the largest existing Victorian-style hotel complex within the boundaries of a national park with a high-level of integrity. The Pioneer Yosemite History Center would retain its significance as its association

with the development of tourism and outdoor recreation during the Mission 66 period would be retained.

Environmental Consequences of Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

All River Segments

There are no additional actions in Alternative 4 beyond those described in actions common to Alternatives 2 – 6 for all river segments.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 4 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-188 describes impacts of actions intended to manage visitor use and facilities in Segment 1 under Alternative 4.

Actions to manage visitor use and facilities in Segment 1 under Alternative 3 would result in a long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-189 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternative 4.

Biological Resource Actions. Biological resource actions including the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological/Geological Processes Actions. Hydrological/Geological Processes actions to remove the historic Stoneman, Ahwahnee, and Sugar Pine Bridges (three of the seven contributing resources within the Yosemite Valley Historic Bridges District) would result in a long-term, moderate, adverse impact.

Cultural Resource Actions. Cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-190 describes impacts of actions intended to manage visitor use and facilities in Segments 2A and 2B under Alternative 4.

Curry Village. Actions in the Curry Village Area include the removal of a substantial number of contributing resources at Boys Town and conversion of the area to a campground, the removal of a short segment of Southside Drive through Stoneman Meadow and the redesign of the Curry Orchard Parking Area. The removal of a substantial number of contributing resources and construction of new minimal and substantial infrastructure (campground and 16 dormitories at Huff House area) within the historic district

would result in long-term, negligible to moderate, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village and Housekeeping Camp Areas include the removal of non-contributing temporary employee housing at Lost Arrow and re-establishing parking, removal of the non-contributing pool at The Ahwahnee Hotel, removal of a substantial number of lodging units and services at Housekeeping Camp, the relocation of Superintendent's House (Residence 1) to the NPS lower housing area, and the redesign and consolidation of parking at the Yosemite Village Day-use Parking Area. The removal of a substantial number of contributing resources at Housekeeping Camp would result in a long-term, moderate, adverse impact and may affect the eligibility of the district. The removal of non-contributing resources (temporary housing) would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4. Actions in the Yosemite Lodge and Camp 4 Area includes the retention of all existing lodging units removal of a substantial amount of contributing resources within the Yosemite Lodge Historic District and would result impact to the districts. The construction of new infrastructure (employee housing and West of Lodge Parking Area) within the historic districts would result in long-term, minor to moderate, adverse impacts.

TABLE 9-188: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 1 UNDER ALTERNATIVE 4

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 1	Actions to Manage Visitor Use and Facilities	Merced Lake High Sierra Camp Historic District	Removal of the Merced Lake High Sierra Camp and conversion of the area to designated wilderness. This would result in the loss of the Merced Lake High Sierra Camp Historic District.	Elimination of the Merced Lake High Sierra Camp Historic District would result in a major, long-term, adverse impact to the district and result in it no longer being eligible for listing on the National Register.

TABLE 9-189: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 4

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resource Actions				
Segments 2A and 2B	Restore El Capitan Meadow	Yosemite Valley Historic District	Remove all non-historic informal trails from the meadow that incise, promote habitat fragmentation, or are located in sensitive and frequently inundated areas, and restore to natural condition. Use restoration fencing along northern perimeter of meadow and designate appropriate access points using boardwalks and viewing platforms.	Restoration of the contributing resource (meadow) would result in a long-term, beneficial impact.
Hydrological/Geological Processes Actions				
Segments 2A and 2B	Remove Sugar Pine and Ahwahnee Bridges, retain Stoneman Bridge	Yosemite Valley Bridges Historic District, Yosemite Valley Historic District	Stoneman Bridge would remain with installation of large wood in river channel and additional culverts under Northside Drive. Remove Sugar Pine and Ahwahnee Bridges and the berm that connects them. Impact to contributing resources of the Yosemite Valley Bridges and Yosemite Valley Historic Districts.	Removal of three of the seven contributing resources to the historic district would result in the loss of a relative substantial number of contributing resources and would result in a long-term, moderate, adverse impact to the district and the eligibility would likely need to be re-evaluated.
Cultural Resource Actions				
Segments 2A and 2B	Rehabilitation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District; Yosemite Village Historic District	Rehabilitation of the historic Superintendent's House (Residence 1) per the Secretary of the Interior's Standards for the Treatment of Historic Properties once relocated	Rehabilitation of the contributing resource would result in a long-term, beneficial impact.

TABLE 9-190: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 4

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Curry Village				
Segment 2A	Curry Orchard Parking Area and Stoneman Meadow Restoration	Yosemite Valley Historic District	Restore Stoneman Meadow including removal of 1,335 feet of Southside Drive and realignment of road through Boys Town area. Extend the meadow boardwalk through wet areas to Curry Village (up to 275 feet). Partially restore the Curry Orchard Parking Area to provide 300 parking spaces. Remove apple trees and replace with native vegetation.	The removal of a short segment of Southside Drive and the redesign of the Curry Orchard that includes the removal of trees would have a long-term, negligible, adverse impact to the district; however, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.
Segment 2A	Curry Village Lodging	Yosemite Valley Historic District	Total would be 355 guest units, including: 290 tents in Curry Village retained; 18 units at Stoneman House retained; and 47 cabin-with-bath units in Curry Village retained. At Boys Town, Southside Drive would be re-routed and a 40-site campground would be constructed.	The removal of a portion of contributing resources and the construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Segment 2A	Huff House Employee Housing	Yosemite Valley Historic District	Eliminate the seasonal Curry Village bike and raft rental and remove the Curry Ice Rink. Construct 16 buildings (same dormitory type as Curry Village Residential Area) providing housing 164 employees.	Elimination of commercial services and removal of non-contributing ice rink would result in no impact. Construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Yosemite Village and Housekeeping Camp				
Segment 2A	Lost Arrow Employee Housing	Yosemite Valley Historic District	Replace temporary employee housing facilities with permanent housing facilities for 50 beds.	The construction of substantial new infrastructure within the historic district would result in a long-term, moderate, adverse impact
Segment 2A	Remove pool at The Ahwahnee Hotel	The Ahwahnee Hotel NHL; Yosemite Valley Historic District;	Retaining the existing facilities and services, but remove of the non-contributing pool.	The removal of a non-contributing resource would result in no impact to The Ahwahnee Hotel NHL.
Segment 2A	Redesign the Yosemite Village Day-use Parking Area; Re-route Northside Drive; Address intersections	Yosemite Valley Historic District; Yosemite Village Historic District	Move Yosemite Village Day-use Parking Area northward 150 feet away from the river and reroute Northside Drive south of the parking area. Provide a total of 750 parking places by redeveloping part of the current administrative footprint as parking. Re-align intersection of Northside Drive/Village Drive to meet standards for a proper four-way intersection. Provide two-way access road from Sentinel Drive as primary entrance to parking area.	Redesign of the non-historic parking area, realignment of a section of the contributing resources (Northside Drive) and minimal new infrastructure (intersection realignments) within the historic district would result in a long-term, minor, adverse impact.

TABLE 9-190: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 2 UNDER ALTERNATIVE 4

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 2A	Housekeeping Camp Lodging	Housekeeping Camp Historic District (Identified but not yet evaluated)	Demolition of 166 lodging units from the ordinary high water mark at Housekeeping Camp would potentially affect a historic resource.	The removal of a substantial number of contributing resources would result in a long-term, moderate, adverse impact and may affect the eligibility of the district.
Yosemite Lodge and Camp 4				
Segment 2A	West of Yosemite Lodge: Yosemite Lodge Parking Area	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Re-develop Yosemite Lodge Parking Area to provide additional 150 day-use parking spaces. This parking area will also accommodate 15 tour buses. Construct 20 RV sites (west of parking).	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Employee Housing	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Construct two new concessioner housing areas for 104 employees (26 rooms in each structure/ double occupancy). Construct 78 employee parking spaces.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Visitor Accommodations	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Retain the existing 245 units.	Retaining the current number of lodging units would have no impact on either contributing resources or the historic districts.
Segment 2A	Pedestrian / vehicle conflicts on Northside Drive	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area.	A tiered NEPA / NHPA compliance effort will evaluate a range of alternatives to address the pedestrian / vehicle conflicts and traffic congestion at this intersection. The grade-separated crossing that is selected will include design guidelines to ensure that archeological impacts are avoided or minimized, the safety of pedestrians is maximized, and visual impacts are minimized. If determined eligible, impacts to the Yosemite Lodge (identified but not yet evaluated) and Yosemite Valley Historic District would be local, negligible to minor, long-term, and adverse.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 4 beyond those described in actions common to Alternatives 2 – 6 for Segments 3 and 4.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-191 describes impacts of actions intended to manage visitor use and facilities in Segments 3 and 4 under Alternative 4.

Actions in El Portal include construction of an El Portal remote Parking Area in the Abbieville / Trailer Village area and would result in long-term, moderate, adverse impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 4 beyond those described in actions common to Alternatives 2 – 6 for Segments 5, 6, 7 and 8.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-192 describes impacts of actions intended to manage visitor use and facilities in Segments 5, 6, 7, and 8 under Alternative 4.

Actions in Wawona include the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

Summary of Impacts from Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration and Actions Common to Alternatives 2 – 6

Biological resource actions such as the removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological / Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact.

Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Merced Lake High Sierra Camp – Actions at the Merced Lake High Sierra Camp include the removal of all contributing resources of the Merced Lake High Sierra Camp would results in a long-term, major, adverse impact to the district.

Curry Village – Actions in the Curry Village Area include the removal of a substantial number of contributing resources (Boys Town canvas tents) and construction of new minimal and substantial infrastructure (campground and 16 new dormitories at Huff House area) within the historic district would result in long-term, negligible to moderate, adverse impacts. However, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.

Yosemite Village and Housekeeping Camp – Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Additionally, the removal of a substantial number of contributing resources at Housekeeping Camp would result in a long-term, moderate, adverse impact and may affect the eligibility of the district. The removal of non-contributing resources (temporary housing) would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts.

Yosemite Lodge and Camp 4 Campgrounds –The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, retaining the current number of lodging units would have no impact and the construction of a new parking area and employee housing within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.

El Portal – Actions to provide additional infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additionally, construction of an El Portal remote Parking Area in the Abbieville / Trailer Village area would result in long-term, moderate, adverse impacts.

Wawona – Actions in Wawona to relocate the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in a long-term, beneficial impacts. Additionally, the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

Cumulative Impacts from Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The Final Tuolumne River Plan/EIS calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for within historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management / access.

Overall Cumulative Impact of Alternative 4

Segment 1 – The Merced Lake High Sierra Camp Historic District would no longer convey its significance in the role it plays in recreation and education s one of seven high country camps, with origins back to the earliest days of the National Park Service will still be conveyed. Mitigation of adverse impacts would be addressed though project-specific agreements.

Segments 2A and 2B – The Yosemite Valley Historic District's significance would be retained because the themes of outdoor recreation, tourism, and conservation, and the preservation of scenic places through their development as public parks will still be conveyed. Likewise, the Yosemite Village Historic District's significance would be retained because the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the

resources of Yosemite would still be conveyed.

The Camp Curry Historic District's significance would be retained because Camp Curry would continue to be illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation that will still available in Yosemite National Park. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

For the Yosemite Lodge Historic District, its significance would still be conveyed as the 1950's era motel complex and the Housekeeping Camp Historic District would convey its significance as the closely sited, rustic cinderblock and canvas tents, and informal circulation within the camp would remain intact.

The significance of the Yosemite Valley Historic Bridges District would no longer convey the unique architectural design and aesthetic considerations, use of native granite in the form of rough boulders reflecting the tenets of the Rustic style, and examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads due to the removal of the three primary stone-arch bridges of the seven within the district. Mitigation of adverse impacts would be addressed though project-specific agreements.

And finally, The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design.

Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed in that the typical Mission 66-style architecture used to create efficient, utilitarian housing; would remain continuously occupied by Yosemite staff. Other individual historic properties within El Portal and the Merced River Gorge would retain their integrity as infill development would only be in the vicinity.

Segments 5, 6, 7 and 8 – No impacts would occur within the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and the significance of the NHL and districts would still convey the largest existing Victorian-style hotel complex within the boundaries of a national park with a high-level of integrity. The Pioneer Yosemite History Center would retain its significance as its association with the development of tourism and outdoor recreation during the Mission 66 period would be retained.

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TABLE 9-191: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVE 4

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Abbieville / Trailer Village Employee Housing	Hennessey's Ranch (Identified but not evaluated)	Continue to provide for housing land use for 40 employees and volunteers at this location.	No impact.
Segment 4	Abbieville / Trailer Village Visitor Parking	Hennessey's Ranch (Identified but not evaluated)	Develop El Portal Remote Day-use Visitor Parking Area at the Abbieville/Trailer Village area to provide 200 spaces of visitor parking serviced by regional transit.	Construction of substantial new infrastructure resulting in the redevelopment of a contributing resource would result in long-term, moderate, adverse impacts.

TABLE 9-192: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 5, 6, 7 AND 8 UNDER ALTERNATIVE 4

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 7	Elimination of commercial day rides form the Wawona Stables	Pioneer Yosemite History Center Historic District (Eligible 2011)	Eliminate the stables operation and day rides. Relocate the Wawona stock use campground (2 sites) to this area.	The retention of a contributing resource, but elimination of the service, would result in no impact to the historic district.

Environmental Consequences of Alternative 5: Enhanced Visitor Experiences and Essential River Bank Restoration

All River Segments

There are no additional actions in Alternative 5 beyond those described in actions common to Alternatives 2 – 6 for all river segments.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 5 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-193 describes impacts of actions intended to manage visitor use and facilities in Segment 1 under Alternative 5.

Actions to manage visitor use and facilities in Segment 1 under Alternative 5 would result in the loss of 11 of the 22 historic tent cabins; the 11 tent pads would remain in situ and the existing configuration of the remaining 11 historic canvas tents. The removal of a substantial portion of contributing resources within the Merced Lake High Sierra Camp Historic District would result in a long-term, moderate, adverse impact.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-194 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternative 5.

Biological Resource Actions. Biological resource actions including the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological/Geological Processes Actions. Hydrological/Geological Processes actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conduct further studies and identify mitigation measures for success would result in no impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-195 describes impacts of actions intended to manage visitor use and facilities in Segments 2A and 2B under Alternative 5.

Curry Village. Actions in the Curry Village Area include the removal of a portion number of contributing resources at Boys Town and the construction of 52 new hard-sided units, the redesign of the Curry Orchard Parking Area. The removal of a portion of contributing resources coupled with substantial new infrastructure (lodging at Boys Town and redesigned parking area at Huff House), and the redesign of a contributing resource (Curry Orchard) would result in long-term, negligible to moderate, adverse impacts.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village and Housekeeping Camp Areas include the removal of non-contributing temporary employee housing at Lost Arrow and construction of a new employee dormitory, removal of a minimal number of lodging units at Housekeeping Camp, removal of Superintendent's House (Residence 1), and the redesign and consolidation of parking at the Yosemite Village Day-use Parking Area. The removal of a minimal number of contributing resources at Housekeeping Camp and Residence 1 would result in long-term, minor, adverse impacts. The removal of non-contributing resources (temporary housing) would result in no impacts and the construction of a new infrastructure (employee housing) would result in long-term, moderate, adverse impacts. The redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and minimal new infrastructure (traffic circle) within the historic district would result in a long-term, minor, adverse impact.

Yosemite Lodge and Camp 4. Actions in the Yosemite Lodge and Camp 4 Area includes the retention of all existing lodging and would result impact. The construction of new infrastructure (employee housing and West of Lodge Parking Area) within the historic districts would result in long-term, minor to moderate, adverse impacts.

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TABLE 9-193: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENT 1 UNDER ALTERNATIVE 5

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 1	Actions to Manage Visitor Use and Facilities	Merced Lake High Sierra Camp Historic District	The reduction of the number of beds at the Merced Lake High Sierra Camp to 11 units (of an original 22) while retaining the historic tent pads and historic configuration, would adversely affect the Merced Lake High Sierra Camp Historic District.	The removal of a substantial portion of contributing resources within the Merced Lake High Sierra Camp Historic District would result in a long-term, moderate, adverse impact.

TABLE 9-194: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 5

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resource Actions				
Segments 2A and 2B	Restore El Capitan Meadow	Yosemite Valley Historic District	Remove all non-historic informal trails from the meadow that incise, promote habitat fragmentation, or are located in sensitive and frequently inundated areas, and restore to natural condition. Use restoration fencing along northern perimeter of meadow and designate appropriate access points using boardwalks and viewing platforms. Selectively remove mature conifers that block views of El Capitan from the roadside.	Restoration of the contributing resource (meadow) would result in a long-term, beneficial impact.
Hydrological/Geological Processes Resource Actions				
Segments 2A and 2B	Retain Stoneman, Sugar Pine and Ahwahnee Bridges	Yosemite Valley Bridges Historic District; Yosemite Valley Historic District	Retain Stoneman, Sugar Pine and Ahwahnee Bridges; address localized hydrologic impacts through engineered log jams and riverbank restoration. Conduct further studies and identify mitigation measures for success.	No impact.

TABLE 9-195: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 5

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Curry Village				
Segment 2A	Actions to Manage Visitor Use and Facilities	Yosemite Valley Historic District	Removal of 23 historic canvas tent cabins, 14 non-historic without bath units and the construction of 52 new with bath units at Boys Town result in alteration to the setting of the Yosemite Valley Historic District.	The removal of a portion of contributing resources and the construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Segment 2A	Curry Orchard Parking Area and Stoneman Meadow Restoration	Yosemite Valley Historic District	Mitigate effects of Southside Drive through Stoneman Meadow with culverts or other engineered solutions that allow passage of underground water. Remove roadside parking and restore the area to meadow conditions. Formalize the Curry Orchard Parking Area to have 415 parking spaces. Remove apple trees and replace with native vegetation.	The redesign of the Curry Orchard that includes the removal of trees would have a long-term, negligible, adverse impact to the district; however, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.
Segment 2A	Huff House Employee Housing	Yosemite Valley Historic District	Relocate the seasonal Curry Village bike and raft rental operation to outside the river corridor. Relocate Curry Ice Rink to its historic location in Curry Village outside the river corridor. Retain the historic Huff House (4 beds) and an additional 10 tent cabins (20 beds) for a total of 24 beds for employee housing. Establish parking for 189 for visitor day-use and commuting employees at the Curry Village Day-use Parking Area.	Relocation of commercial services and the non-contributing ice rink would result in no impact. Retention of contributing resources would result in no impact.
Yosemite Village and Housekeeping Camp				
Segment 2A	Lost Arrow Employee Housing	Yosemite Valley Historic District	Replace temporary employee housing facilities with permanent housing facilities for 87 beds at this location.	The construction of substantial new infrastructure within the historic district would result in a long-term, moderate, adverse impact
Segment 2A	Remove Superintendent's House (Residence 1) and Garage	Yosemite Valley Historic District; Yosemite Village Historic District	Removal of the Superintendent's House (Residence 1) and Garage and restoration of the area to natural conditions would result in the loss of a contributing resource to the Yosemite Valley and Yosemite Village Historic Districts.	The removal of a contributing resource to both the Yosemite Valley and Yosemite Village Historic Districts would result in a long-term, minor, adverse impact.
Segment 2A	Redesign the Yosemite Village Day-use Parking Area; Re-route Northside Drive; Address intersections	Yosemite Valley Historic District; Yosemite Village Historic District	Move Yosemite Village Day-use Parking Area northward 150 feet away from the river and reroute Northside Drive south of the parking area. Provide a total of 750 parking places by redeveloping part of the current administrative footprint as parking. Construct a traffic circle at Northside Drive/Village Drive. Add a three-way intersection at Sentinel Drive and the entrance to the parking area.	Redesign of the non-historic parking area, realignment of a section of the contributing resources (Northside Drive) and minimal new infrastructure (traffic circle) within the historic district would result in a long-term, minor, adverse impact.

TABLE 9-195: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 5

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Segment 2A	Housekeeping Camp Lodging	Housekeeping Camp Historic District (Identified but not evaluated); Yosemite Valley Historic District	Remove 34 lodging units and redesign out of the ordinary high water mark. Retain a total of 232 lodging units.	Removal of a minimal number of contributing resources within the historic district would result in long-term, minor, adverse impacts.
Yosemite Lodge and Camp 4				
Segment 2A	West of Yosemite Lodge: Yosemite Lodge Parking Area	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Re-develop Yosemite Lodge Day-use Parking Area to provide additional 300 day-use parking spaces. This parking area will also accommodate 22 tour buses within proposed development footprint. Buses staying for 4 – 6 hours will park in the 22 designated bus parking spaces in the West of Lodge Parking Area.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Employee Housing	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Construct two new concessioner housing areas for 104 employees (26 rooms in each structure/ double occupancy). Construct 78 employee parking spaces.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Visitor Accommodations	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Retain the existing 245 units.	Retaining the current number of lodging units would have no impact
Segment 2A	Actions to Manage Visitor Use and Facilities	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District	Address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area.	A tiered NEPA / NHPA compliance effort will evaluate a range of alternatives to address the pedestrian / vehicle conflicts and traffic congestion at this intersection. The grade-separated crossing that is selected will include design guidelines to ensure that archeological impacts are avoided or minimized, the safety of pedestrians is maximized, and visual impacts are minimized. If determined eligible, impacts to the Yosemite Lodge (identified but not yet evaluated) and Yosemite Valley Historic District would be local, negligible to minor, long-term, and adverse.

TABLE 9-196: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVE 5

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Abbieville / Trailer Village Employee Housing	Hennessey's Ranch (Identified but not evaluated)	Assign 40 of the existing RV-campsites to be used for the public and administrative use (seasonal employee housing).	No impact.
Segment 4	Abbieville / Trailer Village Visitor Parking	Hennessey's Ranch (Identified but not evaluated)	Develop El Portal Remote Visitor Parking Area in the Abbieville/Trailer Village area to provide 300 spaces (within proposed development footprint) of visitor parking serviced by shuttle to Yosemite Valley (seasonally available).	Construction of substantial new infrastructure resulting in the redevelopment of a contributing resource would result in long-term, moderate, adverse impacts.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 5 beyond those described in actions common to Alternatives 2 – 6 for Segments 3 and 4.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-196 describes impacts of actions intended to manage visitor use and facilities in Segments 3 and 4 under Alternative 5.

Actions in El Portal include construction of an El Portal Remote Parking Area in the Abbieville/Trailer Village area and would result in long-term, moderate, adverse impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 4 beyond those described in actions common to Alternatives 2 – 6 for Segments 5, 6, 7 and 8.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Actions to manage visitor use and facilities values in Segments 5, 6, 7 and 8under Alternative 5 would result in no impacts.

Summary of Impacts from Alternative 5: Enhanced Visitor Experiences and Essential River Bank Restoration and Actions Common to Alternatives 2 – 6

Biological resource actions such as the removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological / Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conducting further studies and identify mitigation measures for success would result in no impact.

Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource.

Merced Lake High Sierra Camp – Actions at the Merced Lake High Sierra Camp include the removal of a substantial portion of contributing resources within the Merced Lake High Sierra Camp Historic District and would result in a long-term, moderate, adverse impact.

Curry Village – Actions in the Curry Village Area include the removal of a portion of contributing resources coupled with substantial new infrastructure (lodging at Boys Town and redesigned parking area at Huff

House), and the redesign of a contributing resource (Curry Orchard) would result in long-term, negligible to moderate, adverse impacts.

Yosemite Village and Housekeeping Camp – Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Additionally, the removal of a minimal number of contributing resources at Housekeeping Camp and Residence 1 would result in long-term, minor, adverse impacts. The removal of non-contributing resources (temporary housing) would result in no impacts, and redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and minimal new infrastructure (traffic circle) within the historic district would result in a long-term, minor, adverse impact.

Yosemite Lodge and Camp 4 Campgrounds –The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, retaining the current number of lodging units would have no impact and the construction of a new parking area and employee housing within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.

El Portal – Actions to provide additional infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additionally, construction of an El Portal remote Parking Area in the Abbieville / Trailer Village area would result in long-term, moderate, adverse impacts.

Wawona – Actions in Wawona to relocate the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in a long-term, beneficial impacts. Additionally, the retention of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to the NPS Maintenance Area would result no impact to the Pioneer Yosemite History Center Historic District.

Cumulative Impacts from Alternative 5: Enhanced Visitor Experiences and Essential River Bank Restoration

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would

result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The *Final Tuolumne River Plan/EIS* calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for with historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management / access.

Overall Cumulative Impact of Alternative 5

Segment 1 – The Merced Lake High Sierra Camp Historic District's significance would be retained because recreation and education in one of seven high country camps, with origins back to the earliest days of the National Park Service will still be conveyed. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

Segments 2A and 2B – The Yosemite Valley Historic District's significance would be retained because the themes of outdoor recreation, tourism, and conservation, and the preservation of scenic places through their development as public parks will still be conveyed. Likewise, the Yosemite Village Historic District's significance would be retained because the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the resources of Yosemite would still be conveyed.

The Camp Curry Historic District's significance would be retained because Camp Curry would continue to be illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation that will still available in Yosemite National Park. Minimization and mitigation of adverse effects would be addressed though project-specific agreements. For the Yosemite Lodge Historic District, its significance would still be conveyed as the 1950's era motel complex and the Housekeeping Camp Historic District would convey its significance as the closely sited, rustic cinderblock and canvas tents, and informal circulation within the camp would remain intact.

The significance of the Yosemite Valley Historic Bridges District would still convey the unique architectural

design and aesthetic considerations, use of native granite in the form of rough boulders reflecting the tenets of the Rustic style, and examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads. And finally, The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design.

Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed in that the typical Mission 66-style architecture used to create efficient, utilitarian housing; would remain continuously occupied by Yosemite staff. Other individual historic properties within El Portal and the Merced River Gorge would retain their integrity as infill development would only be in the vicinity.

Segments 5, 6, 7 and 8 – No impacts would occur within the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and the significance of the NHL and districts would still convey the largest existing Victorian-style hotel complex within the boundaries of a national park with a high-level of integrity. The Pioneer Yosemite History Center would retain its significance as its association with the development of tourism and outdoor recreation during the Mission 66 period would be retained.

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

All River Segments

There are no additional actions in Alternative 6 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 6 beyond those described in actions common to Alternatives 2 – 6 for Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Actions to manage visitor use and facilities values in Segment 1 under Alternative 6 would result in no impact.

Segments 2A and 2B: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Table 9-197 describes impacts of actions intended to protect and enhance river values in Segments 2A and 2B under Alternative 6.

Biological Resource Actions. Biological resource actions including the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological/Geological Processes Actions. Hydrological/Geological Processes actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conduct further studies and identify mitigation measures for success would result in no impact.

Cultural Resource Actions. Cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-198 describes impacts of actions intended to manage visitor use and facilities in Segments 2A and 2B under Alternative 6.

Curry Village. Actions in the Curry Village Area include the removal of a substantial number of contributing resources at Boys Town and the construction of 98 new hard-sided units, the redesign of the Curry Orchard Parking Area, and the construction of 16 new dormitories in the Huff House area. The removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging units and employee dormitory at Huff House), and redesign of a contributing resource (Curry Orchard) within the historic district would result in long-term, moderate to major, adverse impacts.

Yosemite Village and Housekeeping Camp. Actions in the Yosemite Village and Housekeeping Camp Areas include the removal of non-contributing temporary employee housing at Lost Arrow and construction of a new employee dormitory, removal of a minimal number of lodging units at Housekeeping Camp, retention of Superintendent's House (Residence 1), and the redesign and consolidation of parking at the Yosemite Village Day-use Parking Area. The removal of a minimal number of contributing resources at Housekeeping Camp would result in long-term, minor, adverse impacts. The retention and rehabilitation of Residence 1 would result in no impact. The removal of non-contributing resources (temporary housing) would result in no impacts and the construction of a new infrastructure (employee housing at Lost Arrow) would result in long-term, moderate, adverse impacts. The redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and substantial new infrastructure (roundabout and pedestrian underpass) within the historic district would result in a long-term, moderate, adverse impact.

Yosemite Lodge and Camp 4. Actions in the Yosemite Lodge and Camp 4 Area includes retention of all existing lodging units and would result in no impact. The construction of new infrastructure (employee housing, additional lodging units, and West of Lodge Parking Area) within the historic districts would result in long-term, moderate, adverse impacts.

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TABLE 9-197: IMPACTS OF ACTIONS INTENDED TO PROTECT AND ENHANCE RIVER VALUES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Biological Resource Actions				
Segments 2A and 2B	Restore El Capitan Meadow	Yosemite Valley Historic District	Restore all non-historic informal trails to the meadow. Use restoration fencing to prohibit all foot traffic into meadow, including the southern perimeter, and designate all meadow access using boardwalks and viewing platforms. Selectively remove mature conifers that block views of El Capitan from the roadside.	Restoration of the contributing resource (meadow) would result in a long-term, beneficial impact.
Hydrologic/Geologic Resource Actions				
Segments 2A and 2B	Retain Stoneman, Sugar Pine and Ahwahnee Bridges	Yosemite Valley Bridges Historic District; Yosemite Valley Historic District	Retain Stoneman, Sugar Pine and Ahwahnee Bridges; address localized hydrologic impacts through engineered log jams and riverbank restoration. Conduct further studies and identify mitigation measures for success.	No impact.
Cultural Resource Actions				
Segments 2A and 2B	Rehabilitation of the Superintendent's House (Residence 1)	Yosemite Valley Historic District (2004001159); Yosemite Village Historic District	Rehabilitation of the historic Superintendent's House (Residence 1) per the Secretary of the Interior's Standards for the Treatment of Historic Properties.	Rehabilitation of the contributing resource would result in a long-term, beneficial impact.

TABLE 9-198: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Curry Village				
Segment 2A	Curry Village Lodging	Yosemite Valley Historic District	Total would be 453 guest units, including: 290 tents in Curry Village retained; remove 73 historic canvas tents and non-historic cabins without baths and construct 98 hard-sided units in Boys Town; 18 units at Stoneman House retained; and 47 cabin-with-bath units in Curry Village retained.	The removal of a substantial number of contributing resources and the construction of substantial new infrastructure within the historic district would result in long-term, major, adverse impacts.
Segment 2A	Curry Orchard Parking Area and Stoneman Meadow Restoration	Yosemite Valley Historic District	Mitigate effects of Southside Drive through Stoneman Meadow with culverts or other engineered solutions that allow passage of underground water. Remove roadside parking and restore the area to meadow conditions. Formalize the Curry Orchard Parking Area to have 430 parking spaces. Remove apple trees and replace with native vegetation.	The redesign of the Curry Orchard that includes the removal of trees would have a long-term, negligible, adverse impact to the district; however, restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district.
Segment 2A	Huff House Employee Housing	Yosemite Valley Historic District	Relocate the seasonal Curry Village bike and raft rental operation to outside the river corridor. Relocate Curry Ice Rink to its historic location in Curry Village outside the river corridor. Redesign the area and construct 16 buildings (same dormitory type as Curry Village Residential Area) providing housing 164 employees.	Relocation of commercial services and the non-contributing ice rink would result in no impact. Construction of substantial new infrastructure within the historic district would result in long-term, moderate, adverse impacts.
Yosemite Village and Housekeeping Camp				
Segment 2A	Lost Arrow Employee Housing	Yosemite Valley Historic District	Replace temporary employee housing facilities with permanent housing facilities for 50 beds at this location.	The construction of substantial new infrastructure within the historic district would result in a long-term, moderate, adverse impact
Segment 2A	Redesign the Yosemite Village Day-use Parking Area; Re-route Northside Drive; address intersections and pedestrian/vehicle conflicts	Yosemite Valley Historic District; Yosemite Village Historic District	Move Yosemite Village Day-use Parking Area northward 150 feet away from the river and reroute Northside Drive south of the parking area. Provide a total of 850 parking places by redeveloping part of the current administrative footprint as parking. Construct a pedestrian underpass and a roundabout at the Northside Drive/ Village Drive. Add a three-way intersection at Sentinel Drive and the entrance of parking area. Construct roundabout at the Sentinel Drive/Northside Drive intersection (bank 3-way).	Redesign of the non-historic parking area, realignment of a section of the contributing resources (Northside Drive) and substantial new infrastructure (roundabout and pedestrian underpass) within the historic district would result in a long-term, moderate, adverse impact.
Segment 2A	Housekeeping Camp Lodging	Housekeeping Camp Historic District (Identified but not evaluated); Yosemite Valley Historic District	Remove 34 lodging units and redesign out of the ordinary high water mark. Retain a total of 232 lodging units.	Removal of a minimal number of contributing resources within the historic district would result in long-term, minor, adverse impacts.

TABLE 9-198: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 2A AND 2B UNDER ALTERNATIVE 6

Segment	Action Type	National Register Listed or Eligible Property	Action and Impact to Resource	Analysis under NEPA
Yosemite Lodge and Camp 4				
Segment 2A	West of Yosemite Lodge: Yosemite Lodge Parking Area	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District (2004001159)	Re-develop Yosemite Lodge Day-use Parking Area to provide additional 300 day-use parking spaces. This parking area will also accommodate 15 tour buses. Construct 20 RV sites (west of parking).	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Employee Housing	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District (2004001159)	Remove non-historic temporary housing at Highland Court and the historic Thousands Cabins. Construct two new concessioner housing areas for 104 employees (26 rooms in each structure/ double occupancy). Construct 78 employee parking spaces.	The construction of new infrastructure within the historic districts would result in long-term, minor to moderate, adverse impacts.
Segment 2A	Yosemite Lodge Visitor Accommodations	Yosemite Lodge Historic District (Identified but not evaluated); Yosemite Valley Historic District (2004001159)	Construct new 3 story-lodging structure(s) with the pre-flood number of 440 units (redesign Yosemite Lodge out of the 100-year floodplain).	The construction of substantial new infrastructure within the historic districts would result in long-term, moderate, adverse impacts
Segment 2A	Actions to Manage Visitor Use and Facilities	Yosemite Valley Historic District	Address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area.	A tiered NEPA / NHPA compliance effort will evaluate a range of alternatives to address the pedestrian / vehicle conflicts and traffic congestion at this intersection. The grade-separated crossing that is selected will include design guidelines to ensure that archeological impacts are avoided or minimized, the safety of pedestrians is maximized, and visual impacts are minimized.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 6 beyond those described in actions common to Alternatives 2 – 6 for Segments 3 and 4.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-199 describes impacts of actions intended to manage visitor use and facilities in Segments 3 and 4 under Alternative 6.

Actions in El Portal include construction of an El Portal Remote Parking Area and new high-density employee housing in the Abbieville / Trailer Village area and would result in long-term, moderate, adverse impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

There are no additional actions in Alternative 6 beyond those described in actions common to Alternatives 2 – 6 for Segments 5, 6, 7, and 8.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Table 9-200 describes impacts of actions intended to manage visitor use and facilities in Segments 5, 6, 7 and 8 under Alternative 6.

Actions in Wawona include the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

TABLE 9-199: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 3 AND 4 UNDER ALTERNATIVE 6

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 4	Abbieville / Trailer Village Employee Housing	Hennessey's Ranch (Identified but not evaluated)	Construct high-density housing units here for 258 employees to accommodate removal of temporary employee housing in Yosemite Valley.	Construction of substantial new infrastructure resulting in the redevelopment of a contributing resource would result in long-term, moderate, adverse impacts.
Segment 4	Abbieville / Trailer Village Visitor Parking	Hennessey's Ranch (Identified but not evaluated)	Develop El Portal Remote Visitor Parking Area at the Abbieville/Trailer Village area to provide 200 spaces of visitor parking serviced by regional transit.	Construction of substantial new infrastructure resulting in the redevelopment of a contributing resource would result in long-term, moderate, adverse impacts.

TABLE 9-200: IMPACTS OF ACTIONS INTENDED TO MANAGE VISITOR USE AND FACILITIES IN SEGMENTS 5, 6, 7 AND 8 UNDER ALTERNATIVE 6

Segment	Action Type	Possible Historic Resource	Action and Impact to Resource	Analysis under NEPA
Segment 7	Elimination of commercial day rides form the Wawona Stables	Pioneer Yosemite History Center Historic District (Eligible 2011)	Eliminate the stables operation and day rides. Relocate the Wawona stock use campground (2 sites) to this area.	The retention of a contributing resource, but elimination of the service, would result in no impact to the historic district.

Summary of Impacts from Alternative 6: Diversified Visitor Experiences and Selective Riverbank Restoration and Actions Common to Alternatives 2 – 6

Biological resource actions such as the removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact.

Hydrological/Geological Processes actions such as the removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conducting further studies and identify mitigation measures for success would result in no impact.

Scenic resource actions such as the restoration of historic views and vistas would result in a long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Merced Lake High Sierra Camp – Actions at the Merced Lake High Sierra Camp would result in no impact.

Curry Village – Actions in the Curry Village Area include the removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging units and employee dormitory at Huff House), and redesign of a contributing resource (Curry Orchard) within the historic district and would result in long-term, moderate to major, adverse impacts.

Yosemite Village and Housekeeping Camp – Actions in the Yosemite Village area include the demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Additionally, the removal of a minimal number of contributing resources at Housekeeping Camp would result in long-term, minor, adverse impacts. The retention and rehabilitation of Residence 1 would result in no impact. The removal of non-contributing resources (temporary housing) would result in no impacts and the construction of a new infrastructure (employee housing at Lost Arrow) would result in long-term, moderate, adverse impacts. The redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and substantial new infrastructure (roundabout and pedestrian underpass) within the historic district would result in a long-term, moderate, adverse impact.

Yosemite Lodge and Camp 4 Campgrounds –The addition of minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, the construction of new infrastructure (employee housing, additional lodging units, and West of Lodge Parking Area) within the historic districts would result in long-term, moderate, adverse impacts.

El Portal – Actions to provide additional infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additionally, construction of an El Portal Remote Parking Area and new high-density employee housing in the Abbieville / Trailer Village area and would result in long-term, moderate, adverse impacts.

Wawona – Actions in Wawona to relocate the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction; however, the rehabilitation of the historic properties would result in a long-term, beneficial impacts. Additionally, the elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.

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

Past Actions

Past actions have resulted in a range of beneficial and adverse impacts. Beneficial impacts of past actions include extensive actions to preserve and maintain historic resources, including the Camp Curry Historic District (Curry Village Registration Building, Guest Lounge and Amphitheater Rehabilitation), as well as restoration of meadows associated with the Yosemite Valley Historic District (Cook's Meadow). Adverse impacts include the demolition of the NR eligible Cascades area houses, as well as the changes to Curry Village, including access and building demolition, resulting from rockfall in 2008. These impacts would result in a mixture of long-term beneficial actions (building and meadow rehabilitation) and adverse impacts (demolition and loss of historic structures in Curry Village) to historic resources.

Present Actions

Present actions contribute to a mixture of beneficial and adverse impacts. These impacts include efforts to restore, preserve, and protect the historic integrity and character-defining features of The Ahwahnee NHL while completing long-term rehabilitation of the building and associated features; minimization and mitigation efforts associated with the rehabilitation project are underway in accordance with a programmatic agreement. Rehabilitation of the historic Curry Village Registration Building, Cabins with Baths, and the Ahwahnee Hotel Porte Cochère Access Walkways and Fence project have improved the condition of these contributing resources. Minimization and mitigation efforts associated with the removal of historic structures called for the Curry Village Rockfall Hazard Zone Structures project are underway in accordance with a memorandum of understanding. The Final Tuolumne River Plan/EIS calls for the relocation of the non-historic tent cabins at Tuolumne Lodge and reduction in use at the Glen Aulin High Sierra Camp. Actions associated with the Restoration of the Mariposa Grove of Giant Sequoias isolate actions to the vicinity of the Mariposa Grove and South Entrance areas and include ecological restoration of giant sequoias and addressing parking and congestion through improved and expanded parking opportunities in the vicinity.

Future Actions

The Wilderness Stewardship Plan and could result in additional impacts to historic resources due to actions called for within historic districts at Glen Aulin and Merced Lake, along historic trails and trailhead management / access.

Overall Cumulative Impact of Alternative 6

Segment 1 – The Merced Lake High Sierra Camp Historic District's significance would be retained because recreation and education in one of seven high country camps, with origins back to the earliest days of the National Park Service will still be conveyed. Minimization and mitigation of adverse effects would be addressed though project-specific agreements.

Segments 2A and 2B – The Yosemite Valley Historic District's significance would be retained because the themes of outdoor recreation, tourism, and conservation, and the preservation of scenic places through their development as public parks will still be conveyed. Likewise, the Yosemite Village Historic District's significance would be retained because the entire range of Yosemite history since 1855, including early homesteading, John Muir's early residence in the park, the development of the national park, the U.S. Army's role in park administration, and the evolution of early NPS administration and interpretation of the resources of Yosemite would still be conveyed.

The Camp Curry Historic District's significance would be retained because Camp Curry would continue to be illustrative of the foundation and early development of the Curry family concession enterprise and their unique contribution to a character of accommodation that will still available in Yosemite National Park. Minimization and mitigation of adverse effects would be addressed though project-specific agreements. For the Yosemite Lodge Historic District, its significance would still be conveyed as the 1950's era motel complex and the Housekeeping Camp Historic District would convey its significance as the closely sited, rustic cinderblock and canvas tents, and informal circulation within the camp would remain intact.

The significance of the Yosemite Valley Historic Bridges District would still convey the unique architectural design and aesthetic considerations, use of native granite in the form of rough boulders reflecting the tenets of the Rustic style, and examples of a projects completed under the partnership between the NPS and the Bureau of Public Roads. And finally, The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design.

Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed in that the typical Mission 66-style architecture used to create efficient, utilitarian housing; would remain continuously occupied by Yosemite staff. Other individual historic properties within El Portal and the Merced River Gorge would retain their integrity as infill development would only be in the vicinity.

Segments 5, 6, 7 and 8 – No impacts would occur within the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and the significance of the NHL and districts would still convey the largest existing Victorian-style hotel complex within the boundaries of a national park with a high-level of integrity. The Pioneer Yosemite History Center would retain its significance as its association with the development of tourism and outdoor recreation during the Mission 66 period would be retained.

Archeological Resources

Archeological sites are important for their cultural value and for the information they can provide regarding prehistoric and historic lifeways. Culturally associated tribes and groups attach significance to prehistoric and historic sites for their religious and cultural value as tangible links to their heritage. Common objects that indicate the presence of prehistoric archeological sites within Yosemite include: scatters of stone tools (primarily of obsidian and often called lithic scatters); food processing features known as bedrock mortars; milling implements called ground stone artifacts; rock shelters; architectural features; fire hearths; rock alignments; artifact caches; evidence of daily refuse midden sediments; rock art; animal faunal remains indicating diet; and human remains. Historic-era sites related to continued occupation of the area by American Indians may also contain some of these cultural remains, in addition to artifacts of metal, glass, and other items that arrived with non-native settlers. Historic-era archeological sites of all cultural origins provide important information not available in written records, such as early building construction techniques, lifestyles of early inhabitants, trade and procurement of goods and materials, and interactions between non-native and native peoples.

Affected Environment

Regulations and Policies

Numerous federal laws, statutes, and regulations have been enacted to protect the country's cultural heritage. The most applicable regulations to the proposed undertaking are summarized below. In addition, NPS has several internal policies, also listed here.

Section 106 of National Historic Preservation Act (1966 as amended). Under NHPA and its implementing regulation, Protection of Historic Properties (36 CFR 800), a cultural resource is considered significant if it meets the Criteria for Evaluation (36 CFR 60) for the National Register of Historic Places (National Register).

Prior to implementing an "undertaking" (i.e., "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval"), section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would potentially affect properties listed or eligible for listing in the National Register. The lead federal agency is responsible for project compliance with section 106 of the NHPA.

The National Register was established by the NHPA of 1966, as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The National Register recognizes both historic-era and prehistoric properties that are significant at the national, state, and local levels.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archeology, engineering, or culture. As indicated in section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to culturally associated groups are eligible for

inclusion in the National Register. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (36 CFR 60.4):

A. are associated with events that have made a significant contribution to the broad patterns of our history;

B. are associated with the lives of persons significant in our past;

C. embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for national register listing (36 CFR 60.4).

In addition to meeting the criteria of significance, a property must have integrity, meaning the ability of a property to convey its significance. The National Register recognizes seven qualities that, in various combinations, define integrity. To retain integrity a property must possess several of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4).

Cultural Resources Management Plan (1973). The Cultural Resources Management Plan completed for the Yosemite General Management Plan was designed to protect the significant cultural resources of the park through compliance with all cultural resource legislative, executive, and regulatory requirements. The Cultural Resources Management Plan provides specific policies to guide cultural resources management at Yosemite, including consultation, survey and evaluation, preservation/restoration/reuse, and documentation.

The *Archaeological Resources Protection Act of 1979* prohibits unauthorized excavation of archeological sites on federal land, as well as other acts involving cultural resources, and implements a permitting process for excavation of archeological sites on federal or Indian lands. This act also establishes provisions for civil and criminal penalties for removal of, or damage to, archeological and cultural resources.

1999 Programmatic Agreement. Yosemite National Park, in consultation with the ACHP, the California SHPO, American Indian tribes, and the public, has developed a programmatic agreement for planning, design, construction, operations, and maintenance activities. This programmatic agreement provides a process for compliance with NHPA and includes stipulations for identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties, including potentially eligible historic properties. Under the 1999 PA, the park is obligated to "make every reasonable effort to avoid adverse effects to Historic Properties . . .through project design, facilities' location, or other means. Avoidance alternatives will be documented during the NEPA process." The park will follow stipulations of this programmatic agreement for all future planning and design projects. The 1999 programmatic agreement allows the NPS to implement standard mitigating measures for some actions if the SHPO and the public are notified and provided an opportunity to comment. This programmatic agreement expires in 2014, and if a new programmatic agreement is not completed, the 2008 nationwide programmatic agreement in conjunction with standard compliance under 36 CFR 800 will provide guidance for park activities. Additionally, plan-specific agreements will also apply.

2008 Programmatic Agreement. This programmatic agreement provides nationwide coordination between the NPS, the ACHP, and the National Conference of SHPOs for the section 106 compliance process. The NHPA, 36 CFR 800, and the programmatic agreement provide the NPS with a roadmap to plan for and carry out undertakings to minimize harm to cultural resources.

Proposed Merced River Plan Programmatic Agreement. As a part of the current Merced Wild and Scenic River Comprehensive Management Plan, the Park is proposing, via consultation with the ACHP, SHPO, and culturally-associated groups, the development of a programmatic agreement regarding treatment of historic resources under the proposed management plan Merced River PA. This document will provide guidance for necessary consultation regarding the identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties, including potentially eligible historic properties, impacted by all future planning and design projects of the Merced River Plan. The consultation process promulgated by the PA will recognize that all people, and especially traditionally-associated cultures have values assigned to archeological sites beyond their potential for data and information.

The *Native American Graves Protection and Repatriation Act (NAGPRA) of 1990* (25 USC 3001 et seq.) provides for the protection and return of Native American and Native Hawaiian human remains, funerary objects, sacred objects, and objects of cultural patrimony, and establishes ownership hierarchy for human remains and associated artifacts found on federal lands. NAGPRA also sets penalties for violations of the act, calls for cultural resource inventories of federal agency holdings and federally funded repositories, and contains provisions for the return of specified cultural items to the appropriate Native American tribe(s) and/or Native Hawaiian organizations. NAGPRA is initiated when a project and the finds are situated on federal lands.

CFR 36 2.1 provides for the preservation of natural, cultural, and archeological resources. These regulations prohibit possessing, destroying, injuring, defacing, removing, digging, or disturbing from its natural state living or dead wildlife, plants, or cultural or archeological resources; and walking on, climbing, entering, etc. an archeological or cultural resource.

Director's Order 28 Cultural Resources Management Guideline (1998) guides the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS *Management Policies*. It also ensures that the NPS comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. Additionally, the NPS will comply with the 2008 programmatic agreement with the ACHP and the National Conference of SHPOs. The NPS published the *2006 Management Policies* relating to the systemwide treatment of various types of resources on NPS lands. The following are some specific policies related to resources of the types discussed in the Director's Order; other sections within the *Management Policies* describe the processes for consultation with traditionally associated peoples:

> **5.3.5 Treatment of Cultural Resources.** The Park Service will provide for the long-term preservation of, public access to, and appreciation of the features, materials, and qualities contributing to the significance of cultural resources. With some differences by type, cultural resources are subject to several basic treatments, including: (1) preservation in their existing states; (2) rehabilitation to serve contemporary uses, consistent with their integrity and character; and (3) restoration to earlier appearances by the removal of later additions and replacement of missing elements.
>
> **5.3.5.1 Archeological Resources.** Archeological resources will be managed in situ, unless the removal of artifacts or physical disturbance is justified by research, consultation, preservation, protection, or interpretive requirements. Preservation treatments will include proactive measures that protect

resources from vandalism and looting, and will maintain or improve their condition by limiting damage due to natural and human agents.

5.3.5.2 Cultural Landscapes. Treatment decisions will be based on a cultural landscape's significance over time, existing conditions, and use. Treatment decisions will consider both the natural and built characteristics and features of a landscape, the dynamics inherent in natural processes and continued use, and the concerns of traditionally associated peoples. The treatment implemented will be based on sound preservation practices to enable long-term preservation of a resource's significant features, qualities, and materials. There are three types of treatment for extant cultural landscapes: preservation, rehabilitation, and restoration.

5.3.5.3 Ethnographic Resources. Park ethnographic resources are the cultural and natural features of a park that are of traditional significance to traditionally associated peoples. These peoples are the contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations 40 years, and whose interests in the park's resources began before the park's establishment. Living peoples of many cultural backgrounds—American Indians, Inuit Eskimos, Native Hawaiians, African Americans, Hispanics, Chinese Americans, Euro- Americans, and farmers, ranchers, and fishermen—may have a traditional association with a particular park.

Executive Order 11593: Protection and Enhancement of the Cultural Environment. Executive Order 11593 instructs all federal agencies to support the preservation of cultural properties. It directs them to identify and nominate cultural properties in Yosemite to the NRHP and to "exercise caution… to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered" NPS (1971).

Scope of the Analysis

The area now comprising Yosemite National Park has been inhabited by people for thousands of years. Some preliminary evidence from the El Portal area indicates people may have been living in the region as long as 9,500 years ago. The park area contains hundreds of archeological sites, representing the known duration of human occupation of the park (Hull and Moratto 1999). There is evidence of technological change through time, a highly developed trade network, at least one population replacement, and resource management through the use of fire (Hull and Moratto 1999).

Through study of information provided on Geographic Information System (GIS), researchers estimate that approximately 12% of park lands have been systematically inventoried for archeological resources, and approximately 1,900 archeological sites have been documented (YNP 2010). A greater proportion of the inventories focus on lower elevation developed areas and road corridors, although some wilderness areas have been surveyed. In most cases, inventories have been conducted in support of park road, trail, and facility construction and maintenance, fire management, or restoration projects as part of the environmental and historic preservation planning and compliance processes. The most recent comprehensive overview of archeological resources and their information value is presented in *Archeological Synthesis and Research Design, Yosemite National Park, California* (Hull and Moratto 1999). The synthesis summarizes the results of past archeological research, and presents research questions and methodologies for furthering understanding of prehistoric and historic-era lifeways in the Yosemite region.

An area of potential effects (APE) describes the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. The APE includes the .25 mile river boundary in addition to a 1.5 mile boundary on either side of the river. This APE encompasses the entirety of all National Register listed or National Register eligible properties located partially or entirely

within the river corridor. This APE was identified in a letter to the State Historic Preservation Officer dated April 12, 2012. Concurrence on the APE was documented in a letter dated September 17, 2012.

Although land use in the early and mid-20th century has altered the landscape and affected archeological deposits in many places, YNP retains many significant archeological resources. Many archeological sites discussed below are on the National Register, or are eligible for the National Register. There are seven archaeological districts, including two listed, three not yet determined eligible, and two districts that have not yet been submitted for eligibility: Yosemite Valley National Register District (listed), Eagle Peak Archeological District (eligible), Old Coulterville Road and Trail Archeological District (eligible), Wawona Archeological District (eligible), Old Big Oak Flat Road Archeological District (not yet submitted), Foresta-Big Meadow Archeological District (not yet submitted), and the El Portal Archeological District (listed). Additionally, the Merced Canyon Travel Corridor Historic District incorporates the archeological material associated with its period of significance. Some sites within these Districts are individually eligible, but as they are included in the district nomination, they are not individually nominated. These nominations were based on surface manifestations only. Since that time, the park has conducted many excavation projects, particularly in Yosemite Valley and El Portal. This work has been done on a project-specific basis, with the objective of characterizing the data potential of archeological deposits, and their contribution (or not) to existing archeological districts. Archeological research has shown that there is a high potential for deep or buried sites in many areas, especially in Yosemite Valley. Review of actions must take into consideration the methods, findings, and any inadequacies of previous surveys or excavations.

Text below identifies general areas that may be impacted by MRP actions. Appendix J provides more specific detail, as much of the information contained within archeological resources is considered to be confidential.

Segment 1: Merced River Above Nevada Fall

According to study of GIS data (YNP 2010), approximately 15% of the Merced River corridor has been archeologically surveyed, and less than 5% of the remaining corridor has been included in the boundaries of one or more archeological surveys. Much of Segment 1 outside the immediate river corridor is steep and inaccessible, and as a result, more complete surveys have been conducted of the main stem canyon bottom and Triple Peak Fork, with little to no inventory of Merced Peak, Red Peak, and Lyell forks. Some archeological resources have been recorded. Little Yosemite Valley, in particular, was used heavily by American Indians, stock men, and later by recreationists.

Twenty-eight prehistoric sites, six historic-era sites, and two sites with components from both the prehistoric and historic eras have been recorded within Segment 1 of the river corridor. An additional 10 prehistoric sites, 1 historic-era site, and 1 historic-era trail segment have been recorded within the remainder of the APE. To date, none of these sites have been formally evaluated for the National Register, or determined to be eligible for the National Register.

A branch of the old Mono Trail, the east-west link across the Sierra Nevada, passed through Little Yosemite Valley. Remains of at least two villages are evident. Little Yosemite Valley also was one of the few places where the Merced River could be crossed at high water, a crossing made possible by a huge logjam that still exists today (Greene 1987).

The remains of the Archie Leonard homestead collapsed cabin (and park boundary fence) also exist in Little Yosemite Valley, and the eastern portions above the original Yosemite Grant were grazed (NPS 1990).

Cavalry trails to patrol for trespass and resources related to hunting have been documented. Merced Lake High Sierra Camp was established along Sunrise Creek in Little Yosemite Valley in 1924 as a stopping point for hikers on the way to Merced Lake. Resources associated with these activities include tree blazes (either historic graffiti or an intentional mark used to establish direction), historic-era camps, and trash scatters (NPS 1990).

Segment 2: Yosemite Valley

The Yosemite Valley Archeological District consists of over 100 known sites significant for their ability to yield important information about prehistoric lifeways. While the nomination only evaluated resources for their information potential, the resources are also likely significant for their religious and cultural significance. Additional resources are also present in Segment 2 beyond those that contribute to the archeological district. Early archeological surveys of Yosemite Valley, prior to the 1980s, focused on prehistoric or historic-era Indian sites rather than historic-era resources representative of homesteading, visitor, and NPS facilities. Documentation of historic-era sites began in the 1980s and 1990s.The entire Valley has been surveyed to some extent for prehistoric resources, except for wet meadows, areas of impenetrable vegetation, and some talus slopes. As a result, study of GIS data (YNP 2010) suggests that approximately 70% of the Merced River corridor in Segment 2 has been subject to some degree of formal archeological survey. Surveys within the remainder of the APE outside the river corridor are scarcer because of the steep and inaccessible slopes on the margins of the Valley. Approximate survey coverage in these areas averages 10%.

Due to changes in groundcover and vegetation patterns, as well as more refined survey techniques and standards since the original (1970s) inventories, it is likely that more previously undocumented, prehistoric resources exist in the Valley. Over the past 15 to 20 years, historic-era resources have been more consistently inventoried than in the past. Some historic-era archeological deposits have been documented, and areas of known land use are documented on historical base maps. As of this writing, 101 prehistoric resources have been recorded within the river corridor and APE in Segment 2 as well as 29 historic-era sites and 38 sites with components from both prehistoric and historic eras. Some sites have been merged from earlier recordings and have multiple numbers assigned to them.

Anderson and Morehead (1976) wrote the nomination form for the Yosemite Valley Archeological District. The district was listed in the National Register the same year. This archeological district consists of over 100 known sites significant for their ability to yield important information about prehistoric lifeways. The district nomination also notes the area's significance for traditionally-associated American Indians.

Individual sites in the archeological district vary by type, size, depth, complexity, length of occupation, variety of remains, and potential to yield important scientific information. Archeological research (Hull and Moratto 1999) provides guidance in assessing the research potential of these sites. Important research domains identified include paleoenvironment, cultural chronology, economic patterns, settlement patterns, demography, and social organization. Sites are considered significant when they contain important information that relates to these areas of inquiry.

Although the majority of archeological sites in the Valley retain a relatively high degree of integrity and therefore maintain their eligibility for listing on the National Register, many sites have been disturbed by human activity and natural processes (Hull and Kelly 1995). Visitor use has been the most widespread impact, although its effect is not as serious as other types of impacts. Due to the scarcity of easily buildable land, several archeological sites were damaged by historic-era construction of facilities and utilities. Much

of the road system was developed in the early 1900s. Other visitor accommodations, such as The Ahwahnee Hotel and Camp Curry, were constructed approximately 100 years ago. Many roads, hotels, and other visitor accommodations have been constructed since 1957, and preservation of archeological resources did not begin in earnest in Yosemite until the creation of the NHPA in 1966.

Segment 3: Merced River Gorge

Study of GIS data (YNP 2010) suggests that approximately 10% of the river corridor in Segment 3 has been subject to surveys. Most surveys followed the course of the river and the highway that runs parallel to it, due to the steep and inaccessible slopes forming the edge of the canyon. Archeological resources in the Merced River gorge include 4 prehistoric and 11 historic-era sites, as well as 2 sites with components from both eras. Approximately 15% of the APE outside the river corridor in upland areas has been surveyed, resulting in the recordation of 39 prehistoric resources, 6 historic-era sites, and 5 multicomponent sites.

Volpe (1997) made recommendations for the National Register eligibility of the Merced Canyon Travel Corridor Historic District, an area of prehistoric and historic travel. Four prehistoric American Indian archeological sites are located in and adjacent to the Cascades area, and are considered to be contributing elements to this National Register eligible district. These sites are likely seasonal villages and contain features such as mortar rocks, midden soil, lithic scatters, and rock shelters Greene 1987). Historic-era sites are associated with use of this canyon as a travel corridor and source of hydroelectric power, and include rock quarries, dumps, worker housing at the Cascades Diversion Dam, the remains of two work camps associated with the Civilian Conservation Corps (CCC), a few unidentified structural foundations, the Cascades Powerhouse, and the Coulterville Road blacksmith shop in the talus west of Cascades, where a forge was built to serve travelers along this road The Old El Portal Road and older El Portal Trail have also been recorded along the bottom of the gorge, with additional trails crossing upland areas. Of these, Volpe (1997) notes the CCC camps and blacksmith forge area as contributing elements to the Merced Canyon Travel Corridor district, as are the old roadways. The district was determined eligible to the National Register but has not been nominated or listed.

Segment 4: El Portal

El Portal's location between Yosemite Valley and the San Joaquin Valley made it an important place of settlement, subsistence, and trade along the Merced River. Study of GIS data (YNP 2010) suggests that approximately 70% of Segment 4 has been subject to an archeological survey, and as a result 11 prehistoric sites, 15 historic-era sites, and 15 sites with components dating to both eras have been recorded. Surveys have not been conducted in much of the remaining APE outside the river corridor because the park's boundaries do not extend beyond the river corridor through much of Segment 4, and surveys have not been conducted on the adjoining private lands. Approximately 5% survey coverage has resulted in the recordation of two prehistoric sites, three multicomponent sites, and one historic-era trail segment.

The El Portal Archeological District, listed on the National Register (Moffitt and Anderson 1976), encompasses 1,910 acres and contains 36 known sites within the Merced River corridor, including some of the oldest known deposits in the Sierra Nevada foothills. These sites have sparse but intriguing evidence of use, perhaps as old as 9,500 years, and contain data important to interpreting early settlement patterns (Hull and Moratto 1999). Most sites date to between 2500 BC and AD 1900, with several 19th- and 20th-century homesteads and settlements by American Indians. The El Portal Archeological District may contain some of the best-preserved archeological resources from this protohistoric period reflecting American Indian

cultural change as a result of contact with Euro-Americans (Moffitt and Anderson 1976). Although land use in the early and mid-20th century has altered the landscape and affected archeological deposits in many places, a great deal could be learned from the remaining resources. Despite the loss of some information, the original extent and complexity of the sites, especially the prehistoric village sites, indicate that valuable information is still available. Archeological resources in the El Portal Archeological District represent an important source of data on the growth of the area as a national park, as well as on the cultural transition experienced by American Indian communities during Euro-American settlement. In addition, these resources are exceptional in their significance to the local American Indian community.

The steep, narrow canyon at El Portal includes river terraces with level lands on which American Indian villages were built. As recently as the early 1900s, local American Indian inhabitants shared the names and histories of multiple villages within present-day Segment 4, including permanent year-round settlements with large winter populations in the 18th and 19th centuries (Merriam 1917). These sites would have included family homes, traditional roundhouses for dances and ceremonies, sweat lodges, acorn granaries, and mortars cut into the granite bedrock for processing acorns and other foods Kroeber (1921). Surface remains include these bedrock mortars, house pits, and midden deposits with lithic debris. Excavations have shown that sometimes sparse surface manifestations provide little indication of the potentially high density of materials contained in subsurface deposits.

Prehistoric and historic-era American Indian burials, in both isolated locations and cemeteries, have been identified in El Portal. The presence of artifacts originating from the Great Basin and Pacific Coast indicate that El Portal was a location of continuous, far-reaching traffic and trade throughout prehistory. Eleven of the contributing sites in the El Portal Archeological District correlate with those villages named by Merriam's informants (1917). Particularly significant is the Johnny Wilson Ranch, a rare surviving example of an early 20th-century American Indian homestead and cemetery on the south side of the Merced River (Davis-King 1997). Mr. Wilson and his family occupied the 30-acre ranch, granted under the Dawes Act in 1917, until his death in 1937 (NPS 2011).

There is archeological evidence of historic-era activities in El Portal, including those associated with the early land use of El Portal as a gateway to the park. An extensive historic-era site consists of the remnants of Hennessey's Ranch, established in 1873. Remnants of the site include an orchard and rock walls as well as a prehistoric component of bedrock mortars. The ranch originally was home to an extensive farm that supplied produce to gold rush boomtowns throughout the Sierra Nevada and later to the Hotel Del Portal, contributing to the early growth of the area. El Portal also has remnants of mining operations, such as building foundations, tailings, and associated industrial refuse scatters. At the turn of the century, the Yosemite Valley Railroad brought tourists and led to the creation of the Hotel Del Portal, a stopover on the way into the Valley. The railroad also provided transport for mining and timber industries throughout its lifetime. Historic-era debris scatters, building foundations, mining and railroad remnants, and other archeological features remain from this era.

Segment 5: South Fork Merced River Above Wawona

Study of GIS data (YNP 2010) suggests that less than 10% of Segment 5 has been surveyed for archeological resources, and less than 5% of the remaining APE outside the South Fork Merced River corridor has been inventoried. Steep slopes are frequent in this area. All five of the recorded historic-era archeological remains in Segment 5 are outside of the Merced River corridor. Fifteen prehistoric sites have been recorded within the river corridor, and an additional 17 prehistoric sites have been recorded in the remaining APE. Many of

these sites are associated with the National Register-eligible Wawona Archeological District (determined to be eligible, but not yet formally listed). This District is 4,940 acres in size, spanning areas in Segments 5 to 8, and includes at least 74 archeological sites (Hammack and Anderson 1978, Darko 2011), many of which are located within the South Fork Merced River corridor. The importance of this eligible district as documented in 1978 lies in its ability to provide information pertaining to American Indian subsistence strategies, seasonal use of specific ecological zones, demographic patterns, and both prehistoric and historic-era occupation of the area (Hammack and Anderson 1978). It is likely that some sites in this district also possess additional significance not recognized at the time of their National Register nominations, both in terms of archeological information potential and religious and cultural significance to associated American Indian groups. In addition, material cultural remains of previously under-reported ethnic groups such as African American and Chinese American are important. Historical contexts for these kinds of resources have yet to be developed. While not reflected in the existing National Register nominations, the NPS recognizes ethnicity as an aspect of significance in the Wawona Archeological District.

Wilderness areas above Wawona have regionally rare prehistoric archeological sites containing substantial rock-ring features with wooden remains. The rock-ring sites were first formally identified and reported by (Knierieman 1976), who interpreted them as protohistoric Miwok deer-hunting blinds that were created to take advantage of lines of sight along the river and the animals' attraction to local soda springs that contained essential mineral salts. Knierieman's interpretation of these features has neither been confirmed nor refuted, and the features remain enigmatic. The features were typically constructed of two or three courses of stacked rock coupled with the remains of wooden timbers that may once have formed a kind of superstructure. Associated charcoal and obsidian flaked-stone artifacts (including projectile points) have been found near some sites, reinforcing the possibility of an association with hunting activities.

Segments 6 and 7: Wawona Impoundment and Wawona

Segments 6 and 7 appear to be the most thoroughly surveyed of the South Fork Merced River corridor segments. Study of GIS data YNP 2010) indicates that approximately 85% of the area has been subject to archeological inventory. As a result, 42 prehistoric sites, 5 historic-era sites, and 8 multicomponent sites have been recorded. Portions of the APE outside the river corridor have been surveyed with an average of 15% coverage, resulting in the recordation of an additional 16 prehistoric, 8 historic-era, and 3 multicomponent sites, plus segments of at least three separate historic-era trails. The Wawona Archeological District (described above) also extends into Segment 7.

The prehistory of the Wawona area is similar to that of the park as a whole, although most occupation by American Indians seems to have occurred somewhat earlier than in Yosemite Valley. Archeological sites range in size, and most include bedrock mortars and midden soil. At least 12 of the sites recorded as contributors to the district have 25 or more bedrock mortars with associated midden deposits, indicative of large village sites. These sites frequently occur in clusters with close spatial association. The Wawona area is sheltered from harsh winds and extreme climatic conditions by the surrounding ranges, thus allowing for possible year-round occupation. Acorn-gathering and processing apparently took place during the early fall at times of low water, as suggested by the presence of bedrock mortars in the river channel below the average mid-summer waterline. The time span of these sites is not accurately known, but it might range from before AD 500 to the historic era (Hammack and Anderson 1978).

From 1891 until 1916, the U.S. Army stationed troops at Yosemite during the summer to administer the fledgling park, enforce prohibitions on grazing and other incompatible uses, and construct much of the

original park infrastructure (California Military Museum n.d.). Physical evidence of their tenure at the park can be found in the roads and trails they built, as well as other improvements such as a now-abandoned arboretum on the south side of the South Fork Merced River, west of its confluence with Big Creek (Palmer n.d.). Other historic-era archeological remains include sites related to an early hospitality and tourism industry based in the Wawona area.

Segment 8: South Fork Merced River Below Wawona

Less than 10% of the South Fork Merced River corridor in Segment 8 has been surveyed for archeological resources study of GIS data (YNP 2010). Only five prehistoric sites have been recorded, and no evidence of historic-era occupation has been found. Surveys along Wawona Road within the APE outside the river corridor cover approximately 15% of the ground surface; this inventory has resulted in the recordation of one additional prehistoric site and a segment of the Wawona Road. Prehistoric sites in the APE represent smaller, limited-use areas, rather than permanent or seasonal villages.

Environmental Consequences Methodology

The archeological resource impact analysis in this *Merced River Plan/DEIS* is described in terminology consistent with the regulations of the Council on Environmental Quality (CEQ). CEQ regulations require that the impacts of alternatives and their component actions be disclosed. It is intended that the impact assessment will comply with the requirements of both the National Environmental Policy Act (NEPA) and section 106 of the NHPA. The determination of effect for the undertaking (implementation of the alternative) is included in the Summary of Impacts section for each alternative.

NEPA Compliance Methodology

Consistent with the CEQ regulations, analysis of individual actions includes identification and characterization of potential impacts. Under NEPA, impacts on archeological resources are assessed as either adverse or beneficial. While an archeological resource cannot be restored or repaired, a beneficial impact could be assessed if the resource would be stabilized to prevent future impacts, or appropriate active intervention would be performed to preserve the elements of the resource that qualify it for National Register eligibility. NPS could take other steps to improve upon these beneficial impacts, including activities such as increasing visitor education, increasing ranger patrols in no-camping areas, and reducing overnight use.

All known archeological resources within the APE are evaluated for impacts under NEPA, regardless of their eligibility for the National Register. Even sites that do not meet National Register criteria, or that have lost most of their integrity, can still be capable of conveying past culture or history, and may therefore have value in the context of public interpretation and/or traditional cultural resources. GIS data layers for each action were overlayed with the locations of the archaeological sites to identify where ground disturbing or other types of actions could potentially affect archaeological resources. Analyses of impacts on archeological resources for the purposes of the NEPA are based on the following.

Context. The context of the impact considers whether the impact would be local, segmentwide, parkwide, or regional. For this analysis, local impacts would be those that occur in a specific area within a segment of the Merced River. This analysis further identifies whether there would be local impacts in multiple segments. Segmentwide impacts would consist of a number of local impacts within a single segment or larger-scale

impacts that would affect the segment as a whole. Parkwide impacts would extend beyond the river corridor and the APE within Yosemite. Regional impacts would be those that extend to the Yosemite gateway region.

Intensity. The intensity of impact depends on the nature, location, and design of the proposed project. Intensity of impacts is described as:

- **Negligible.** Impact is barely perceptible and not measurable; confined to small areas of a particular site.
- **Minor.** Impact is perceptible and measureable; remains localized and confined to a single area of a particular site.
- **Moderate.** Impact is sufficient to cause a change in a character-defining feature; generally involves a single site or small group of sites.
- **Major.** Impact results in a substantial and highly noticeable change in character-defining features; involves a large area of one site, or groups of sites, with high to exceptional archeological value.

Duration. Impacts to archeological resources are described as short-term or long-term duration. Most changes to the data potential of archeological resources are permanent and would thus be characterized as having a long-term impact. Short-term impacts would consist of temporary changes to setting, association, and feeling.

Type of Impact. Impacts can be considered to either be adverse or beneficial, direct or indirect. Impacts are considered adverse when they have the potential to diminish significant characteristics of a resource. Specific actions, such as demolition, result in direct impacts. Indirect impacts generally occur after project completion, and result from changes in land use or pedestrian traffic patterns.

The assessment of impacts on archeological sites requires knowledge of the specific qualities of the resource that are considered culturally valuable. Under NEPA, cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency Federal or non-Federal) or person undertakes such other actions" (40 CFR § 1508.7). Cumulative impacts are generally those that take place within a specified geographic area that contains similar or related resources. NEPA also requires a discussion of mitigation, and the appropriateness and effectiveness of mitigation. To best meet these requirements, ongoing tribal consultation over the life of the project will be critical, as well as adherence to the plan-specific programmatic agreement that is currently being developed.

Archeological resources in the Merced River corridor are qualitatively analyzed based on existing knowledge, and assessing what potential modifications could alter character-defining features. Actions specific to individual alternatives that would affect these historic properties are described under each alternative.

Some assumptions were made in this analysis. For example, informal trails and high concentrations of visitor use in the vicinity of, or overlapping with, archeology sites have variable impacts depending on the depth and type of resource. For this analysis, informal trails and visitor use are assumed to be long-term, minor to moderate, adverse impacts. Additional monitoring and/or testing would be necessary to determine the extent of the disturbance to individual archeological resources.

Section 106 Compliance Methodology

Appendix J addresses Section 106 compliance for the preferred alternative.

Environmental Consequences of Alternative 1 (No Action)

This subsection and the following alternatives subsections summarize the effects from different types of proposed management actions (including no action) that would occur in each Merced Wild and Scenic River segment. Some actions have been determined to have no effect on archeological resources. In order to protect confidential site location data, resources are not individually named nor are their exact positions relative to the management actions revealed. The assessments are based on current site conditions, causes of current impacts, and potential for continuation or worsening of existing impacts under Alternative 1. Text below describes proposed actions and potential impacts. Table 9-205 summarizes these proposed actions and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), the park would leave informal trails as they currently exist. The estimated 8 miles of existing informal trails would continue to be used, including those that cross sensitive archeological sites. This would result in continuing erosion on these sites, which exposes artifacts and makes them vulnerable to collection or displacement. Other formal and informal infrastructure on, through, or near archeological sites would remain, including abandoned underground utilities, parking areas, nonessential roads and trails, campsites, and staging areas. Access formal and informal to climbing areas would continue to result in inappropriate use and vandalism of rock art features.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The continued high numbers of day use and total visitors proposed under Alternative 1 (No Action) would result in ongoing impacts on archeological sites that are currently experiencing effects of high visitor use. Effects that can be correlated specifically with visitor use include creation and use of informal trails, littering, artifact collection and other vandalism, general erosion and trampling, and inappropriate use of site features such as climbing.

Ground disturbance, alterations, and removal of existing historic and modern infrastructure would have potential impacts to archeological resources. Abandoned infrastructure and ditches are often historic archeological resources in and of themselves. In Wawona, for example, historic archeological resources contribute to the cultural ORV. Avoidance and other mitigation measures developed through consultation with SHPO and traditionally associated groups would target protection of archeological resources with respect to these actions.

Segment 1: Merced River above Nevada Fall

Under NEPA, archeological sites have other potential value, other than their National Register eligibility. Sites are capable of conveying past culture or history, and may therefore have value in the context of public interpretation and/or traditional cultural resources. The presence of informal trails near archeological sites, visitor use, and compromised meadow ecology create a potential for local, long-term, minor, adverse impacts.

TABLE 9-205: IMPACTS FROM ALTERNATIVE 1

Segment	Action Type	Proposed Action	Analysis under NEPA
All segments	Actions to Protect and Enhance River Values	No restoration (removing and revegetating) of informal trails; continued use of existing trails, including those that cross areas of archeological sites Formal and informal infrastructure improvements continue as is; many areas of existing infrastructure such as campsites, roads) include relatively easy access to archeological sites, including rock art features	Visitor use on informal trails and improvements to formal and informal infrastructure would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate, adverse impacts.
All segments	Actions to Manage Visitor Use and Facilities	High day use and total numbers of visitors continues. Ongoing impacts on relatively accessible archeological sites continues, including: littering, artifact collection, vandalism, etc. Changes to existing infrastructure may be necessary.	High levels of visitor use and possible infrastructure improvements at specific locations would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor, adverse impacts.
Segment 1	Actions to Protect and Enhance River Values	No restoration of informal trails, decompaction of soils, or revegetation of heavily grazed areas would occur on or near known archeological sites.	Impacts of informal trails and compromised meadow ecology would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor, adverse impacts to archeological resources.
Segment 1	Actions to Manage Visitor Use and Facilities	Continued use of Merced Lake High Sierra camp	Continued visitor use at Merced Lake High Sierra Camp would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor, adverse impacts.
Segment 2	Actions to Protect and Enhance River Values	No decompaction of soils, revegetation of denuded areas, or removal of informal trails and abandoned infrastructure would occur. Stock use, operational staging, hiking trails, unauthorized camping, vandalism, and climbing would continue. Graffiti and climbing hardware would not be removed from rock shelters and rock art boulders.	Impacts of compromised meadow ecology, visitor use, vandalism, and climbing would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate, adverse impacts to individual sites.
Segment 2	Actions to Manage Visitor Use and Facilities	Current facilities and levels of visitor use in the Valley would continue unchanged. Camping and individual lodging units would continue on and near sensitive archeological resources.	Impacts of visitor use, and maintenance of facilities would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate, adverse impacts to individual sites.
Segments 3 and 4	Actions to Protect and Enhance River Values	Abandoned infrastructure at the Cascades Picnic Area would not be removed. Informal trails and a nonessential gravel road would remain. Visitor use would remain at current levels.	Retention of abandoned infrastructure at Cascades Picnic Area would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in no ground disturbance to archeological resources in the area. This would result in local, long-term, negligible impacts.

TABLE 9-205: IMPACTS FROM ALTERNATIVE 1

Segment	Action Type	Proposed Action	Analysis under NEPA
Segments 3 and 4	Actions to Manage Visitor Use and Facilities	No action further removal of infrastructure) would occur at El Portal Wastewater Treatment Plant. Abbieville and Trailer Village area in Segment 4 would continue to be used for temporary employee or park partner housing.	Retention of abandoned infrastructure at the El Portal Wastewater Treatment Plant would result in no ground disturbance to archeological resources in the area, but the attractive nuisance would remain. The presence of the infrastructure changes the character of the property's religious and cultural use and the physical features within the property's setting that contribute to its historic significance. This would result in local, long-term, minor, adverse impacts. Impacts of residential use at Abbieville and Trailer Village would result in local, long-term, negligible, adverse impacts to archeological resources
Segments 5, 6, 7, and 8	Actions to Protect and Enhance River Values	Informal trails in Segments 5 and 7 would remain open for use. In Segment 7, visitor and operational uses including camping) would also continue in the Wawona area.	Impacts of informal trails and visitor and operational use would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate, adverse impacts to archeological resources.
Segments 5, 6, 7, and 8	Actions to Manage Visitor Use and Facilities	As above, with continued operation of the Wawona Campground and Wawona Stock Camp. No additional restroom and waste collection facilities would be constructed near the Wawona Swinging Bridge, resulting in continued use of a nearby archeological site for improper disposal of trash and human waste.	Impacts of visitor use at Swinging Bridge, Wawona Campground, and Stock Camp would continue to cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate, adverse impacts to archeological resources.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), some of the sites in Segment 2 would continue to be adversely impacted by ongoing visitor and operational activities and formal or informal infrastructure, including trails and rock climbing. Decompacted soils, denuded areas, informal trails, and abandoned infrastructure would remain as they currently exist. Stock use, operational staging, hiking trails, unauthorized camping, vandalism, and climbing would continue to impact resources in the vicinity of the East Valley Campground, Ahwahnee, El Capitan, Housekeeping Camp, Yosemite Lodge, and Bridalveil/West Valley planning areas. Graffiti and climbing hardware would remain on and near rock shelters and rock art boulders. NEPA analysis would characterize these impacts as local, long-term, minor to moderate, and adverse.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Current facilities and levels of visitor use in the Valley would continue unchanged under Alternative 1 (No Action). Camping and individual lodging units in Housekeeping Camp; Boys Town; Curry Village; and Lower Pines, North Pines, and Yellow Pine campgrounds would continue on and near sensitive archeological resources, resulting in local, long-term, minor to moderate, and adverse impacts from visitor use, such as erosion of soils and consequent exposure, trampling, and collection of cultural materials.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Archeological resources in the Merced River Gorge (Segment 3) and El Portal (Segment 4) include historic-era and prehistoric sites, as well as the Merced Canyon Travel Corridor Historic District (determined eligible) and the El Portal Archeological District (listed). Under Alternative 1 No Action), abandoned infrastructure at the Cascades Picnic Area would remain as it currently exists. Informal trails and a nonessential gravel road would remain within two sites in Old El Portal, and visitor use would remain at current levels. Local, long-term, minor, adverse impacts on individual archeological sites from these conditions would include increased erosion and trampling, soil compaction, and opportunities for unauthorized artifact collection.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 1 (No Action), the Abbieville and Trailer Village area in Segment 4 would continue to be used for temporary employee or park partner housing. The abandoned El Portal Wastewater Treatment Plant would remain as it is. These ongoing impacts generally include erosion, creation of informal trails, and unauthorized artifact collection or displacement. These impacts would be characterized as local, long-term, minor, adverse impact from trampling and potential artifact collection or displacement.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 1 (No Action), informal trails and charcoal rings in Segment 5 would remain, continuing surface and subsurface disturbance of archeological resources. In Segment 7, visitor and operational uses, as well as informal trails, would continue in the Wawona Store area. Camping in the Wawona Campground would continue to result in ongoing adverse impacts on shallow subsurface deposits within historic-era sites. Informal trails would continue to be used through sites near the South Fork and Wawona Store picnic areas. The Wawona Hotel would continue to be used, resulting in ground disturbing impacts to surface and sub-surface archeological resources from construction, maintenance, and use of structures and infrastructure; foot traffic; and landscaping. Impacts would be long-term, minor to moderate, and adverse.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 1 (No Action), no additional restroom and waste collection facilities would be constructed near the Wawona Swinging Bridge, resulting in continued use of a nearby archeological site for improper disposal of trash and human waste, considered to be an adverse impact. Also anticipated under Alternative 1 would be ongoing impacts to archeological resources from continued operation of the Wawona Campground. Impacts would be local, long-term, minor to moderate, and adverse.

Summary of Impacts from Alternative 1 (No Action)

Under Alternative 1 (No Action), there would be no change in the treatment and management of archeological resources. Local, long-term, negligible to moderate adverse impacts on archeological resources would occur as a result of ongoing park operations and programs, such as facilities maintenance and repair, as well as ongoing visitor use. Specifically, the creation and ongoing use of informal and formal trails leading through or adjacent to archeological sites; use of site areas for parking, staging, storage, or stock use; rock climbing routes or bouldering activities that traverse rock shelter and rock art features; and informal camping within sensitive sites all currently result in localized, minor to moderate, adverse effects on archeological resources, and would continue to do so under Alternative 1. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In Segment 2A (East Valley), impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

Cumulative Impacts of Alternative 1 (No Action)

Cumulative impacts on archeological resources are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of Alternative 1 (No Action). The projects identified below include only those projects that could affect archeological resources within the Merced River corridor.

Past Actions

Archeological resources are subject to damage from land use, visitor access, and natural processes. Appendix B contains the list of past actions that have resulted in cumulative impacts on environmental resources, including archeological sites in some areas. Construction and maintenance of facilities within the

river corridor has disturbed or destroyed numerous archeological resources and compromised the integrity of numerous other such resources. Adverse effects have occurred to archeological historic properties, but they still retain their integrity as historic properties.

Present Actions

There are a number of archeological resource sites in the Merced River corridor at, or adjacent to trails, structures, utility systems, and other facilities and are subject to ongoing disturbances such as trampling, unauthorized collection, and ground disturbance associated with facility maintenance. Any present projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure construction and maintenance, restoration) have the potential to result in adverse impacts under the current, 1999 programmatic agreement with the ACHP, all present actions are reviewed for compliance with section 106 of the NHPA, and adverse effects are avoided or mitigated to the extent possible. Current projects that could result in beneficial impacts through increased knowledge of impacts and recommendation and implementation of protection measures include the 2009 *Yosemite National Park Fire Management Plan/EIS*, *Visitor Use and Impacts Monitoring Plan*, and the *Scenic Vista Management Plan*.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS*, as well as the preferred alternative for the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the two plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

Visitation to Yosemite is anticipated to increase at a rate of 3% annually, which would increase the risk of potential adverse impacts on archeological resources. Any future projects that would result in ground disturbance and/or excavation have the potential to result in adverse impacts on known or unknown archeological resources. The *Yosemite Wilderness Stewardship Plan* could potentially result in beneficial impacts to further protection of archeological resources in Segments 1 and 5. Future park operational actions would be subject to site-specific planning and compliance and be undertaken in accordance with stipulations in the servicewide 2008 programmatic agreement. Every effort would be made during the design phase to avoid adverse impacts and adverse effects.

Overall Cumulative Impacts of Alternative 1 (No Action)

Alternative 1 (No Action), in consideration with past, present and future actions, would result in no change in the current treatment and management of archeological resources. Any site-specific planning and compliance actions would be accomplished in accordance with stipulations in existing and future programmatic agreements; several sites would continue to undergo adverse impacts not related to any specific action.

Environmental Consequences of Actions Common to Alternatives 2–6

All River Segments

Impacts of Actions to Protect and Enhance River Values

Proposed actions that could affect archeological resources under Alternatives 2–6 would include protection and revegetation of sensitive riparian habitats, stabilization and protection of riverbanks, removal of abandoned infrastructure, restoration of meadows, and restoration (removal and revegetating) of informal trails. In some areas, these actions would result in disturbances to the surface and subsurface within and adjacent to known archeological sites. In other areas, there is a potential for these activities to uncover unrecorded archeological sites, including those with no surface visibility. Table 9-206 summarizes these proposed actions and potential impacts to archeological sites, and then offers NEPA analysis.

Restoration of informal trails that encroach onto archeological sites would reduce visitor activities on archeological resources that may include unauthorized collection and potential displacement of artifacts, either inadvertently or through vandalism. Decompaction of soils and planting of native vegetation on denuded areas could adversely impact the vertical and horizontal contexts (stratigraphy) within these areas.

For the most part, removal of young conifers from meadows, restoration of hydrologic processes, and renewed use of low-intensity fire to restore meadows would not affect any known archeological resources, nor would the removal of riprap; incorporation of large woody debris or engineered logjams; and subsequent actions to revegetate, protect, and stabilize riparian areas and eroded riverbanks. Several archeological sites are adjacent to the river, and would be vulnerable to actions taken along the river banks. Removing ground-obscuring vegetation and shallow soil disturbances could lead to inadvertent discovery of unrecorded archeological resources. Additionally, impacts could occur during operation of heavy machinery on or near known or unknown resources that contain shallow cultural deposits, including during transit from a staging area or maintenance yard to the location of the management action. Dragging large logs or felled trees across the surface of a site could have similar effects. While inadvertent discovery of an unrecorded site is not necessarily an impact in and of itself, it can result in exposure of artifacts and other cultural materials to erosion, loss of stratigraphic information, trampling, vandalism, and collection. Mitigation measure MM-AR-1 (see Appendix C) describes the park's process of worker education, artifact recognition, resource evaluation, and development of a treatment plan to reduce or avoid) the potential impacts related to inadvertent discovery.

Ground disturbances associated with actions proposed for areas within or immediately adjacent to the known boundaries of an archeological resource can result in loss of stratigraphic information and displacement of artifacts, when avoidance is not possible. Mitigation measure MM-AR-2 (see Appendix C) describes the process the park would follow to assess the presence of surface and subsurface archeological materials, and the subsequent steps to avoid or mitigate impacts from the proposed action. Mitigation measure MM-AR-3 (archeological monitoring, see Appendix C), would also be employed as appropriate either in conjunction with MM- AIR-2 or as an alternative to testing in areas where management actions would result in very minor ground disturbances. With implementation of these three mitigation measures, adverse impacts and effects on archeological resources from the proposed actions to protect and enhance river values would be reduced.

Because abandoned underground infrastructure removal projects would be subject to review under section 106 of the NHPA on an individual basis, impacts on archeological resources would be addressed on a case by case basis as part of planning, design, and implementation (see Appendix J for details).

TABLE 9-206: IMPACTS FROM ACTIONS COMMON TO ALTERNATIVES 2–6

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	Protection and revegetation of sensitive riparian habitats Removal of abandoned infrastructure, restoration of meadows Restoration of informal trails Abandoned underground infrastructure removal projects would be subject to review under section 106 on an individual basis Archeological site locations would be considered and avoided whenever possible	Impacts to specific sites are local; duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that direct visitor activities away from archeological resources result in local to segmentwide beneficial impacts. Restoration activities and removal of abandoned infrastructure on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
All segments	Stabilization and protection of riverbanks	For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Stabilization activities near or on archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
All segments	General reduction in focused visitor use at areas on or near known archeological resources	Activities that direct visitor activities away from archeological resources result in local to segmentwide, long-term beneficial impacts.
Actions Values and Manage Visitor Use and Facilities		
All segments	Various facilities would be removed, repurposed, or reduced Archeological site locations would be considered and avoided whenever possible	Impacts to specific sites are local; duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Actions to Protect and Enhance River Values		
Segment 1	Sections of established trails would be rerouted out of sensitive habitats such as meadows and wetlands Boardwalks or fencing would be used as needed to prevent trail widening and elevate trails above wet areas Archeological site locations would be considered and avoided whenever possible	Activities that direct visitor activities away from archeological resources result in local to segmentwide, long-term beneficial impacts. Activities that involve ground disturbance on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Actions Values and Manage Visitor Use and Facilities		
Segment 1	No common actions to manage visitor use and facilities to Alternatives 2–6.	N/A

TABLE 9-206: IMPACTS FROM ACTIONS COMMON TO ALTERNATIVES 2–6

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
Segment 2	Restore meadows Remove abandoned infrastructure and facilities within 100 feet of the riverbanks Relocate, delineate, or restore trail segments that cross sensitive habitat areas or have fallen into disrepair Archeological site locations would be considered and avoided when possible	Impacts to specific sites are local; duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Segment 2	Protect archeological sites through rerouting and redirection of visitor activity	Activities that direct visitor activities away from archeological resources result in local to segmentwide, long-term beneficial impacts.
Segment 2	Improve the free-flowing condition of the river Refocus visitor use to resilient areas; and relocate, delineate, or restore trail segments that cross sensitive habitat areas or have fallen into disrepair Archeological site locations would be considered and avoided when possible	Impacts to specific sites are local; duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Actions Values and Manage Visitor Use and Facilities		
Segment 2	Various facilities in Segment 2 would be removed, repurposed, or reduced New parking spaces would be provided in several locations, existing parking lots would be formalized, and one new shuttle bus stop would be constructed Specific areas: expansion of Camp 4 (Sunnyside Campground) and Backpackers area Improvements to visitor facilities at Bridalveil Fall Construction of new parking lots and expansion of existing lots Removal of residential buildings from Boystown and Yosemite Lodge Removal of Valley Garage Service and relocation to Government Utility Building Expansion of Yosemite Village day-use parking into previous footprint of Valley Garage area Construction of two-bay roads and trails maintenance building in proximity to the Government Utility Building Retain existing facilities and services of Ahwahnee Hotel, but remove tennis courts associated with Hotel	Impacts to specific sites are local; duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance on or near archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.

TABLE 9-206: IMPACTS FROM ACTIONS COMMON TO ALTERNATIVES 2–6

Segment	Proposed Actions	Analysis under NEPA
Actions Values and Manage Visitor Use and Facilities (cont.)		
Segment 2 (cont.)	Remove old and temporary housing at Highland Court and the Thousand Cabins in the Yosemite Lodge area and replace with new housing. Retain Yosemite Lodge maintenance and housekeeping Remove NPS Volunteer Office former Wellness Center), post office, and snack stand in Yosemite Lodge area Remove Concessioner General Office in Yosemite Village (use infilled into other existing buildings) Archeological site locations would be considered and avoided when possible	
Actions to Protect and Enhance River Values		
Segments 3 and 4	Removal of conifers from the Cascade Fall viewpoint Archeological site locations would be considered and avoided when possible	For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance in areas of known archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Segments 3 and 4	Removal of abandoned infrastructure from the Cascades Picnic Area and El Portal Wastewater Treatment Plant Remove informal trails and a nonessential road from two locations in El Portal Remove asphalt and imported fill from within the Abbieville and Trailer Village area	For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Activities that involve ground disturbance in areas of known archeological sites could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, long-term, minor to moderate adverse impacts.
Actions Values and Manage Visitor Use and Facilities		
Segments 3 and 4	Temporary housing units would be moved from Yosemite Valley to El Portal Archeological sites would be considered in planning and avoided whenever possible	For areas where proposed actions do not occur on or near known archeological sites, there would be a negligible impact on archeological properties. Potential site-specific impacts from the relocation of housing units would result from ground-disturbing activities and concentration of uses in areas sensitive for archeological sites. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. Impacts are local, long-term, minor to moderate adverse impacts, including contributing sites of the El Portal Archeological District.
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Design several actions to reduce or halt ongoing adverse impacts on known archeological sites through wilderness and developed camping, use of informal trails, and informal off-road vehicle travel and parking	Activities that direct visitor activities away from archeological resources result in local to segmentwide, long-term beneficial impacts.

TABLE 9-206: IMPACTS FROM ACTIONS COMMON TO ALTERNATIVES 2–6

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values (cont.)		
Segments 5, 6, 7, and 8 (cont.)	Removal or relocation of Wawona Campground campsites and a road segment out of known archeological resources Development of a site management plan including restrictions on off-road and shoulder travel and parking in the vicinity of a known archeological site	
Actions Values and Manage Visitor Use and Facilities		
Segment 7	Replacement of current restroom facilities at the Wawona Store Construction of new formal river access and visitor amenities, such as restrooms and waste disposal, near the Wawona Swinging Bridge area	The current Wawona public restrooms are within a multicomponent archeological site. Replacement of the existing facilities with larger restrooms could impact this site, if previously undisturbed site soils are excavated during construction of the new restrooms. This action could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. Adverse Impacts are local, long-term, minor to moderate. Providing formalized river access and visitor amenities such as restrooms, parking, and waste disposal outside archeological site boundaries near the Wawona Swinging Bridge could have a long-term, beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternatives 2–6, various facilities would be removed, repurposed, or reduced. These facilities range from those related to recreational activities (swimming, ice skating, tennis, commercial rafting, and cycling) to retail, housing, and campsites. While a general reduction in focused visitor use at areas on or near known archeological resources would result in a reduction of ongoing minor impacts from trampling, erosion, inappropriate uses, and artifact collection or vandalism, the act of removing or renovating the facilities could disturb subsurface deposits of cultural materials.

Intact subsurface cultural deposits and individual artifacts could still exist in certain areas. Implementation of mitigation measure MM-AIR-2 (see Appendix C) would ensure that through a process of testing, action modification, and potential data recovery, the potential for adverse effects from actions to manage visitor use and facilities would be reduced or avoided. Inadvertent discovery of unknown resources is unlikely, given the amount of ground disturbance that occurred during initial construction of the facilities.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, various sections of established trails would be rerouted out of sensitive habitats such as meadows and wetlands in Segment 1. Boardwalks or fencing would be used as needed to prevent trail widening and elevate trails above wet areas.

Although most existing trails are not known to cross any sensitive archeological resources, rerouting some trails could result in disturbance of some known sites, and the inadvertent discovery of previously unknown resources. Subsurface disturbances associated with trail construction could result in displacement of artifacts, disruption of stratigraphic information, and exposure of sensitive site areas to erosion, when avoidance is not possible. These adverse impacts would generally occur only during trail construction, and are local, long-term, and minor to moderate in nature.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, actions would be taken in Segment 2 to restore meadows; improve the free-flowing condition of the river; protect archeological sites; remove abandoned infrastructure and facilities within 100 feet of the riverbanks; refocus visitor use to resilient areas; and relocate, delineate, or restore trail segments that cross sensitive habitat areas or have fallen into disrepair.

Meadow restoration would include actions to improve hydrologic function, restore native vegetation, and remove inappropriate uses or facilities. Some of the specific actions that could affect archeological resources include filling ditches using heavy equipment, removing encroaching conifers, relocating and/or elevating trails onto boardwalks, revegetation with willows and other native species, removing abandoned infrastructure, removing and restoration of informal trails and parking areas, decompacting soils, improving road crossings of meadows, and using low-level fire regimes to maintain healthy meadow ecosystems. Each of these actions would result in ground disturbance that could affect surface or shallow subsurface cultural materials, including those associated with the Yosemite Valley Archeological District. Activities associated with these actions (e.g., mechanical decompaction of soil) could expose artifacts to erosion and disturb the

integrity of horizontal and vertical site patterning. Similarly, removing abandoned infrastructure, decompacting soils in former parking areas or roads, removing encroaching conifers, preparing areas for revegetation, constructing improvements at road crossings, and rerouting trails could involve the use of heavy equipment on known sites, which could disturb buried or surface cultural materials. Use of fire to keep meadows open and ecologically productive could temporarily expose artifacts on the ground surface, making them vulnerable to collection or dislocation.

Actions to enhance the geologic and hydrologic processes would include installation of engineered logjams and large woody debris, brush layering, and removal of abandoned bridge footings and gaging station infrastructure. These actions would generally occur within the river and for the most part(except those sites adjacent to the river) would not directly affect any known archeological sites. Operation of heavy machinery on archeological resources, including during transit from a staging area or maintenance yard to the location of the management action, could affect known resources that contain shallow cultural deposits, as would dragging large logs across the surface of a site.

Removal of abandoned infrastructure is proposed under Alternatives 2–6 for several locations in Segment 2. Actions associated with infrastructure removal would include removing artificial fill and decompacting soils, recontouring the ground surface, and revegetating the area with native plant species. Some of the infrastructure removal actions are proposed for areas within the boundaries of known archeological sites. While these resources were likely adversely affected by original construction of the infrastructure to be removed, it is possible that intact deposits of subsurface cultural materials may still exist. Ground-disturbing actions associated with the removal of abandoned infrastructure could result in an adverse impact for those actions proposed within known sites.

Several management actions under Alternatives 2–6 would be undertaken specifically to protect archeological sites from further damage resulting from visitor use and infrastructure impacts. These actions include removing/limiting or rerouting formal roads and trails away from sensitive areas, removing and revegetating informal trails and parking turn-outs, removing unauthorized campfire rings and campsite furniture logs, removing climbing hardware from rock features, removing graffiti, and increasing law enforcement and/or archeological monitoring at sites known to attract unauthorized camping and climbing. The park would develop increased awareness and outreach programs to educate climbers about irreplaceable cultural resources and institute prohibitions on climbing at some locations. Sensitive features in high-use areas may be fenced off to prevent access, and some formal campsites and bear boxes would be removed from within site boundaries.

Proposed redirection of visitor uses to resilient areas away from unstable slopes and sensitive locations along riverbanks, and the associated restoration of eroded and denuded areas in Segment 2 would generally lessen impacts to archeological resources. Some of the proposed actions under Alternatives 2–6 would take place close to known archeological sites. These sites would be considered in planning for fencing of sensitive areas to exclude visitor access. Revegetation activities themselves might result impacts such as artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity.

Portions of hiking and stock trails in Segment 2 would be removed, relocated, reconstructed, or better delineated to focus visitor use on well-established trails that do not cross sensitive habitats or cultural sites. Removed portions of trails would be decompacted and revegetated, and new trail construction or fencing would be beyond the boundaries of known sites, whenever possible. Ground disturbances from soil decompaction, operation of heavy equipment, and preparation for revegetation could affect known archeological resources in the vicinity of each action.

Ground disturbances associated with actions proposed for areas within or immediately adjacent to the known boundaries of an archeological resource can result in loss of stratigraphic information and displacement of artifacts. Mitigation measure MM- AIR-2 (see Appendix C) describes the process the park would follow to assess the presence of surface and subsurface archeological materials, and the subsequent steps to avoid or mitigate adverse effects from the proposed action. Mitigation measure MM-AR-3 (archeological monitoring, see Appendix C) would also be employed as appropriate either in conjunction with MM-AR-2 or as an alternative to testing in areas where management actions would result in very minor ground disturbances.

While inadvertent discovery of an unrecorded site is not necessarily an impact in and of itself, it can result in exposure of artifacts and other cultural materials to erosion, loss of stratigraphic information, trampling, vandalism, and collection, when avoidance is not possible. Mitigation measure MM-AR-1 (see Appendix C) describes the park's process of worker education, artifact recognition, resource evaluation, and development of a treatment plan to mitigate the potential impacts related to inadvertent discovery.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternatives 2–6, various facilities in Segment 2 would be removed, repurposed, or reduced. These facilities range from those related to recreational activities (swimming, ice skating, tennis, commercial rafting, and cycling) to retail and other visitor services, housing, and campsites. The park would remove 296 residential units from Yosemite Valley, including 206 units from Huff House and Boystown, and 90 units from Yosemite Lodge. Expansion of an existing campground would add a net 51 new campsites, while some campsites and other campground facilities such as roads would be removed from a rockfall hazard zone and the bed and banks of the Merced River. New parking spaces would be provided in several locations, existing parking lots would be formalized, and one new shuttle bus stop would be constructed.

In many instances, initial construction of the facilities resulted in disturbances to archeological resources, when avoidance is not possible. Despite these previous disturbances, intact subsurface cultural deposits and individual artifacts could still exist in certain areas. Implementation of Mitigation measure MM-AR-2 (see Appendix C) would ensure that through a process of testing, action modification, and potential data recovery, the potential for adverse effects from actions to manage visitor use and facilities would be reduced. Inadvertent discovery of unknown resources is unlikely, given the amount of ground disturbance that occurred during initial construction of the facilities.

For proposed construction of new facilities or renovation of existing facilities for new uses under Alternatives 2–6, impacts could involve ground-disturbance, and have the potential to cause adverse effects to archeological resources. Planning for new construction would take into account the locations of known sensitive archeological sites in Segment 2. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which the park would manage inadvertent discoveries to avoid or minimize impacts. Implementation of MM-AR-2 would also be applicable in some instances where proposed new construction or renovation would be located in or near a known site. With implementation of these measures, the potential for adverse effects from actions related to management of visitor use and facilities would be reduced.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternatives 2–6, actions to protect and enhance river values would include the removal of abandoned infrastructure from the Cascades Picnic Area (itself an archeological site) and removal of conifers from the Cascade Fall viewpoint. The park would remove informal trails and a nonessential road from two locations in El Portal as well as asphalt and imported fill from within the Abbieville and Trailer Village area. Each of these actions would occur within or adjacent to the location of a known archeological resource, and each has the potential to affect those sites.

Given this, proposed removal actions could result in impacts due to artifact displacement and temporary exposure of soils to erosion, when avoidance is not possible. Mitigation measure MM-AR-2 (see Appendix C) is recommended to reduce potential effects. Monitoring of all removal processes, as described in Appendix C for mitigation measure MM-AR-3, could help to ensure that no intact cultural deposits would be disturbed. With implementation of these measures, the potential for adverse effects from the proposed actions to protect and enhance river values would be reduced.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternatives 2–6, 12 duplex housing units would be constructed at El Portal Village (Segment 4). The proposed locations in El Portal are within or near one or more known archeological sites. Construction of housing units on or adjacent to archeological sites would likely have direct and indirect adverse effects. Mitigation measure MM-AR-2 (see Appendix C) describes a process for assessing surface and subsurface site conditions, and development of a treatment plan to reduce potential impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

In these segments, the park would design several actions to reduce or halt ongoing adverse impacts on known archeological sites through wilderness and developed camping, use of informal trails, and informal off-road vehicle travel and parking. Development of a site management plan for a specific multicomponent site, including restrictions on off-road and shoulder travel and parking in the vicinity of the site, would provide for long-term site study and preservation.

Minor adverse effects on known sites from ground-disturbing activities associated with actions to protect and enhance river values under Alternatives 2–6 would be mitigated by implementation of mitigation measure MM-AR-2, which outlines a process for treatment of sites according to each proposed action. Implementation of this measure would reduce impacts.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Proposed actions to manage visitor use and facilities include replacement of current restroom facilities at the Wawona Store with larger facilities, and construction of new restrooms and other visitor amenities at the Wawona Swinging Bridge area. Both of these actions under Alternatives 2–6 would take place within or near known archeological resources. Construction activities on or near archeological sites would likely have

direct and indirect adverse effects. Implementation of mitigation measure MM-AR-2 (see Appendix C) would reduce the potential for adverse effects.

The Wawona Swinging Bridge area is also located adjacent to a known prehistoric archeological site, which is frequently used by visitors for improper disposal of human waste. Under Alternatives 2–6, providing formalized river access and visitor amenities such as restrooms, parking, and waste disposal would intend to redirect visitor use outside of the archeological site boundaries.

Summary of Impacts Common to Alternatives 2–6

A portion of the management actions proposed for Alternatives 2–6 would have the potential to result in site-specific to local, minor to major, adverse impacts on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal, when avoidance is not possible. These could result in short-term exposure of site soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendix C) would delineate the process by which a site could be tested and characterized and an appropriate treatment plan developed. Mitigation measure MM-AR-3 would provide for an archeological monitor to be present for minimally invasive construction and restoration ground-disturbing activities within sites.

Other management actions under Alternatives 2–6 would include ground-disturbing activities in areas that do not contain documented archeological resources, but where such resources may be present in a buried context. Although inadvertent discovery of a previously unknown resource is not an adverse effect in and of itself, such effects can result if project personnel do not act to protect the newly discovered resource from further ground-disturbing activities, vandalism, and inappropriate use. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which any unanticipated discoveries would be handled so as to minimize disturbances to previously unknown sites.

Under NEPA, a portion of the management actions associated with Alternatives 2–6 would result in long-term, beneficial impacts on known archeological sites, either through restrictions on types of visitor use that can cause damage to sites (such as rock climbing or camping), restoration of areas that have been the focus of inappropriate use (such as informal trails, campfire circles, or graffiti), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that may ultimately benefit a resource also have the potential to adversely affect site elements if done in an inappropriate or careless manner. Mitigation recommendations have been included in the impact discussion in Appendix C as appropriate.

Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In Segment 2A (East Valley), impacts would include those to the Yosemite Valley Archaeological District and other archeological sites.

In areas of known sites, intensity of impacts on archeological resources relates to the importance of the information they contain and the extent of disturbance. Even the disturbance of a small portion of a rare or unstudied site type impacts to less than 10% of the total site area) can be considered an adverse effect to a site's integrity. Conversely, impacts to 25% or more of the site area of a well-known and common site type may be considered not adverse. As above, implementation of mitigation measures would reduce or avoid effects.

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

All River Segments

Table 9-207 summarizes proposed actions under Alternative 2, and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 2 actions to protect and enhance river values, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Several actions related to management of visitor use and facilities under Alternative 2 would have the potential to affect archeological resources in Segment 1. These actions would include removing infrastructure at Little Yosemite Valley Backpackers Campground and converting this campground to dispersed camping; closing the Merced Lake High Sierra Camp, removing infrastructure, and redesignating portions of the area as Wilderness; and expanding Merced Lake Backpackers designated camping into other portions of the former Merced Lake High Sierra Camp. Limits on the number of hikers between Little Yosemite Valley and Merced Lake would also be enacted through a pass or wilderness trailhead quota system.

Little Yosemite Valley Campground is largely within a known prehistoric archeological site. Removing infrastructure here would reduce the number of visitors and disperse visitor activities, lessening erosion and trampling.

The Merced Lake High Sierra Camp is partially within a known prehistoric archeological site. Proposed actions include closure of the camp, removal of infrastructure, and restoration of portions of the area to a natural condition. These actions would remove some sources of concentrated visitor-use disturbances. A portion of the area would be used for an expansion of the Merced Lake Backpackers Campground.

The trail between Little Yosemite Valley and Merced Lake crosses within or near the known boundaries of several archeological sites. Limiting pedestrian traffic on this trail through a zone pass or quota system (25 daily limit) would reduce the potential for impacts on these sites from trampling, erosion, vandalism, or artifact collection.

Ground disturbance associated with removal of infrastructure and restoration of former camping areas could displace artifacts (and result in increased erosion when avoidance is not possible) and perhaps result in discovery of previously unknown sites. Implementation of mitigation measure MM-AR-2 (testing, assessment, and treatment; see Appendix C) would reduce potential impacts.

TABLE 9-207: IMPACTS FROM ALTERNATIVE 2 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	None of the overall actions to protect and enhance river values in all river segments would affect archeological resources beyond those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
All segments	None of the overall actions in any of the river segments to manage visitor use and facilities would affect archeological resources beyond except those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Protect and Enhance River Values		
Segment 1	No proposed actions to protect and enhance river values in Segment 1 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Segment 1	Remove infrastructure at Little Yosemite Valley Backpackers Campground and converting this campground to dispersed camping Close the Merced Lake High Sierra Camp, removing infrastructure, and redesignate portions of the area as Wilderness Expand Merced Lake Backpackers designated camping into other portions of the former Merced Lake High Sierra Camp Limit number of hikers between Little Yosemite Valley and Merced Lake Archeological sites would be considered in planning and avoided whenever possible	Proposed conversion of the existing 150-site Little Yosemite Valley Campground to dispersed camping and associated removal of infrastructure would potentially result in a site-specific, long-term beneficial impact on the known archeological site found within the Campground area, assuming avoidance is possible. Closure of the Merced Lake High Sierra Camp partially within a known prehistoric site) and limiting pedestrian traffic on the trail between Little Yosemite Valley and Merced Lake portions of which are within or near archeological sites) would have a similar site-specific, long-term beneficial impact. Proposed expansion of the Merced Lake Backpackers Campground is proposed in an area without archeological sites; there would be a negligible impact on archeological properties. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in site-specific, short-term, minor, adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity, in cases where avoidance is not possible.
Segment 2	Restore portions of Stoneman Meadow Remove portions of Southside Drive and the Curry Orchard parking lot Conduct several habitat restoration actions within the East Valley campgrounds Reroute portions of the Valley Loop Trail out of the meadow Remove housing and other constructions between Village Store and Ahwahnee Meadow; restore and revegetate this area Remove facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp Archeological sites would be considered in planning and avoided whenever possible	In areas where no archeological resources have been recorded (Stoneman Meadow, Curry Orchard parking Lot, Boys Town housing area, Village Store, Ahwahnee Meadow), there would be a negligible impact on archeological properties. While site avoidance is always preferable, proposed removal of campsites and associated infrastructure within the East Valley campgrounds would potentially result in local, long-term beneficial impact on known archeological sites found within the campgrounds. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in site-specific, short-term, minor, adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity. Ground disturbance and rerouting of the Valley Loop Trail would result in a long-term moderate to major adverse effect, as this trail is itself an historic property.

TABLE 9-207: IMPACTS FROM ALTERNATIVE 2 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
Segment 2	Restore portions of Stoneman Meadow Remove portions of Southside Drive and the Curry Orchard parking lot Conduct several habitat restoration actions within the East Valley campgrounds Reroute portions of the Valley Loop Trail out of the meadow Remove housing and other constructions between Village Store and Ahwahnee Meadow; restore and revegetate this area Remove facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp Archeological sites would be considered in planning and avoided whenever possible	In areas where no archeological resources have been recorded (Stoneman Meadow, Curry Orchard parking Lot, Boys Town housing area, Village Store, Ahwahnee Meadow), there would be a negligible impact on archeological properties. While site avoidance is always preferable, proposed removal of campsites and associated infrastructure within the East Valley campgrounds could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially result in local, minor to moderate long-term beneficial impact on known archeological sites found within the campgrounds. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity. Ground disturbance and rerouting of the Valley Loop Trail would result in a long-term moderate to major adverse effect, as this trail is itself an historic property.
Segment 2	Remove Sugar Pine and Ahwahnee bridges and reroute trail that currently extends between these bridges	Removing the northern abutment of Sugar Pine Bridge would result in a local, long-term major adverse impact to the known archeological site. Mitigation measures may reduce the potential for this impact. Additional ground disturbing activities associated with removal of the bridges and rerouting trail could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, short- to long-term, minor, adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity. If previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor to moderate, adverse impacts may result from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity.
Segment 2	Create new parking spaces west of Yosemite Lodge Restore areas with native vegetation Decrease peak day visitor numbers Remove temporary housing at Lost Arrow in Yosemite Village and re-establish an administrative parking lot. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage.	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in local, long-term, minor to moderate beneficial impacts. Overall reduced visitor numbers would have a negligible impact on archeological sites. The relocation of the Superintendent's House and demolition of the Garage would result in ground disturbance that could result in physical destruction or damage to archeological resources. This would result in local, long-term, adverse impacts.
Actions to Manage Visitor Use and Facilities		
Segment 2	Remove campsites from Backpackers, Lower Pines, Upper Pines, and Yellow Pine campgrounds Construct a shuttle stop for Camp 4 Remove lodging facilities at Yosemite Lodge, and replace with campsites and day use areas Archeological sites would be considered in planning and avoided whenever possible	Long-term adverse impacts on known archeological resources from restoration, facilities demolition, removal, and other ground disturbing could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially occur during active ground disturbance, and be local, minor to moderate, in cases where avoidance is not possible. Overall reduced visitor numbers would have a negligible impact on archeological sites.

TABLE 9-207: IMPACTS FROM ALTERNATIVE 2 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities (cont.)		
Segment 2	Create new parking spaces west of Yosemite Lodge Construct a shuttle stop for Camp 4 Decrease peak day visitor numbers Remove temporary housing at Lost Arrow in Yosemite Village and re-establish an administrative parking lot. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage.	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in local, long-term, minor to moderate beneficial impacts. Overall reduced visitor numbers would have a negligible impact on archeological sites. The relocation of the Superintendent's House and demolition of the Garage would result in ground disturbance that could result in physical destruction or damage to archeological resources. This would result in local, long-term, adverse impacts.
Actions to Protect and Enhance River Values		
Segments 3 and 4	No proposed actions to protect and enhance river values in Segments 3 and 4 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Segments 3 and 4	Temporary housing units would be moved from Yosemite Valley to El Portal Administrative campsites from Yellow Pine Campground moved to area within Segment 4. Archeological sites would be considered in planning and avoided whenever possible	Potential local, minor to moderate, adverse impacts from the relocation of housing units could result from ground-disturbing activities and concentration of uses in areas sensitive for archeological sites, in cases where avoidance is not possible. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting.
Actions to Manage Visitor Use and Facilities		
Segments 3 and 4	Temporary housing units would be moved from Yosemite Valley to El Portal Administrative campsites from Yellow Pine Campground moved to area within Segment 4. Archeological sites would be considered in planning and avoided whenever possible	Potential local, minor to moderate, adverse impacts from the relocation of housing units could result from ground-disturbing activities and concentration of uses in areas sensitive for archeological sites, in cases where avoidance is not possible. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting.
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Decommission Wawona Golf Course and return area to natural setting	For the Wawona Golf Course, turf removal, recountouring of terrain, soil decompaction, revegetation, and/or other ground disturbing may occur in or near known archeological sites, which could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. During these actions, impacts would be site-specific, negligible to major, and potentially adverse.
Segments 5, 6, 7, and 8	Eliminate Wawona stables operations Remove Wawona tennis courts	For the removal of Wawona tennis courts, soil decompaction, revegetation, and/or other ground disturbing would occur in or near a known archeological site, which could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. During these actions, effects would be site-specific, negligible to major, and potentially adverse, in cases where avoidance is not possible. Elimination of stables within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas.

TABLE 9-207: IMPACTS FROM ALTERNATIVE 2 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove 32 campsites in Wawona Campground Redesign bus stop at Wawona Store to accommodate visitor use	Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. As the bus stop is near a known archeological site, unless avoidance is possible, this action could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. There is a potential for local, long-term minor to moderate adverse impacts.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Some of the proposed Alternative 2 actions in Segment 2 to protect and enhance river values have the potential to affect archeological resources. Proposed actions include restoring portions of Stoneman Meadow, removing portions of Southside Drive and the Curry Orchard parking lot, conducting several habitat restoration actions within the East Valley campgrounds, and removing the Sugar Pine and Ahwahnee bridges and rerouting the trail that currently extends between these bridges. Portions of the Valley Loop Trail would be rerouted out of the meadows. Additionally, Alternative 2 calls for the removal of housing and other constructions, between the Village Store and Ahwahnee Meadow and restoration of the area, including recontouring and revegetation activities.

There are no recorded archeological sites within Stoneman Meadow in the vicinity of the proposed restoration, nor have sites been recorded near the Curry Orchard parking lot or in the Boys Town housing area. The proposed partial restoration of the Curry Orchard parking lot would have no effect on archeological resources. Removal of 1,335 feet of Southside Drive and realigning the road through the Boys Town housing area would occur in areas not known to contain archeological resources, although there could be unanticipated discoveries during construction of the realigned road segment.

Several archeological sites are located at least partially within the East Valley campgrounds. Removal of campsites and associated infrastructure and subsequent restoration of native vegetation within the campground areas restoration actions would result in ground disturbing activities that may result in impacts if artifacts are displaced or soils temporarily exposed to erosion during decompaction or revegetation activities. Similarly, known cultural resources are in the vicinity of Housekeeping Camp. Avoidance of known archeological sites is always the preference; there could be unanticipated discoveries during ground disturbing activities. Site specific measures would be developed to avoid adverse effects when possible.

A large archeological site is directly adjacent to and likely beneath) the northern abutment of Sugar Pine Bridge. Removal of the Sugar Pine Bridge has the potential to adversely effect this resource. Other than this exception, no archeological resources have been recorded in the immediate vicinity of either the Sugar Pine or the Ahwahnee bridges, or the multiuse trail between these two bridges. Rerouting the trail to the north side of the river may result in the trail encroaching on one or more of the known archeological sites in the likely reroute area. Avoidance of known archeological sites is always the preference.

The Valley Loop Trail, itself a known historic property, would be rerouted out of wetland areas through Slaughterhouse and Bridalveil meadows. Although no archeological resources are recorded in the area between the Village Store and Ahwahnee Meadow, recontouring and revegetation of this area after removal of housing and other construction could result in the inadvertent discovery of one or more deeply buried archeological resources. As a programmatic action, all trail reroutes would consider impacts on archeological resources and be located away from known archeological sites to the extent practicable. Mitigation measures MM-AR-2 and/or -3(see Appendix C) would be necessary if it is not possible to reroute the trail off of archeological resources.

While inadvertent discovery of archeological resources is not necessarily an impact in and of itself, discovery can result in damage to sites through exposure of artifacts to erosion, collection, and displacement. Implementation of mitigation measure MM-AR-1 (see Appendix C) is recommended to reduce potential impacts associated with inadvertent discovery. Likewise, a program of intensive surface survey and/or limited

subsurface testing (MM-AR-2) is recommended for actions that would take place within or near the boundaries of a known archeological resource. An appropriate treatment plan could then be developed to reduce or avoid potential impacts associated with ground disturbance through construction or restoration. With implementation of these two mitigation measures, the potential to adversely effect resources from actions to protect and enhance river values in Segment 2 would be reduced or avoided.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 2, campsites would be removed or relocated from Backpackers, Lower Pines, North Pines, Upper Pines, and Yellow Pine campgrounds. Removal areas would be restored with native vegetation. Lodging facilities at Yosemite Lodge would also be removed and replaced with campsites and day use areas. Some new parking spaces would be created west of Yosemite Lodge, a formal shuttle stop would be constructed for Camp 4 (Sunnyside Campground), and overall peak day visitor numbers to the Valley would decrease over current rates.

Known archeological sites exist within or adjacent to portions of the Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds. Removal of campsites from these areas and restoration of native vegetation would reduce impacts to known archeological sites by stabilizing ground surfaces and reducing erosion, trampling, and artifact collection that can result from heavy visitor use. Ground disturbance associated with revegetation activities, including use of any heavy machinery may impact archeological sites. Avoidance of known archeological sites is always preferred.

No archeological sites have been recorded in or adjacent to the Yellow Pine administrative group campsites. Removal of the campsites and restoration of the area to a natural condition would not result in any impacts on archeological resources in Segment 2. Relocating administrative camping to the Abbieville and Trailer Village area in El Portal (Segment 4) would potentially affect a known archeological site in that area, as is discussed in the "Segments 3 and 4: Merced River Gorge and El Portal" subsection below. Similarly, replacing removed sites at Backpackers Campground at a western extension of the campground, and creating new camping areas and day-use facilities in the Yosemite Lodge area would occur within or near known sites.

The reduced numbers of day use and overnight visitors proposed under Alternative 2 actions to manage visitor use and facilities in Segment 2 would not have a measureable effect on archeological resources. While visitor use can and does affect sites, effects are much more dependent on localized use specific to areas that contain one or more archeological resources. A reduction in the overall visitor numbers would not necessarily reduce impacts on individual sites.

When archeological sites cannot be avoided, implementation of mitigation measures MM-AR-2 (controlled subsurface testing and treatment plan; see Appendix C) and/or MM-AR-3 archeological monitoring (see Appendix C) would reduce the potential adverse. Similarly, implementation of MM-AR-2 would reduce adverse effects associated with construction of new or replacement campsites, parking spaces, and a shuttle stop.

Yosemite Lodge and Camp 4. Proposed new parking spaces west of Yosemite Lodge could encroach on a known archeological site in Segment 2. Ground disturbance associated with the creation of a parking lot could result in site-specific, minor to moderate, adverse effects on shallow subsurface cultural deposits. Construction of a formal shuttle stop at Camp 4 Sunnyside Campground) could also encroach on a known archeological site. Avoidance of known archeological sites is always preferred.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 2 actions to protect and enhance river values in Segments 3 and 4, other than those actions common to Alternatives 2-6, would affect archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 2, the Abbieville and Trailer Village area would be used for relocation of employee housing units from Yosemite Valley; administrative campsites from the Yellow Pine Campground would also be relocated to this area in Segment 4. Avoidance of known archeological sites is always preferred. When unavoidable, these actions have the potential to affect a known archeological site by concentrating uses onto the site and through ground disturbances associated with construction/relocation of housing units.

Implementation of mitigation measure MM-AR-2 (see Appendix C) would result in a program of intensive surface survey and/or limited subsurface testing to determine the nature of cultural materials in areas proposed for housing and camping. An appropriate treatment plan could then be developed, including modification of the proposed actions to avoid impacts, data recovery of selected site areas, and/or archeological monitoring during ground-disturbing activities mitigation measure (MM-AR-3). Adhering to this process would reduce potential impacts.

Segments 5, 6, 7 and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2 in Segment 7, the Wawona Golf Course would be decommissioned and the area returned to a more natural setting through recontouring and revegetation. Two stock campsites would also be removed from the Wawona stock camp, and relocated to the Wawona stables.

Portions of several archeological sites are located within the Wawona Golf Course. Removal of the golf course, including turf removal and recontouring of terrain to a more natural landscape, has the potential to unearth artifacts associated with these sites, diminishing the ability to interpret the sites' stratigraphy and cultural patterning. Mitigation would be recommended for the proposed Wawona Golf Course removal and meadow restoration. Mitigation measure MM-AR-2 (see Appendix C) outlines a process of limited subsurface testing and development of an appropriate treatment plan for sites; the treatment plan could include modification of the proposed action to avoid impacts, data recovery of certain areas of the site, and/or archeological monitoring mitigation measure (MM-AR-3). These measures would reduce or avoid potential impacts.

Two stock campsites would be removed from the Wawona stock camp to halt trampling and erosion impacts on a sensitive cultural resource area. Replanted vegetation would stabilize the ground surface and may prevent further artifact displacement.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 2, Wawona stables operations would be eliminated and two stock campsites would be relocated to this area from the current Wawona stock camp. The Wawona tennis courts would be removed, and 32 campsites in the Wawona Campground would be removed from the floodplain and/or from cultural

sites. A bus stop, near a known archeological site, would be redesigned. Each of these actions would have the potential to impact archeological resources in Segment 7.

Two stock campsites would be removed from the Wawona stock camp to halt trampling and erosion impacts on a sensitive cultural resource area. These sites would be relocated to an area at the Wawona stables, and the stables would no longer offer day rides or operate as they currently do. Replanted vegetation would stabilize the ground surface and prevent further artifact displacement.

The Wawona tennis courts are located within a multicomponent archeological site. Removal of the tennis courts may cause disturbance to the site on shallow cultural deposits of the site. An archeological monitor mitigation measure (MM-AR-3) is recommended during the removal of the Wawona tennis courts to ensure that the potential for impacts related to ground disturbance would be reduced.

Also in Segment 7, the Wawona Campground includes all or portions of at least two distinct archeological sites. The proposed removal of 32 sites within the floodplain and in the former location of A.E. Wood Campground within the Wawona Archeological District (that is National Register-eligible) would potentially reduce or avoid ongoing impacts on this site.

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

Under NEPA, a portion of the management actions under Alternative 2 would have the potential to result in site-specific and local, minor to major effects on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal. These could result in short-term exposure of site soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendix C) would delineate the process by which a site could be tested and characterized, and an appropriate treatment plan developed. Mitigation measure MM-AR-3 (see Appendix C) would provide for an archeological monitor to be present for minimally invasive construction and restoration ground-disturbing activities within sites. These measures would reduce the potential impacts of relevant actions.

Other management actions under Alternative 2 would include ground-disturbing activities in areas that do not contain documented archeological resources, but where such resources may be present in a buried context. Impacts related to inadvertent discovery could range from minor to moderate, depending on the nature of the find and on the extent of damage. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which any unanticipated discoveries would be handled so as to minimize disturbances to previously unknown sites. When implemented, this measure would reduce potential impacts associated with inadvertent discoveries during relevant actions.

A portion of the management actions associated with Alternative 2 would result in long-term, beneficial impacts on known archeological sites, either through restrictions on types of visitor use that can cause damage to sites (camping), restoration of areas that have been the focus of inappropriate use (such as informal trails or recreational facilities), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that may ultimately benefit a resource also have the potential to adversely affect site elements if done in an inappropriate or careless manner. Mitigation recommendations have been included in the impact discussion (in Appendix C) as appropriate.

Actions in the West Valley of Segment 2 predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In the East

Valley, impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

In areas of known or newly discovered sites, intensity of impacts on archeological resources relates to the importance of the information they contain and the extent of disturbance. Even the disturbance of a small portion of a rare or unstudied site type (impacts to less than 10% of the total site area) can be considered an adverse effect to a site's integrity. Conversely, impacts to 25% or more of the site area of a well-known and common site type may be considered not adverse. As above, implementation of mitigation measures would reduce the potential for adverse effects.

Cumulative Impacts from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Past Actions

Past actions listed in Appendix B included some manner of ground-disturbing activities road construction, housing unit removal or construction, recontouring land for habitat restoration), were subject to federal regulations, including NEPA and section 106 of the NHPA (Appendix J contains the Section 106 compliance information). The 2008 service-wide programmatic agreement (and the currently planned MRP-specific programmatic agreement) contains provisions for consideration to protect archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. Information learned during this process continues to inform the current body of knowledge about archeological resources at Yosemite. To date, several major archeological research projects have resulted from activities conducted for these actions.

Present Actions

The *Yosemite National Park Fire Management Plan/EIS* contains provisions regarding proper treatment and recording of archeological resources; this plan does not contain specific plans for archeological research. In addition to the *Yosemite National Park Fire Management Plan/EIS*, the *Programmatic Parkwide Yosemite Facelift Volunteer Event* (2011) resulted in categorical exclusions signifying that no significant environmental effects (including effects on cultural resources) has occurred or will occur.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS* as well as the preferred alternatives for the *Merced River Plan/EIS* and the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the three plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

By following the processes and provisions of federal regulations and internal documents (e.g., the 1999 and/or 2008 programmatic agreements, the MRP programmatic agreement, *2006 Management Policies*, and

others), the park would consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. If mitigation through these means is not feasible, park archeologists may consult with the ACHP to resolve adverse effects. Beneficial impacts on individual sites may result from restoration of natural vegetation communities and resulting reduction of erosion, trampling, and other visitor use impacts.

Overall Cumulative Impact from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Many of the combined past, present, and reasonably foreseeable future actions would have a negligible or beneficial impact on archeological resources. For those actions with potential adverse impacts, implementation of all appropriate mitigation and consultation would reduce or avoid those impacts. With avoidance measures in places, many sites may still be adversely affected by facilities construction, especially in Yosemite Valley and El Portal.

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

All River Segments

Table 9-208 summarizes proposed actions under Alternative 3, and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 3 actions to protect and enhance river values, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

None of the proposed Alternative 3 actions to manage visitor use and facilities, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 3 actions to protect and enhance river values, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources in Segment 1.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Several actions related to management of visitor use and facilities would have the potential to affect archeological resources in Segment 1. These actions include reducing designated camping and removing bear boxes at Little Yosemite Valley Backpackers Campground; converting the Merced Lake High Sierra Camp into a temporary pack camp with a daily limit of 15 people, removing permanent infrastructure, and redesignating the area as Wilderness; and expanding Merced Lake Backpackers Campground into portions of the former Merced Lake High Sierra Camp. Ground disturbance associated with these actions could

TABLE 9-208: IMPACTS FROM ALTERNATIVE 3 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	None of the overall actions to protect and enhance river values in all river segments would affect archeological resources beyond those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
All segments	None of the overall actions in any of the river segments to manage visitor use and facilities would affect archeological resources beyond except those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Protect and Enhance River Values		
Segment 1	Reduce designated camping and remove bear boxes at Little Yosemite Valley Backpackers Campground Convert Merced Lake High Sierra Camp into temporary pack camp, removing permanent infrastructure Expand Merced Lake Backpackers Campground into portions of former Merced Lake High Sierra Camp Limit numbers of hikers	Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in local, long-term beneficial impacts on known archeological site found within the Yosemite Valley Backpackers Campground and Merced Lake High Sierra Camp area. Proposed expansion of the Merced Lake Backpackers Campground is proposed in an area without archeological sites; there would be no adverse impact. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible.
Segment 2	Restore portions of Stoneman Meadow Remove portions of Southside Drive and the Curry Orchard parking lot Conduct several habitat restoration actions within the East Valley campgrounds Remove facilities and infrastructure, conversion of the area into day use river access and picnicking in Housekeeping Camp Remove Sugar Pine and Ahwahnee bridges and reroute trail that currently extends between these bridges Reroute portions of the Valley Loop Trail out of the meadow Archeological sites would be considered in planning and avoided whenever possible	In areas where no archeological resources have been recorded Stoneman Meadow, Curry Orchard parking Lot, Boys Town housing area, Village Store, Ahwahnee Meadow), there is no adverse impact. Proposed removal of campsites and associated infrastructure within the East Valley campgrounds could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, minor to moderate long-term beneficial impact on known archeological sites found within the campgrounds, by redirecting and/or reducing visitor use. When avoidance is not possible, ground disturbing activities associated with removal of infrastructure, restoration of former camping areas, bridge replacement, and trail rerouting may result in local, long-term, minor to moderate adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity. Removing the northern abutment of Sugar Pine Bridge could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in a long-term major adverse impact to the known archeological site, assuming avoidance is not possible. Ground disturbance and rerouting of the Valley Loop Trail would result in a local, long-term moderate to major adverse impact, as this trail is itself an historic property.

TABLE 9-208: IMPACTS FROM ALTERNATIVE 3 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values (cont.)		
Segment 2	Remove and/or relocate campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new recreational vehicle campsites at Upper Pines Loop addition Remove various facilities associated with Yosemite lodge Construct new concessioner employee housing and parking areas Remove temporary housing at Lost Arrow in Yosemite Village and re-establish an administrative parking lot. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage. Reroute Northside Drive south of the parking area, and formalize Yosemite Village Day-use Parking Area Decrease peak day visitor numbers Archeological sites would be considered in planning and avoided whenever possible	Reduction in focused visitor use at areas on or near known archeological resources would potentially result in local, long-term beneficial impacts. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, and other ground disturbing would potentially occur during active ground disturbance, and could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term minor to moderate adverse in cases where avoidance is not possible. Overall reduced visitor numbers would have a negligible effect on archeological sites.
Actions to Manage Visitor Use and Facilities		
Segment 2	Remove and/or relocate campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new recreational vehicle campsites at Upper Pines Loop addition Remove various facilities associated with Yosemite lodge Construct new concessioner employee housing and parking areas Remove temporary housing at Lost Arrow in Yosemite Village and re-establish an administrative parking lot. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage. Construct new parking west of Yosemite Lodge Construct a shuttle stop for Camp 4 Reroute Northside Drive south of the parking area, and formalize Yosemite Village Day-use Parking Area Decrease peak day visitor numbers Archeological sites would be considered in planning and avoided whenever possible	Reduction in focused visitor use at areas on or near known archeological resources would potentially result in local, long-term beneficial impacts. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, and other ground disturbing could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially occur during active ground disturbance, and be local, long-term minor to moderate adverse in cases where avoidance is not possible. Overall reduced visitor numbers would have a negligible effect on archeological sites.

TABLE 9-208: IMPACTS FROM ALTERNATIVE 3 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
Segments 3 and 4	No proposed actions to protect and enhance river values in Segments 3 and 4 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
Segments 3 and 4	Construction of replacement employee housing and administrative group camping in the Abbieville/Trailer Village area Archeological sites would be considered in planning and avoided whenever possible	Adverse impacts on known archeological resources from restoration, facilities demolition, removal, and other ground disturbing could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially occur during active ground disturbance, and be local, long-term minor to moderate adverse in cases where avoidance Site specific measures would be developed to avoid adverse effects when possible. is not possible.
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Eliminate Wawona stables operations Archeological sites would be considered in planning and avoided	Elimination of stables, relocation of stock campsites, and removal of camping sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas.
Actions to Manage Visitor Use and Facilities		
Segments 5, 6, 7, and 8	Eliminate Wawona stables operations Archeological sites would be considered in planning and avoided	Elimination of stables, relocation of stock campsites, and removal of camping sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas.
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove Wawona tennis courts Remove 32 campsites in Wawona Campground Redesign bus stop at Wawona Store	Actions to remove campsites from near known archeological sites may have a long-term, beneficial impact on archeological sites within and near these areas. Soil decompaction, revegetation, and/or other ground disturbing activities would occur in or near a known archeological site. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. During these actions, adverse impacts would be local, long-term, and minor to moderate.

displace artifacts and result in increased erosion. Limits on the number of hikers between Little Yosemite Valley and Merced Lake would also be enacted through a pass or wilderness trailhead quota system. Under NEPA, ground disturbance on or near archeological sites would result in local, long-term, minor to moderate adverse impacts.

Little Yosemite Valley Campground is largely within a known prehistoric archeological site. The proposed reduction in designated campsites and removal of bear boxes would potentially result reduce the number of visitors, thereby lessening erosion and trampling.

The Merced Lake High Sierra Camp is also partially within a known prehistoric archeological site. Proposed conversion of the camp to a temporary pack camp with a limit of 15 daily visitors, removal of permanent infrastructure, and restoration of the area to a natural condition, would remove some sources of concentrated visitor use disturbances. A portion of the area would be used for an expansion of the Merced Lake Backpackers Campground.

The trail between Little Yosemite Valley and Merced Lake crosses within or near the known boundaries of several archeological sites. Limiting pedestrian traffic on this trail through a zone pass or wilderness trailhead quota system (75 hikers daily limit) would reduce the potential for disturbance on these sites through trampling, erosion, vandalism, or artifact collection.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Some of the Alternative 3 proposed actions in Segment 2 to protect and enhance river values have the potential to disturb archeological resources. Proposed actions include several habitat restoration actions within the East Valley campgrounds, and the removal of the Sugar Pine and Ahwahnee bridges and rerouting the trail that currently extends between these bridges. Portions of the Valley Loop Trail would also be rerouted onto upland areas in Slaughterhouse and Bridalveil meadows. Actions relating to the restoration of Stoneman Meadow and Curry Orchard parking lot, and realignment of Southside Drive through the Boys Town housing area do not occur in the vicinity of archeological sites.

Under Alternative 3, some campsites would be removed from the East Valley campgrounds, and limited restoration of floodplains and other sensitive habitats would occur. Several archeological sites are located at least partially within the East Valley campgrounds. Removal of campsites and associated infrastructure and subsequent restoration of native vegetation within the campground areas would reduce visitor impact, although the restoration actions themselves could cause adverse impacts if artifacts are displaced or soils temporarily exposed to erosion during decompaction or revegetation activities. Similarly, known cultural resources are in the vicinity of Housekeeping Camp.

Avoidance of known archeological sites is always the preference; there could be unanticipated discoveries during ground disturbing activities.

Alternative 3 calls for removal of the Sugar Pine and Ahwahnee bridges, and some rerouting of the associated trail. A large archeological site is directly adjacent to (and likely beneath) the northern abutment of Sugar Pine Bridge. Removal of Sugar Pine Bridge has the potential to cause an adverse effect on this archeological resource. Other than this exception, no archeological resources have been recorded in the immediate vicinity of either the Sugar Pine or the Ahwahnee bridges, or the multiuse trail between these two bridges. Rerouting the trail to the north side of the river may result in the trail encroaching on one or more

of the known archeological sites in the likely reroute area. Avoidance of known archeological sites is always the preference.

The Valley Loop Trail, itself a known historic property, would be rerouted out of wetland areas through Slaughterhouse and Bridalveil meadows. Changes to this trail would cause an adverse impact. Although no archeological resources are recorded in the area between the Village Store and Ahwahnee Meadow, recontouring and revegetation of this area after removal of housing and other construction could result in the inadvertent discovery of one or more deeply buried archeological resources. As a programmatic action, all trail reroutes would consider impacts on archeological resources and be located away from known archeological sites to the extent practicable. Mitigation measures MM-AR-2 (and/or -3, see Appendix C) would be necessary if it is not possible to reroute the trail off of archeological resources.

While inadvertent discovery of archeological resources is not necessarily an impact in and of itself, discovery can result in damage to sites through exposure of artifacts to erosion, collection, and displacement. Implementation of mitigation measure MM-AR-1 (see Appendix C) is recommended to reduce or avoid the potential impacts associated with inadvertent discovery. Likewise, a program of intensive surface survey (and/or limited subsurface testing mitigation measure MM-AR-2, see Appendix C) is recommended for actions that would take place within or near the boundaries of a known archeological resource. An appropriate treatment plan could then be developed to reduce or avoid potential adverse impacts and effects associated with ground disturbance through construction or restoration.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 3, some campsites would be removed or relocated from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds. Removal areas would be restored with native vegetation. New recreational vehicle (RV) campsites would be constructed at the Upper Pines Loop addition. Various facilities associated with Yosemite Lodge would be removed, and new concessioner employee housing and parking would be constructed in areas close to known archeological sites. New parking would also be provided west of Yosemite Lodge, and a formal shuttle stop would be constructed for Camp 4. Overall, peak day visitor numbers to the Valley would decrease over current rates.

Under Alternative 3, removal of campsites from sensitive areas in the Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds and restoration of native vegetation would lessen visitor impact, stabilize ground surface, and reduce erosion, trampling, and artifact collection that can result from heavy visitor use. Ground disturbance associated with revegetation activities, including use of any heavy machinery, could disturb shallow cultural deposits.

Replacement of removed sites at Backpackers Campground at a western extension of the campground and construction of new concessioners' housing and parking near Yosemite Lodge would occur within or near known sites in Segment 2. All ground-disturbing activities associated with the creation of new campsites and facilities would have the potential to adversely impact those sites.

The reduced numbers of day use and overnight visitors proposed under the Alternative 3 actions to manage visitor use and facilities in Segment 2 would not have a measureable effect on archeological resources. While visitor use can and does affect sites, impacts are much more dependent on local use specific to areas that contain one or more archeological resources. A reduction in the overall visitor numbers would not necessarily reduce impacts on individual sites.

Restoration of floodplain and other ecosystems in former campsites would result a potential for impacts restoration activities. Implementation of mitigation measures MM-AR-2 (controlled subsurface testing and treatment plan) and/or MM-AR-3 (archeological monitoring) presented in Appendix C would reduce or avoid the potential adverse effects. Similarly, implementation of MM-AR-2 would reduce or avoid adverse effects associated with construction of new or replacement campsites, concessioners' housing, parking spaces, and a shuttle stop.

Yosemite Lodge and Camp 4. Under Alternative 3, proposed new parking spaces west of Yosemite Lodge and a formal shuttle stop at Camp 4 could encroach on known archeological sites. Ground disturbances associated with these actions could result in adverse impacts on shallow subsurface cultural deposits.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

No actions under Alternative 3 to protect and enhance river values in Segments 3 and 4 would affect archeological resources beyond those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

No actions under Alternative 3 to manage visitor use and facilities in Segments 3 and 4 would affect archeological resources beyond those actions common to Alternatives 2–6.

Segments 5, 6, 7 and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, actions include removal and restoration of the Wawona Golf Course and relocation of two Wawona stock camp sites out of a known cultural site to a location next to the Wawona stables. Mitigation measures MM-AR-2 (and/or 3 see Appendix C) are recommended to avoid potential adverse effects, resulting in no historic properties affected.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 3, the Wawona tennis courts would be removed and two stock campsites would be relocated to the Wawona stables from their current location within a sensitive resource area in the Wawona stock camp. Similarly, some campsites would be removed from archeological sites within the Wawona Campground. A bus stop at Wawona Store would be redesigned to accommodate visitor use.

Implementation of mitigation measure MM-AR-3 (archeological monitoring, see Appendix C) during removal of the tennis courts would reduce or avoid potential adverse effects.

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

A number of the Alternative 3 management actions would have the potential to result in minor to major impacts on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal. These could result in short-term exposure of site

soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendix C) would delineate the process by which a site could be tested and characterized, and an appropriate treatment plan developed. Mitigation measure MM-AR-3 (see Appendix C) would provide for an archeological monitor to be present for minimally invasive construction and restoration ground-disturbing activities within sites.

Some of the management actions associated with Alternative 3 would result in long-term, beneficial impacts on known archeological sites, either through restrictions on types of visitor use that can cause damage to sites camping), restoration of areas that have been the focus of inappropriate use such as informal trails or recreational facilities), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that may ultimately benefit a resource also have the potential to adversely impact site elements if done in an inappropriate or careless manner. Mitigation recommendations have been included in the impact discussion as appropriate, to reduce or avoid adverse effects. Under Alternative 3, fewer campsites and other facilities would be removed from archeologically sensitive areas, but correspondingly less new construction would occur in known archeological sites.

Actions in the West Valley of Segment 2 predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In the East Valley, impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

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

Past Actions

Past actions listed in Appendix B included some manner of ground-disturbing activities (road construction, housing unit removal or construction, recontouring land for habitat restoration), were subject to federal regulations, including NEPA and section 106 of the NHPA (see Appendix J). Furthermore, the 2008 programmatic agreement and MRP programmatic agreement will include provisions to consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. Information learned during this process continues to inform the current body of knowledge about archeological resources at Yosemite. To date, several major archeological research projects have resulted from activities conducted for these actions.

Present Actions

The *Yosemite National Park Fire Management Plan/EIS* contains provisions regarding proper treatment and recording of archeological resources; however, this plan does not contain specific plans for archeological research. In addition to the *Yosemite National Park Fire Management Plan/EIS*, the *Programmatic Parkwide Yosemite Facelift Volunteer Event* (2011) resulted in categorical exclusions signifying that no significant environmental effects (including effects on cultural resources) has occurred or will occur.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS* as well as the preferred alternatives for the *Merced River Plan/EIS* and the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the three plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such

resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

By following the processes and provisions of federal regulations and internal documents (e.g., the 1999 and/or 2008 programmatic agreements, MRP programmatic agreement, *Management Policies 2006*, and others), the park would consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. If mitigation through these means is not feasible, park archeologists may consult with the ACHP. With avoidance measures in place, many sites may still be adversely affected by facilities construction, especially in Yosemite Valley and El Portal. Beneficial impacts on individual sites may result from restoration of natural vegetation communities and resulting reduction of erosion, trampling, and other visitor use impacts.

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

Many of the combined past, present, and reasonably foreseeable future actions would have a negligible or beneficial impact on archeological resources. For those actions with potential adverse impacts, implementation of all appropriate mitigation and consultation would reduce the potential for, or avoid those impacts.

Environmental Consequences of Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

All River Segments

Table 9-209 summarizes proposed actions under Alternative 4, and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

Impacts of Actions to Protect and Enhance River Values

No actions to protect and enhance river values, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

None of the proposed Alternative 4 actions to manage visitor use and facilities, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 4 actions to protect and enhance river values, other than those actions common to Alternatives 2–6, would have the potential to affect archeological resources.

TABLE 9-209: IMPACTS FROM ALTERNATIVE 4 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	None of the overall actions to protect and enhance river values in all river segments would affect archeological resources beyond those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
All segments	None of the overall actions in any of the river segments to manage visitor use and facilities would affect archeological resources beyond except those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Protect and Enhance River Values		
Segment 1	Reduce designated camping and remove bear boxes at Little Yosemite Valley Backpackers Campground Expand Merced Lake Backpackers Campground into portions of former Merced Lake High Sierra Camp Close Merced Lake High Sierra Camp, with restoration Limit numbers of hikers Archeological sites would be considered in planning and avoided when possible	Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in a local, long-term beneficial impact on known archeological sites found within the Yosemite Valley Backpackers Campground and Merced Lake High Sierra Camp area, by redirecting visitor use away from sensitive areas. Proposed expansion of the Merced Lake Backpackers Campground is proposed in an area without archeological sites; there would be no adverse impact. Assuming avoidance is not possible, ground disturbing activities associated with removal of infrastructure and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate adverse impacts on known archeological sites.
Actions to Manage Visitor Use and Facilities		
Segment 1	Reduce designated camping and remove bear boxes at Little Yosemite Valley Backpackers Campground Expand Merced Lake Backpackers Campground into portions of former Merced Lake High Sierra Camp Close Merced Lake High Sierra Camp, with restoration Limit numbers of hikers Archeological sites would be considered in planning and avoided when possible	Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in a local, long-term beneficial impact on known archeological sites found within the Yosemite Valley Backpackers Campground and Merced Lake High Sierra Camp area, by redirecting visitor use away from sensitive areas. Proposed expansion of the Merced Lake Backpackers Campground is proposed in an area without archeological sites; there would be no adverse impact. Assuming avoidance is not possible, ground disturbing activities associated with removal of infrastructure and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate adverse impacts on known archeological sites.
Actions to Protect and Enhance River Values		
Segment 2	Remove and/or relocate campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new recreational vehicle campsites at Upper Pines Loop addition	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in a local, long-term beneficial impact. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, new construction and other ground disturbing activities could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, and minor to moderate, in cases where avoidance is not possible.

TABLE 9-209: IMPACTS FROM ALTERNATIVE 4 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values (cont.)		
Segment 2 (cont.)	Create new campsites at the Upper and Lower River campgrounds, Upper Pines addition, the Curry Village stables area, and west of Yosemite lodge Remove various facilities associated with Yosemite lodge Move and formalize the Yosemite Village Day-use Parking Area Construct new concessioner employee housing and parking areas Replace temporary housing at Lost Arrow in Yosemite Village with permanent housing. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage. Construct new parking west of Yosemite Lodge Construct a traffic circle at the Village Drive/Northside Drive intersection Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Construct a shuttle stop for Camp 4 Archeological sites would be considered in planning and avoided when possible	
Segment 2	Restore portions of Stoneman Meadow Remove portions of Southside Drive and the Curry Orchard parking lot Conduct several habitat restoration actions within the East Valley campgrounds Remove facilities and infrastructure restoration of floodplain and riparian habitat in Housekeeping Camp Remove Sugar Pine and Ahwahnee bridges and reroute trail that currently extends between these bridges Reroute portions of the Valley Loop Trail out of the meadow Archeological sites would be considered in planning and avoided when possible	In areas where no archeological resources have been recorded Stoneman Meadow, Curry Orchard parking Lot, Boys Town housing area), there would be a negligible impact on archeological properties. Proposed removal of campsites and associated infrastructure within the East Valley campgrounds would potentially result in local, long-term beneficial impacts on the known archeological sites found within the campgrounds, by redirecting visitor use away from sensitive areas. Ground disturbing activities associated with removal of infrastructure and facilities, and restoration of former camping areas could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate, adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity, in cases where avoidance is not possible. Removing the northern abutment of Sugar Pine Bridge could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in a local, long-term major adverse impact to the known archeological site. Ground disturbing activities associated with removal of the bridges and rerouting the associated trail could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may also result in local, long-term, minor to major adverse effects from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity.

TABLE 9-209: IMPACTS FROM ALTERNATIVE 4 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities		
Segment 2	Remove and/or relocate campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new recreational vehicle campsites at Upper Pines Loop addition Create new campsites at the Upper and Lower River campgrounds, Upper Pines addition, the Curry Village stables area, and west of Yosemite lodge Remove various facilities associated with Yosemite lodge Move and formalize the Yosemite Village Day-use Parking Area Construct new concessioner employee housing and parking areas Replace temporary housing at Lost Arrow in Yosemite Village with permanent housing. Relocate the Superintendent's House to the NPS residential area in Yosemite Village. Demolish the Superintendent's Garage. Construct new parking west of Yosemite Lodge Construct a traffic circle at the Village Drive/Northside Drive intersection Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Construct a shuttle stop for Camp 4 Archeological sites would be considered in planning and avoided when possible	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in a local, long-term beneficial impact. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, new construction and other ground disturbing activities could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, and minor to moderate, in cases where avoidance is not possible.
Actions to Protect and Enhance River Values		
Segments 3 and 4	No proposed actions to protect and enhance river values in Segments 3 and 4 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
Segments 3 and 4	Construction of high-density employee housing and remote visitor parking in Abbieville and Trailer Village	Assuming avoidance is not possible, ground disturbing may occur in or near known archeological site. This action could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. During these actions, impacts would be local, long-term, minor to moderate, and adverse.

TABLE 9-209: IMPACTS FROM ALTERNATIVE 4 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Relocate sites to Wawona stables Continued use of Wawona golf course	Actions to remove two stock campsites from near known archeological sites would result in local long-term, beneficial impacts by stabilizing elements of archeological features and preventing future disturbances. At the Wawona Golf Course, continued use of golf course will occur in or near known archeological sites; impacts would likely be negligible as golf course fill covers the site.
Actions to Manage Visitor Use and Facilities		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove 32 campsites in Wawona Campground	Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas, by redirecting visitors away from sensitive areas. Ground disturbing may occur in or near known archeological site during these actions, and could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, minor to moderate adverse impacts.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Some of the Alternative 4 actions related to management of visitor use and facilities in Segment 1 include reducing designated camping and removing bear boxes at Little Yosemite Valley Backpackers Campground, and expanding Merced Lake Backpackers Campground into the former Merced Lake High Sierra Camp. The Merced Lake High Sierra Camp would be closed, restored to a natural condition, and redesignated as Wilderness, while limits on the number of hikers between Little Yosemite Valley and Merced Lake would also be enacted through a pass or wilderness trailhead quota system.

Little Yosemite Valley Campground is located largely within a known prehistoric archeological site. The proposed reduction in designated campsites and removal of bear boxes under Alternative 4 would reduce the number of visitors, thereby lessening erosion and trampling.

The Merced Lake High Sierra Camp is located partially within a known prehistoric archeological site. Closure of the camp and its infrastructure, with restoration of the area to a natural condition would remove some sources of concentrated visitor-use disturbances.

The trail between Little Yosemite Valley and Merced Lake crosses within or near the known boundaries of several archeological sites. Limiting pedestrian traffic on this trail through a zone pass or wilderness trailhead quota system (limit 100 hikers daily) would reduce the potential for disturbances to these sites by trampling, erosion, vandalism, or artifact collection.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Some of the Alternative 4 proposed actions to protect and enhance river values in Segment 2 have the potential to impact archeological resources. Proposed actions include restoring portions of Stoneman Meadow, removing portions of Southside Drive and the Curry Orchard Parking Area, conducting several habitat restoration actions within the East Valley campgrounds, rerouting portions of the Valley Loop Trail, and removing the Sugar Pine and Ahwahnee bridges and rerouting the trail that currently extends between these bridges.

There are no recorded archeological sites within Stoneman Meadow in the vicinity of the proposed restoration, nor have sites been recorded near the Curry Orchard Parking Area or in the Boys Town housing area. The proposed partial restoration of the Curry Orchard Parking Area is not in the vicinity of archeological resources. Removal of 1,335 feet of Southside Drive and realigning the road through the Boys Town housing area would occur in areas not known to contain archeological resources.

Under Alternative 4, removal of campsites from the East Valley campgrounds and restoration of floodplains and other sensitive habitats would be identical to that proposed under Alternative 3. Several archeological sites are located at least partially within the East Valley campgrounds. Removal of campsites and associated infrastructure and subsequent restoration of native vegetation within the campground areas would reduce visitor disturbance, although the restoration actions themselves could cause adverse impacts if artifacts are displaced or soils temporarily exposed to erosion during decompaction or revegetation activities. Several archeological sites are at least partially within the East Valley campgrounds. Removal of campsites and associated infrastructure and subsequent restoration of native vegetation within the campground areas restoration actions would result in ground disturbing activities that may result in impacts if artifacts are

displaced or soils temporarily exposed to erosion during decompaction or revegetation activities. Avoidance of known archeological sites is always the preference.

Construction of a traffic circle at the Village Drive/Northside Drive intersection is intended to address traffic congestion and pedestrian/vehicle conflicts. This is in the vicinity of known resources. Consideration (and avoidance if possible) of resources will occur during the planning stages.

Alternative 4 also calls for removal of the Sugar Pine and Ahwahnee bridges and the pedestrian trail between them. A large archeological site is directly adjacent to (and likely beneath) the northern abutment of Sugar Pine Bridge. Removal of the Sugar Pine Bridge has the potential to cause an adverse effect on this archeological site. Other than this exception, no archeological resources have been recorded in the immediate vicinity of either the Sugar Pine or the Ahwahnee bridges, or the multiuse trail between these two bridges. Rerouting the trail to the north side of the river may result in the trail encroaching on one or more of the known archeological sites in the likely reroute area.

Alternative 4 would reroute 420 feet of the Valley Loop Trail, itself a known historic property, out of wetland areas through Slaughterhouse and Bridalveil meadows. For other areas of trail reroutes, planning would consider impacts on archeological resources, and be located away from known archeological sites to the extent practicable. Mitigation measures MM-AR-2 (and/or -3, see Appendix C) would be necessary if it is not possible to reroute the trail off of, or away from, archeological resources.

While inadvertent discovery of archeological resources is not necessarily an impact in and of itself, discovery can result in damage to sites through exposure of artifacts to erosion, collection, and displacement. Implementation of mitigation measure MM-AR-1 (see Appendix C) is recommended to reduce potential impacts associated with inadvertent discovery. Likewise, a program of intensive surface survey and/or limited subsurface testing (MM-AR-2) is recommended for actions that would take place within or near the boundaries of a known archeological resource. An appropriate treatment plan could then be developed to reduce potential impacts associated with ground disturbance through construction or restoration.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 4, some campsites would be removed or relocated from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds. Removal areas would be restored with native vegetation. New RV campsites would be constructed at the Upper Pines Loop addition, and more new campsites (walk-in, drive-in, and RV) would be constructed at the former Upper and Lower River campgrounds, an Upper Pines addition, the Curry Village stables area, and west of Yosemite Lodge. Various facilities associated with Yosemite Lodge would be removed, and new concessioner employee housing and parking would be constructed in areas close to known archeological sites. Overall, peak day visitor numbers to the Valley would be about the same as current rates.

The pedestrian/vehicle conflict at the intersection of Yosemite Lodge Drive and Northside Drive would be addressed through tiered NEPA and NHPA compliance. New parking would be provided west of Yosemite Lodge, and a formal shuttle stop would be constructed for Camp 4. Unless avoidance is possible, this may result in local, long-term minor to major adverse impacts. Determination of effects is site specific. Mitigation measure MM-AR-1 for procedures in the event of inadvertent discovery and mitigation measure MM-AR-2 for testing, assessment, and treatment of known sites prior to ground disturbance may reduce the potential for, or avoid potential effects.

Under Alternative 4, replacement of removed sites at Backpackers Campground at a western extension of the campground and construction of new concessioner housing and parking near Yosemite Lodge would occur within or near known archeological sites in Segment 2. Likewise, construction of new campsites near the Curry Village stables and west of Yosemite Lodge would have the potential to encroach on known sites. All ground-disturbing activities associated with the creation of new campsites and facilities would have the potential to impact these sites.

New campsite construction at the former Upper and Lower River campgrounds would not affect known sites. An archeological resource is known to exist in the vicinity of the proposed Upper Pines Loop addition walk-in campground.

The numbers of day use and overnight visitors proposed under the Alternative 4 actions to manage visitor use and facilities in Segment 2 would not change enough from current levels to have a measureable impact on archeological resources. While visitor use can and does affect sites, effects are more dependent on local use specific to areas that contain one or more archeological resources.

Restoration of floodplain and other ecosystems in former campsites would potentially cause adverse effects on archeological sites during restoration activities. Implementation of mitigation measures MM-AR-2 (controlled subsurface testing and treatment plan) and/or MM-AR-3 (archeological monitoring) presented in Appendix C may reduce the potential adverse effects. Similarly, implementation of MM-AR-2 would reduce or avoid adverse effects associated with construction of new campsites and other facilities in the vicinity of known sites.

While inadvertent discovery of archeological resources is not necessarily an impact in and of itself, discovery can result in damage to sites through exposure of artifacts to erosion, collection, and displacement. Implementation of mitigation measure MM-AR-1 (see Appendix C) is recommended to reduce or reduce potential impacts associated with inadvertent discovery during construction of new campsites in the former Upper and Lower River campgrounds.

Yosemite Lodge and Camp 4. Proposed new parking spaces with Alternative 4 west of Yosemite Lodge and a formal shuttle stop at Camp 4 could encroach on known archeological sites.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

No actions proposed under Alternative 4 to protect and enhance river values in Segments 3 and 4 would affect archeological resources beyond than those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 4, remote visitor parking would be constructed in the Abbieville and Trailer Village area in Segment 4. Proposed parking for 200 vehicles would potentially be located on or near a known archeological site, and could result in impacts due to ground disturbance during construction. Avoidance of archeological sites is always the preferred action. If avoidance is not possible, mitigation measure MM-AR-2 (see Appendix C) describes the process of testing, assessment, and treatment that should be followed prior to beginning ground-disturbing activities within or near the known site boundary.

Segments 5, 6, 7 and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, two stock campsites would be removed from the Wawona stock camp (within a sensitive resource area). The Wawona Golf Course would not be removed under Alternative 4. Portions of several archeological sites are located within the Wawona Golf Course; the presence of golf course fill overlying cultural deposits may protect them. Continued use of the golf course would likely have a negligible impact on archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 4, two stock campsites would be relocated to the Wawona stables area. Thirty-two campsites would be removed from the Wawona Campground, many in archeologically sensitive areas.

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

Several of the management actions proposed under Alternative 4 would have the potential to result in minor to major adverse impacts on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal. These actions could result in short-term exposure of site soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendix C) would delineate the process by which a site could be tested and characterized, and an appropriate treatment plan developed. Mitigation measure MM-AR-3 (see Appendix C) would provide for an archeological monitor to be present for minimally invasive construction and restoration ground-disturbing activities within sites. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which any unanticipated discoveries would be handled so as to reduce or avoid disturbances to previously unknown sites.

A few of the management actions associated with Alternative 4 may result in long-term, beneficial impacts on known archeological sites, either through restrictions on types of visitor use that can cause damage to sites (camping), restoration of areas that have been the focus of inappropriate use (informal trails or recreational facilities), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that might ultimately benefit a resource also have the potential to adversely impact site elements.

Actions in the West Valley of Segment 2 predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In the East Valley, impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

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

Past Actions

Past actions listed in Appendix B included some manner of ground-disturbing activities (road construction, housing unit removal or construction, recontouring land for habitat restoration), were subject to federal regulations, including NEPA and section 106 of the NHPA (see Appendix J). The 2008 programmatic

agreement and MRP programmatic agreement contains provisions for consideration to protect archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. Information learned during this process continues to inform the current body of knowledge about archeological resources at Yosemite. To date, several major archeological research projects have resulted from activities conducted for these actions.

Present Actions

The *Yosemite National Park Fire Management Plan/EIS* and *Yosemite General Management Plan* contain provisions regarding proper treatment and recording of archeological resources; however, neither contains specific plans for archeological research. The *Programmatic Parkwide Yosemite Facelift Volunteer Event* (2011) resulted in categorical exclusions signifying that no significant environmental effects (including effects on cultural resources) has occurred or will occur.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS* as well as the preferred alternatives for the *Merced River Plan/EIS* and the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the three plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

By following the processes and provisions of federal regulations and internal documents (e.g., the 1999 and/or 2008 programmatic agreements, MRP programmatic agreement, *Management Policies 2006*, and others), the park would consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. If mitigation through these means is not feasible, park archeologists may consult with the ACHP to resolve adverse effects. With avoidance measures in place, many sites may still be adversely affected by facilities construction, especially in Yosemite Valley and El Portal. Beneficial impacts on individual sites may result from restoration of natural vegetation communities and resulting reduction of erosion, trampling, and other visitor use impacts.

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

Many of the combined past, present, and reasonably foreseeable future actions would have a negligible or beneficial impact on archeological resources. For those actions with potential adverse impacts, implementation of all appropriate mitigation and consultation would reduce the potential for, or avoid those impacts.

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

All River Segments

Table 9-210 summarizes proposed actions under Alternative 5, and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

Impacts of Actions to Protect and Enhance River Values

None of the proposed Alternative 5 actions to protect and enhance river values would have the potential to affect archeological resources beyond those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

None of the proposed Alternative 5 actions to manage visitor use and facilities would have the potential to affect archeological resources beyond those actions common to Alternatives 2–6.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

There are no actions under Alternative 5 to protect and enhance river values in Segment 1 other than those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 5, some infrastructure would be removed at the Little Yosemite Valley Backpackers Campground, Merced Lake Backpackers Campground, and the Merced Lake High Sierra Camp. Bear boxes would be removed from both backpackers campgrounds and flush toilets would be replaced with composting ones at the Merced Lake Backpackers Camp, but other infrastructure and campground capacities would remain the same as current conditions. Capacity at Merced Lake High Sierra Camp would be reduced to 42 beds per night, and the flush toilets and wastewater treatment system would be removed and replaced with composting toilets. No limits would be placed on the number of hikers on the trail between Little Yosemite Valley and Merced Lake.

Removal of permanent infrastructure at the Little Yosemite Valley Backpackers Campground and Merced Lake High Sierra Camp may have the potential to disturb subsurface cultural materials of known archeological sites. Avoidance of archeological sites is always preferred (even if the sites have not been formally evaluated, or determined to be ineligible for the NRHP, as they may have traditional cultural values outside of criterion D). If impractical to avoid, archeological monitoring (mitigation measure MM-AR-3, see Appendix C) is recommended during ground disturbing activities.

No archeological sites are known to exist in the immediate vicinity of the Merced Lake Backpackers Campground. The slight reduction in facilities and camping capacity would likely not result in any impact on cultural resources.

TABLE 9-210: IMPACTS FROM ALTERNATIVE 5 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	None of the overall actions to protect and enhance river values in all river segments would affect archeological resources beyond those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
All segments	None of the overall actions in any of the river segments to manage visitor use and facilities would affect archeological resources beyond except those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Protect and Enhance River Values		
Segment 1	Remove some infrastructure at Little Yosemite Valley Backpackers Campground, Merced Lake Backpackers Campground, Merced Lake High Sierra Camp Reduce capacity at Merced Lake High Sierra Camp	Proposed reduction of camping at Merced Lake High Sierra Camp would have a negligible impact on archeological sites in the area. Ground disturbing activities associated with removal of infrastructure could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate adverse impacts on known archeological sites, if avoidance is not possible.
Actions to Manage Visitor Use and Facilities		
Segment 1	Remove some infrastructure at Little Yosemite Valley Backpackers Campground, Merced Lake Backpackers Campground, Merced Lake High Sierra Camp Reduce capacity at Merced Lake High Sierra Camp	Proposed reduction of camping at Merced Lake High Sierra Camp would have a negligible impact on archeological sites in the area. Ground disturbing activities associated with removal of infrastructure could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate adverse impacts on known archeological sites, if avoidance is not possible.
Actions to Protect and Enhance River Values		
Segment 2	Remove and/or relocate some campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new campsites at the Upper River Campground, Upper Pines (additional RV sites) Move and formalize Yosemite Village Day-use Parking Area Demolish Superintendent's House and Garage. Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Construct a traffic circle at the Village Drive/Northside Drive intersection, as well as a 3-way intersection at Sentinel Drive and the entrance to the Village day-use parking area	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in a local, long-term beneficial impact. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, new construction, and other ground disturbing activities could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially occur during active ground disturbance. Unless avoidance is possible, this may result in local, long-term minor to moderate adverse impacts.

TABLE 9-210: IMPACTS FROM ALTERNATIVE 5 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values (cont.)		
Segment 2 (cont.)	Construct a shuttle stop for Camp 4 Archeological sites would be considered in planning and avoided when possible	
Segment 2	Conduct limited habitat restoration actions within the East Valley campground floodplains Redesign of Curry Orchard parking lot and associated infrastructure Removal of some East Valley campground sites, with restoration Conduct additional study to determine the hydrologic effects of Sugar Pine Bridge and consider a range of alternatives to manage the effects. Reroute portions of the Valley Loop Trail out of the meadow Archeological sites would be considered in planning and avoided when possible	In areas where no archeological resources have been recorded such as Curry Orchard parking Lot), there would be a negligible impact on archeological properties. Proposed removal of campsites and associated infrastructure within the East Valley campgrounds would potentially result in a local, long-term beneficial impact on the known archeological sites found within the campgrounds. If Sugar Pine Bridge is removed, the removal of the northern abutment could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in a local, long-term moderate adverse impact to the known archeological site. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas and areas of floodplains, and rerouting of the trail between bridges could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor to moderate adverse impacts from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity, if site avoidance is not possible. Ground disturbance and rerouting of the Valley Loop Trail would result in a local, long-term major adverse effect, as this trail is itself an historic property.
Actions to Manage Visitor Use and Facilities		
Segment 2	Remove and/or relocate some campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Restore areas with native vegetation Create new campsites at the Upper River Campground, Upper Pines (additional RV sites) Construct new concessioner employee housing and parking areas Construct new parking west of Yosemite Lodge Move and formalize Yosemite Village Day-use Parking Area Demolish Superintendent's House and Garage. Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Construct a traffic circle at the Village Drive/Northside Drive intersection, as well as a 3-way intersection at Sentinel Drive and the entrance to the Village day-use parking area	General reduction in focused visitor use at areas on or near known archeological resources would potentially result in a local, long-term beneficial impact. Adverse impacts on known archeological resources from restoration, facilities demolition, removal, new construction, and other ground disturbing activities could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would potentially occur during active ground disturbance. Unless avoidance is possible, this may result in local, long-term minor to moderate adverse impacts.

TABLE 9-210: IMPACTS FROM ALTERNATIVE 5 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities (cont.)		
Segment 2 (cont.)	Construct a shuttle stop for Camp 4 Archeological sites would be considered in planning and avoided when possible	
Actions to Protect and Enhance River Values		
Segments 3 and 4	No proposed actions to protect and enhance river values in Segments 3 and 4 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
Segments 3 and 4	Construction of high-density employee housing in Rancheria Flat, as well as RV-parking and remote visitor parking in Abbieville and Trailer Village Archeological sites would be considered in planning and avoided when possible	Ground disturbing may occur in or near known archeological sites during these actions; impacts could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, minor to moderate, and adverse.
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove some campsites in Wawona Campground Archeological sites would be considered in planning and avoided when possible	Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas, by redirecting visitors away from sensitive areas. Ground disturbing activities may occur in or near known archeological site during these actions; impacts could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, minor to moderate, and potentially adverse, if site avoidance is not possible.
Actions to Manage Visitor Use and Facilities		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove some campsites in Wawona Campground Archeological sites would be considered in planning and avoided when possible	Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas, by redirecting visitors away from sensitive areas. Ground disturbing activities may occur in or near known archeological site during these actions; these actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would result in local, minor to moderate, and potentially adverse, if site avoidance is not possible.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Some restoration of East Valley campground floodplains and other sensitive habitats would occur under Alternative 5. Hydrologic function of Stoneman Meadow would be improved through redesign of the Curry Orchard Parking Area and associated infrastructure. Removal of some East Valley campground sites would result in restoration of these areas. Sugar Pine Bridge would be retained under further analysis determining hydrologic impacts could be conducted.

Actions to reroute sections of the Valley Loop Trail would be the same as described for Alternative 2. Limited floodplain restoration under Alternative 5 means there would likely be fewer impacts to archeological sites during ground-disturbing activities. The proposed rerouting of the multiuse trail with Alternative 5 may disturb known archeological sites, unless avoidance is possible.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 5, facilities would be removed from the Yosemite Lodge area, and some concessioner's housing and parking. Some campsites would be removed from Backpackers, Lower Pines, and North Pines campgrounds, as well as two sites from Upper Pines Campground. Sixteen replacement sites would be constructed at the Backpackers Campground western extension. New camping at the former Upper River Campground, Upper Pines Loop (additional RV sites), and Upper Pines walk-in addition would also be created. Under Alternative 5, day use capacity would accommodate nearly all the current peak day use in Segment 2, accommodating more overnight visitors.

A shuttle stop would be constructed for Camp 4, and a tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. The final preferred alternative will include design guidelines to ensure that archeological impacts are avoided or minimized. Unless avoidance is possible, this may result in local, long-term minor to major adverse impacts. Mitigation measure MM-AR-1 for procedures in the event of inadvertent discovery and mitigation measure MM-AR-2 for testing, assessment, and treatment of known sites prior to ground disturbance may reduce the potential for, or avoid potential effects.

The reduction in campsite removal and habitat restoration proposed at the East Valley campgrounds would result in some lessening visitor use impacts on known sites in those areas. There may be potential impacts from ground disturbances associated with soil decompaction and revegetation. Mitigation measure MM-AR-1 for procedures in the event of inadvertent discovery and mitigation measure MM-AR-2 for testing, assessment, and treatment of known sites prior to ground disturbance may reduce the potential for or avoid potential impacts.

The numbers of day use and overnight visitors proposed under Alternative 5 to manage visitor use and facilities in Segment 2 would not change from current levels enough to have a measureable impact on archeological resources. While visitor use can and does impact sites, effects are much more dependent on local use specific to areas that contain one or more archeological resources.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

No actions proposed under Alternative 5 to protect and enhance river values in Segments 3 and 4 would affect archeological resources beyond those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 5, RV-parking and remote visitor parking would be constructed in the Rancheria Flat, Abbieville and Trailer Village area in Segment 4. Proposed parking for 40 RVs and 300 vehicles would potentially occur on or near a known archeological site, resulting in an adverse impact. Site design will avoid impacts to archaeological sites as much as possible, and analysis of effects will be more addressed through provisions of the programmatic agreement.

Segments 5, 6, 7 and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Two stock campsites would be removed from the Wawona stock camp (within a sensitive resource area). These campsites would be relocated to the Wawona Maintenance area where no archeological sites are known to occur) instead of the Wawona stables. This would result in a long-term beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

As above, the two campsites removed from the Wawona stock camp would be relocated to the Wawona Maintenance area. Some campsites would be removed from the Wawona Campground. Ground disturbing activities may occur in or near known archeological site during these actions. Mitigation measure MM-AR-1 for procedures in the event of inadvertent discovery and mitigation measure MM-AR-2 for testing, assessment, and treatment of known sites prior to ground disturbance may reduce the potential for, or avoid potential impacts.

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

Several of the management actions proposed under Alternative 5 have the potential to result in minor to major impacts on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal. These could result in short-term exposure of site soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendix C) would delineate the process by which a site could be tested, characterized, and an appropriate treatment plan developed, assuming site avoidance is not possible. Mitigation measure MM-AR-3 (see Appendix C) would provide for an archeological monitor to be present for minimally invasive construction and restoration. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which any unanticipated discoveries would be handled so as to reduce or avoid disturbances to previously unknown sites.

A few of the Alternative 5 management actions would result in long-term, beneficial impacts on known archeological sites, either through restrictions on types of visitor use that can cause damage to sites

(camping), restoration of areas that have been the focus of inappropriate use (informal trails or recreational facilities), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that may ultimately benefit a resource also have the potential to adversely impact site. Appropriate mitigation recommendations are addressed above.

Actions in the West Valley of Segment 2 predominantly include restoration actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor. In the East Valley, impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

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

Past Actions

Past actions listed in Appendix B included some manner of ground-disturbing activities (road construction, housing unit removal or construction, recontouring land for habitat restoration), were subject to federal regulations, including NEPA and section 106 of the NHPA (see Appendix J for Section 106 discussion). The 2008 programmatic agreement and MRP programmatic agreement contain provisions for consideration to protect archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. Information learned during this process continues to inform the current body of knowledge about archeological resources at Yosemite.

Present Actions

The *Yosemite National Park Fire Management Plan/EIS* and *Yosemite General Management Plan* contain provisions regarding proper treatment and recording of archeological resources; however, neither contains specific plans for archeological research. In addition to the *Yosemite National Park Fire Management Plan/EIS*, the *Programmatic Parkwide Yosemite Facelift Volunteer Event* (2011) resulted in categorical exclusions signifying that no significant environmental effects including effects on cultural resources) has occurred or will occur.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS* as well as the preferred alternatives for the *Merced River Plan/EIS* and the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the three plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

By following the processes and provisions of federal regulations and internal documents (e.g., the 1999 and/or 2008 programmatic agreements, MRP programmatic agreement, *2006 Management Policies*, and others), the park would consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. If mitigation through these means is not feasible, park archeologists may consult with the ACHP to resolve adverse effects. With avoidance measures in places, many sites may still be adversely affected by facilities construction, especially in Yosemite Valley and El Portal.

Beneficial impacts on individual sites may result from restoration of natural vegetation communities and resulting reduction of erosion, trampling, and other visitor use impacts.

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

Many of the combined past, present, and reasonably foreseeable future actions may have a beneficial impact on archeological resources.

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

All River Segments

Table 9-211 summarizes proposed actions under Alternative 6, and potential impacts to archeological sites, and then offers analysis under NEPA regulations.

Impacts of Actions to Protect and Enhance River Values

Beyond those actions common to Alternatives 2–6, none of the proposed Alternative 6 actions to protect and enhance river values would have the potential to affect archeological resources.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Beyond those actions common to Alternatives 2–6, none of the proposed Alternative 6 actions to manage visitor use and facilities would have the potential to affect archeological resources.

Segment 1: Merced River above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

No actions to protect and enhance river values are proposed for Segment 1 under Alternative 6 beyond those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The proposed Alternative 6 actions to manage visitor use and facilities would retain 60 beds at the Merced Lake High Sierra Camp.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Both Sugar Pine and Ahwahnee bridges would remain in place and the multiuse trail between these bridges would not be rerouted. Therefore, there would be no potential for an impact on a known archeological site north of the road. All other potential impacts are a result of actions to protect and enhance river values in Segment 2; recommended mitigation measures would be identical to those described for Alternative 5.

TABLE 9-211: IMPACTS FROM ALTERNATIVE 6 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values		
All segments	None of the overall actions to protect and enhance river values in all river segments would affect archeological resources beyond those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
All segments	None of the overall actions in any of the river segments to manage visitor use and facilities would affect archeological resources beyond except those actions common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Protect and Enhance River Values		
Segment 1	Remove some infrastructure at Little Yosemite Valley Backpackers Campground, Merced Lake Backpackers Campground, Merced Lake High Sierra Camp Reduce some capacity at Merced Lake High Sierra Camp Archeological sites would be considered in planning and avoided when possible	Proposed reduction of camping at Merced Lake High Sierra Camp would have a negligible impact on archeological sites in the area. Ground disturbing activities associated with removal of infrastructure could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor, adverse impacts on known archeological sites, if avoidance is not possible.
Actions to Manage Visitor Use and Facilities		
Segment 1	Remove some infrastructure at Little Yosemite Valley Backpackers Campground, Merced Lake Backpackers Campground, Merced Lake High Sierra Camp Reduce some capacity at Merced Lake High Sierra Camp Archeological sites would be considered in planning and avoided when possible	Proposed reduction of camping at Merced Lake High Sierra Camp would have a negligible impact on archeological sites in the area. Ground disturbing activities associated with removal of infrastructure could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor, adverse impacts on known archeological sites, if avoidance is not possible.
Actions to Protect and Enhance River Values		
Segment 2	Conduct limited habitat restoration actions within the East Valley campground floodplains Redesign of Curry Orchard parking lot and associated infrastructure Removal of some East Valley campground sites, with restoration Reroute portions of the Valley Loop Trail out of the meadow Archeological sites would be considered in planning and avoided when possible	In areas where no archeological resources have been recorded (such as Curry Orchard parking Lot), there is a negligible impact. Proposed removal of campsites and associated infrastructure within the East Valley campgrounds would potentially result in a local, long-term beneficial impact on the known archeological sites found within the campgrounds, by redirecting visitor use. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas and areas of floodplains could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that may result in local, long-term, minor adverse effects from artifact displacement, exposure to erosion, and loss of vertical and horizontal site integrity, if site avoidance is not possible. Ground disturbance and rerouting of the Valley Loop Trail would result in a local, long-term major adverse impact, as this trail is itself an historic property.

TABLE 9-211: IMPACTS FROM ALTERNATIVE 6 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Protect and Enhance River Values (cont.)		
Segment 2	Remove and/or relocate some campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Remove buildings in the Yosemite Lodge floodplain, and facilities in Housekeeping Camp Restore areas with native vegetation Create new campsites at the Upper and Lower River campgrounds, Upper Pines (additional RV sites), Eagle Creek Construct new parking west of Yosemite Lodge, West Valley Overflow Parking Construct new RV campsites west of Yosemite Lodge Construct a pedestrian underpass and traffic circle at the Village Drive/Northside Drive intersection and a 3-way intersection from Sentinel Drive and the Yosemite Village day-use parking area Construct a shuttle stop for Camp 4 Move Yosemite Village day-use parking north from river and formalize parking areas Construct a roundabout at the intersection of Sentinel Drive with Northside Drive Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Archeological sites would be considered in planning and avoided when possible	Reduction in campsite visitor use at areas on or near known archeological resources would potentially result in local, long-term beneficial impacts, by redirecting visitor use away from sensitive areas, although this impact could also be negligible. Impacts on known archeological resources from restoration, facilities demolition, removal, new construction, and other ground disturbing activities would potentially occur during active ground disturbance. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. Unless avoidance is possible, this may result in local, long-term minor to moderate adverse impacts.
Actions to Manage Visitor Use and Facilities		
Segment 2	Remove and/or relocate some campsites from Backpackers, Lower Pines, North Pines, and Upper Pines campgrounds Remove buildings in the Yosemite Lodge floodplain, and facilities in Housekeeping Camp Restore areas with native vegetation Create new campsites at the Upper and Lower River campgrounds, Upper Pines (additional RV sites), Eagle Creek Construct new concessioner employee housing and parking areas Construct new parking west of Yosemite Lodge, West Valley Overflow Parking Construct new RV campsites west of Yosemite Lodge	Reduction in campsite visitor use at areas on or near known archeological resources would potentially result in local, long-term beneficial impacts, by redirecting visitor use away from sensitive areas, although this impact could also be negligible. Impacts on known archeological resources from restoration, facilities demolition, removal, new construction, and other ground disturbing activities would potentially occur during active ground disturbance. These actions could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting. Unless avoidance is possible, this may result in local, long-term minor to moderate adverse impacts.

TABLE 9-211: IMPACTS FROM ALTERNATIVE 6 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities (cont.)		
Segment 2 (cont.)	Construct a pedestrian underpass and traffic circle at the Village Drive/Northside Drive intersection and a 3-way intersection from Sentinel Drive and the Yosemite Village day-use parking area Construct a shuttle stop for Camp 4 Move Yosemite Village day-use parking north from river and formalize parking areas Construct a roundabout at the intersection of Sentinel Drive with Northside Drive Tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) evaluating a range of alternatives addressing pedestrian/vehicle conflict at the Yosemite Lodge/Lower Yosemite Falls intersection Archeological sites would be considered in planning and avoided when possible	
Actions to Protect and Enhance River Values		
Segments 3 and 4	No proposed actions to protect and enhance river values in Segments 3 and 4 beyond those actions that are common to Alternatives 2–6.	Discussed in Table 9-206: Impacts from Actions Common to Alternatives 2–6
Actions to Manage Visitor Use and Facilities		
Segments 3 and 4	Construction of more high-density employee housing and remote visitor parking in Abbieville and Trailer Village Archeological sites would be considered in planning and avoided when possible	Ground disturbing may occur in or near known or newly discovered) archeological sites during these actions, impacts could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, minor to moderate, and potentially adverse, in cases where avoidance is not possible.
Actions to Protect and Enhance River Values		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Relocate sites to Wawona stables	Actions to remove two stock campsites from near known archeological sites would result in local, long-term beneficial impacts by stabilizing elements of archeological features and preventing future disturbances. Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. Ground disturbing may occur in or near known archeological site during these actions; impacts could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, minor to moderate, and potentially adverse, in cases where avoidance is not possible.

TABLE 9-211: IMPACTS FROM ALTERNATIVE 6 ACTIONS

Segment	Proposed Actions	Analysis under NEPA
Actions to Manage Visitor Use and Facilities		
Segments 5, 6, 7, and 8	Remove two stock campsites from Wawona stock camp Remove some campsites in Wawona Campground	Relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. Ground disturbing may occur in or near known archeological site during these actions; impacts could cause partial and total loss of archeological data as well as changes in characters of the property's use or setting that would be local, long-term, minor to moderate, and potentially adverse, in cases where avoidance is not possible.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Actions related to campsite removal and relocation in the East Valley campgrounds, new campsites and parking, new concessioner's housing and parking, and a shuttle stop at Camp 4 would be identical to those described for Alternative 5. Construction of 20 new RV campsites west of the Yosemite Lodge parking lot would occur as with Alternative 4. The pedestrian underpass proposed under Alternative 6 at the Yosemite Village day-use parking area could result in impacts to archeological resources unique to this alternative. Each of these actions would have the potential to impact archeological sites.

Actions unique to Alternative 6 in Segment 2 would include the construction of 250 overflow parking spaces at the West Valley Overflow Parking Area, a new Eagle Creek campground east of El Capitan Picnic Area with 79 car and recreational vehicle sites, and a traffic circle at the Yosemite Village day-use parking area intersection with Northside Drive as well as the previously described pedestrian underpass. Another roundabout would be constructed at the intersection of Sentinel Drive and Northside Drive. Each of the proposed actions would be located within or near known archeological sites, and consequently would have the potential to impact subsurface cultural deposits during ground-disturbing construction activities. Implementation of mitigation measure MM-AR-2 (see Appendices C and J) would result in site testing, assessment, and development of an appropriate treatment plan prior to construction, and may reduce potential adverse effects, unless site avoidance is possible.

The numbers of day use and overnight visitors proposed in Segment 2 under Alternative 6 would be the highest of Alternatives 2–6, and accommodate current peak day visitor parking and allow for annual growth of 3%. While visitor use can and does affect archeological resources, effects are much more dependent on local use specific to areas that contain one or more archeological resources. A steady increase in the rate of visitor use would not necessarily result in more impacts to individual sites.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

No actions proposed under Alternative 6 to protect and enhance river values in Segments 3 and 4 would affect archeological resources beyond those actions common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 6, proposed high-density housing would be developed to accommodate as many as 258 employees in the Abbieville and Trailer Village area in Segment 4. Remote visitor parking would also be constructed in this area. Construction of these facilities could result in an impact to a known archeological resource that exists in this area. Implementation of mitigation measure MM-AR-2 (see Appendices C and J) would provide a process for site testing, evaluating, and developing an appropriate treatment plan prior to ground-disturbing activity.

Segments 5, 6, 7 and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Actions that would have the potential to affect archeological resources in Segments 5– 8 under Alternative 6 would be the same as those described for Alternative 4. Removal of two stock camp sites from the sensitive resource that is located near the Wawona stock camp may reduce the potential for impacts.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 6, two stock campsites would be relocated to the Wawona stables, and 13 campsites would be removed. No other actions, other than those common to Alternatives 2–6, would have the potential to affect cultural resources in Segments 5–8.

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

Several of the management actions proposed under Alternative 6 would have the potential to result in minor to moderate impacts on known prehistoric and historic-era archeological resources through ground-disturbing actions related to restoration, construction, and facilities removal. These could result in exposure of site soils to erosional forces, displacement of artifacts, and diminished integrity of horizontal and vertical site patterning. Mitigation measure MM-AR-2 (see Appendices C and J) would delineate the process by which a site could be tested, characterized, and an appropriate treatment plan developed, whenever site avoidance is not possible. Mitigation measure MM-AR-3 (see Appendix C) would provide for an archeological monitor to be present for minimally invasive construction and restoration ground-disturbing activities within sites. Mitigation measure MM-AR-1 (see Appendix C) describes the process by which any unanticipated discoveries would be handled so as to minimize disturbances to previously unknown sites.

A few of the management actions associated with Alternative 6 would result in long-term, beneficial impacts on known archeological sites, either through reductions of types of visitor use that can cause damage to sites (camping), restoration of areas that have been the focus of inappropriate use (informal trails or recreational facilities), or stabilization of site surfaces through revegetation and other restorative actions. In some instances, actions that may ultimately benefit a resource also have the potential to adversely impact site elements.

Actions in the West Valley of Segment 2 predominantly include restoration, along with campground and parking construction actions that would result in impacts to the Yosemite Valley Archaeological District and Merced Canyon Travel Corridor, and other archaeological sites. In the East Valley, impacts would include those to the Yosemite Valley Archaeological District and other archaeological sites.

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

Past Actions

Past actions listed in Appendix B included some manner of ground-disturbing activities (road construction, housing unit removal or construction, recontouring land for habitat restoration), were subject to federal regulations, including NEPA and section 106 of the NHPA (see Appendix J). The 2008 programmatic agreement and MRP programmatic agreement contain provisions for consideration to protect archeological

resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. Information learned during this process continues to inform the current body of knowledge about archeological resources at Yosemite. To date, several major archeological research projects have resulted from activities conducted for these actions.

Present Actions

The *Yosemite National Park Fire Management Plan*/EIS contains provisions regarding proper treatment and recording of archeological resources; however, this plan does not contain specific plans for archeological research. The *Programmatic Parkwide Yosemite Facelift Volunteer Event* (2011) resulted in categorical exclusions signifying that no significant environmental effects including effects on cultural resources) has occurred or will occur.

Under Alternative 4 (preferred) of the *Tuolumne River Wild and Scenic River Management Plan/EIS* as well as the preferred alternatives for the *Merced River Plan/EIS* and the *Restoration of the Mariposa Grove of Giant Sequoias/EIS*, there are prehistoric archeological resources that could incur physical damage or destruction to all or part of the resource. The cumulative impact of these actions across the three plans could result in an adverse impact to prehistoric archeological resources or the religious and cultural significance of such resources park-wide. Additional archeological research and consultation with traditionally-associated American Indian tribes and groups is necessary during the design and implementation phases of these plans to understand the extent of the effects and further identify opportunities for avoidance, minimization, and mitigation.

Reasonably Foreseeable Future Actions

By following the processes and provisions of federal regulations and internal documents e.g., the 1999 and/or 2008 programmatic agreements, MRP programmatic agreement, *2006 Management Policies*, and others), the park would consider protection of archeological resources which may include consultation, survey, testing, monitoring, and data recovery prior to each project. If mitigation through these means is not feasible, park archeologists may consult with the ACHP to resolve adverse effects. With avoidance measures in places, many sites may still be adversely affected by facilities construction, especially in Yosemite Valley and El Portal. Beneficial impacts on individual sites may result from restoration of natural vegetation communities and resulting reduction of erosion, trampling, and other visitor use impacts.

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

Many of the combined past, present, and reasonably foreseeable future actions would have a negligible or beneficial impact on archeological resources. For those actions with potential adverse impacts, implementation of all appropriate mitigation and consultation would reduce or avoid those impacts.

American Indian Traditional Cultural Resources

American Indian traditional cultural resources within the Merced Wild and Scenic River corridor include ethnohistoric village sites, traditional-use plant population areas, resources of religious and cultural significance, archeological sites, and areas with other important qualities or uses among traditionally associated American Indians. The National Register of Historic Places (NRHP, or National Register) includes a process for formalizing and recording traditional cultural resources as Traditional Cultural Properties (TCPs). To date, within the MRP project area no TCPs have been evaluated for listing in the National Register. Appendix J contains more detailed information about the Section 106 Process, and the considerations for evaluating properties for listing on the National Register.

Traditional resources have value beyond those defined within the National Register. Resources that do not meet the National Register eligibility criteria or have not yet been evaluated still qualify as significant ethnographic resources under NEPA and the NPS 2006 Management Policies. As examples, traditional-use plant population areas, geographic features important in stories and songs, archeological sites valued for reasons beyond data potential, or other locations of religious or cultural significance may not fit typical definitions of National Register status. For this reason, the analysis below follows NEPA compliance methodology. The NPS works closely with culturally associated American Indian tribes and groups to identify such resources and protect those characteristics that convey their cultural significance, regardless of National Register status.

Three areas in particular stand out for their association with traditional cultural resources: Yosemite Valley Historic District, Wawona Archeological District, and the El Portal Archeological District. In discussion of its significance, the 1976 National Register nomination of the Yosemite Valley Historic District noted "The remains of past Indian occupation have significance for archeological and environmental research, evidence of a unique tie and a native ethnic population, and value for interpretation in the Park." While this "unique tie" has not been formalized, the intent of recognition of values beyond data potential is apparent. Similarly, the 1978 National Register nominations of the Wawona Archeological District and El Portal Archeological District note that the areas are known and recognized based on archeological and ethnographic research and resources.

The park has ongoing consultation relationships with American Indian tribes and groups – including the Bishop Paiute Tribe, Mono Lake Kudzadika[a], American Indian Council of Mariposa County (AICMC), Picayune Rancheria of the Chukchansi Indians, Tuolumne Band of Me-Wuk Indians, Bridgeport Indian Colony, and the North Fork Rancheria of Mono Indians of California – to identify, document and protect culturally significant ethnographic resources. The need for tribal consultation tribal is discussed throughout this document. Mitigative measures developed in consultation with traditionally associated tribes and groups may be necessary to address potential impacts to culturally significant ethnographic resources during implementation of the plan.

Chapter 10 and Appendix J identify the consultation efforts among the NPS and the traditionally associated American Indian tribes and groups that have contributed to the development of alternatives and strategies to avoid or minimize adverse impacts and effects to traditional cultural resources. The plan-specific programmatic agreement promulgates additional guidelines for necessary consultation with American Indian tribes and groups as site-specific details for particular actions are developed and the undertaking is implemented.

Affected Environment

Numerous federal laws, statutes, and regulations have been enacted to protect the country's cultural heritage. The most applicable regulations to the proposed undertaking are summarized below. In addition, NPS has several internal policies, also listed here.

Regulations and Policies

Section 106 of National Historic Preservation Act 1966 (as amended). Section 106 of the National Historic Preservation Act of 1966 (NHPA) (16 USC 470) directs federal agencies to take into account the effects of any undertaking on properties listed in or eligible for listing in the NRHP. The Advisory Council on Historic Preservation (ACHP) has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties. Section 101(d)(6)(B) of the act requires the agency official to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking. The lead federal agency is responsible for project compliance with sections 101 and 106 of the NHPA. Appendix J contains more information on the Section 106 process and assessment of adverse effects for the preferred alternative.

National Environmental Policy Act 1969. The National Environmental Policy Act (NEPA) establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the federal agencies. Section 102 requires federal agencies to incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. NEPA is triggered whenever the NPS considers an action that could have impacts on the human environment. While the statutory language of NEPA does not mention Indian tribes, the Council on Environmental Quality (CEQ) regulations and guidance require agencies to contact Indian tribes and provide them with opportunities to participate at various stages in the preparation of an EA or EIS. CEQ has issued a Memorandum for Tribal Leaders encouraging tribes to participate as cooperating agencies with federal agencies in NEPA reviews. Section 40 CFR 1501.2(d)(2) requires that Federal agencies consult with Indian tribes early in the NEPA process. Other sections also refer to interacting with Indian tribes while implementing the NEPA process. CEQ defines the human environment as the natural and physical environment, and the relationship of people with that environment (1508.14). The human environment includes historic, cultural, and social resources.

Cultural Resources Management Plan (1979). The Cultural Resources Management Plan completed for the Yosemite General Management Plan was designed to protect the significant cultural resources of the park through compliance with all cultural resource legislative, executive, and regulatory requirements. The Cultural Resources Management Plan provides specific policies to guide cultural resources management at Yosemite, including consultation, survey and evaluation, preservation/restoration/reuse, and documentation.

Native American Graves Protection and Repatriation Act (1990, 5 USC 3001 et seq.). This act provides for the protection and repatriation of Native American human remains and cultural items, and requires notification of the relevant Native American tribes and groups upon the intentional excavation or inadvertent discovery of human remains and other cultural items.

American Indian Religious Freedom Act of 1978 (42 USC 1996). This act preserves for American Indians and other indigenous groups the right to express traditional religious practices, including access to sites under federal jurisdiction. Yosemite National Park complies with this act by consulting with traditionally

associated American Indian tribes and groups, working with them to support traditional religious events and practices to the maximum extent possible, and accommodating access to and ceremonial use of sites, within the constraints of law and policy.

Executive Order 13007: Indian Sacred Sites (1996). Executive Order 13007 directs federal agencies with statutory or administrative responsibility for the management of federal lands, to the extent practicable and permitted by law, to accommodate access to and ceremonial use of Indian sacred sites by American Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

1999 Programmatic Agreement. Yosemite National Park, in consultation with the ACHP, the California SHPO, American Indian tribes, and the public, has developed a programmatic agreement for planning, design, construction, operations, and maintenance activities. This programmatic agreement provides a process for compliance with NHPA and includes stipulations for identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties, including potentially eligible historic properties. Under the 1999 PA, the park is obligated to "make every reasonable effort to avoid adverse effects to Historic Properties . . .through project design, facilities' location, or other means. Avoidance alternatives will be documented during the NEPA process." This programmatic agreement expires in 2014, and if a new programmatic agreement is not completed, the 2008 nationwide programmatic agreement in conjunction with standard compliance under 36 CFR 800 will provide guidance for park activities.

Executive Order 13175. Enacted in 2000, the purpose of this executive order was to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications. Its intent was to strengthen the United States government-to-government relationships with Indian tribes.

2008 Programmatic Agreement. This programmatic agreement provides nationwide coordination between the NPS, the ACHP, and the National Conference of SHPOs for the section 106 compliance process. The NHPA, 36 CFR 800, and the programmatic agreement provide the NPS with a roadmap to plan for and carry out undertakings to minimize harm to cultural resources.

Proposed Merced River Plan Programmatic Agreement. As a part of the current Merced Wild and Scenic River Comprehensive Management Plan, the Park is proposing, via consultation with the ACHP, OHP, and traditionally associated American Indian tribes and groups, the development of a programmatic agreement regarding consultation and treatment of historic resources under the proposed management. This document will provide guidance for the necessary consultation that may recommend identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties with religious and cultural significance to American Indian tribes impacted by all future planning and design projects of the Merced River Plan. The plan-specific programmatic agreement has been developed through the NHPA consultation process (36 CFR Part 800). It identifies necessary on-going consultation requirements for general types of actions to address avoidance, minimization, or mitigation of adverse effects to historic properties. For a select subset of specific actions proposed under the preferred alternative, the agreement outlines detailed mitigation measures.

Director's Order 28 Cultural Resources Management Guideline (1998). Director's Order 28 guides the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS *Management Policies*. It also ensures that the NPS comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. Additionally, the NPS will comply with

the 2008 programmatic agreement with the ACHP and the National Conference of SHPOs. The NPS published the *2006 Management Policies* relating to the systemwide treatment of various types of resources on NPS lands. The following are some specific policies related to resources of the types discussed in the Director's Order; other sections within the *Management Policies* describe the processes for consultation with traditionally associated peoples:

1.11 Relationship with American Indian Tribes. The National Park Service has a unique relationship with American Indian tribes, which is founded in law and strengthened by a shared commitment to stewardship of the land and resources. The Service will honor its legal responsibilities to American Indian tribes as required by the Constitution of the United States, treaties, statutes, and court decisions. For the purposes of these policies, "American Indian tribe" means any band, nation, or other organized group or community of Indians, including any Alaska Native Village, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

1.11.1 Government-to-Government Relationship. In accordance with the Presidential Memorandum of April 29, 1994, and Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), the Service will maintain a government-to-government relationship with federally recognized tribal governments. This means that NPS officials will work directly with appropriate tribal government officials whenever plans or activities may directly or indirectly affect tribal interests, practices, and/or traditional use areas such as sacred sites.

1.11.2 Consultation. Consultations, whether initiated by a tribe or the Park Service, will be respectful of tribal sovereignty. The Federal Advisory Committee Act does not apply to consultation meetings held exclusively between federal officials and elected officers of tribal governments or their designees.

Tribal needs for privacy and confidentiality of certain kinds of information will be respected. Such information will be deemed confidential when authorized by law, regulation, or policy. Before beginning government-to-government consultations, park managers will consider what information is necessary to record. Culturally sensitive information will be collected and recorded only to the extent necessary to support sound management decisions and only in consultation with tribal representatives.

5.3.5 Treatment of Cultural Resources. The NPS will provide for the long-term preservation of, public access to, and appreciation of the features, materials, and qualities contributing to the significance of cultural resources. With some differences by type, cultural resources are subject to several basic treatments, including (1) preservation in their existing states; (2) rehabilitation to serve contemporary uses consistent with their integrity and character; and (3) restoration to earlier appearances by the removal of later additions and replacement of missing elements.

5.3.5.1 Archeological Resources. Archeological resources will be managed in situ, unless the removal of artifacts or physical disturbance is justified by research, consultation, preservation, protection, or interpretive requirements. Preservation treatments will include proactive measures that protect resources from vandalism and looting, and will maintain or improve their condition by limiting damage due to natural and human agents.

5.3.5.2 Cultural Landscapes. Treatment decisions will be based on a cultural landscape's historical significance over time, existing conditions, and use. Treatment decisions will consider both the natural and built characteristics and features of a landscape, the dynamics inherent in natural processes and continued use, and the concerns of traditionally associated peoples. The treatment implemented will be based on sound preservation practices to enable long-term preservation of a resource's historic features, qualities, and materials. There are three types of treatment for extant cultural landscapes: preservation, rehabilitation, and restoration.

5.3.5.3 Ethnographic Resources. Park ethnographic resources are the cultural and natural features of a park that are of traditional significance to traditionally associated peoples. These peoples are the contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations (40 years), and whose interests in the park's resources began before the park's establishment. Living peoples of many cultural backgrounds—American Indians, Inuit (Eskimos), Native Hawaiians, African Americans, Hispanics, Chinese Americans, Euro- Americans, and farmers, ranchers, and fishermen—may have a traditional association with a particular park.

5.3.5.3.1 Resource Access and Use. Consistent with the requirements of the Organic Act, the National Historic Preservation Act, American Indian Religious Freedom Act, the Archaeological Resources Protection Act, the National Environmental Policy Act, and Executive Order 13007 (Indian Sacred Sites) cited in section 5.3.5.3 above, the Service will strive to allow American Indians and other traditionally associated peoples access to and use of ethnographic resources. Continued access to and use of ethnographic resources is often essential to the survival of family, community, or regional cultural systems, including patterns of belief and sociocultural and religious life.

5.3.5.3.2 Sacred Sites. The National Park Service acknowledges that American Indian tribes, including Native Alaskans, treat specific places containing certain natural and cultural resources as sacred places having established religious meaning and as locales of private ceremonial activities. Consistent with Executive Order 13007 (Indian Sacred Sites), the Service will, to the extent practicable, accommodate access to and ceremonial use of Indian sacred sites by religious practitioners from recognized American Indian tribes and Alaska Natives, and avoid adversely affecting the physical integrity of such sacred sites.

Executive Order 11593: Protection and Enhancement of the Cultural Environment. Executive Order 11593 instructs all federal agencies to support the preservation of cultural properties. It directs them to identify and nominate cultural properties in Yosemite to the NRHP and to "exercise caution… to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered" (NPS 1971).

Scope of the Analysis

This section addresses American Indian traditional cultural resources and places for traditional practices and provides some background on ethnographic considerations. Traditional cultural resources are part of the collective use or knowledge of a place. Resources can include those used either by a community or by an individual for traditional activities, including traditional plant use, ceremony, and teaching. Some of the places considered are archeological sites and ethnographic villages, while others are places in stories and discussed in oral histories, and still others are places where material items were/are acquired, or where ceremonies are conducted. As noted above, NPS management policies define ethnographic resources as "the cultural and natural features of a park that are of traditional significance to traditionally associated peoples." This section considers assessments of the existing condition and potential impacts on American Indian resources under NEPA. As an example, in his ethnographic evaluation of Yosemite Valley Brian Bibby (1994a:15) described plant uses and plant-use areas that continue to be of special significance to traditionally associated American Indians. Bibby (1994a) especially highlighted the use of black oak acorn and mushrooms as food, wormwood for ceremonial use, and bracken fern, sedge roots, and deer grass for basketry. The Park also maintains a database with archeological sites and ethnographic resources identified as important to traditionally associated American Indian tribes and groups, found in various segments of the Merced River corridor (YNP 2010).

All River Segments –American Indian Traditional Cultural Resources

Ethnographic resources in the Merced Wild and Scenic River corridor represent an interconnected web of locations and resources, with the river as the central thread. Some of the important associations include the water and springs that feed the river, ethnobotanically important plants, unique geological features that figure in traditional songs and stories, areas of solitude for conducting ceremonies, and vistas that are unchanged from long ago. American Indian groups assign strong religious and cultural value to the Merced River and Yosemite Valley, and attach names and stories to geologic and other features in the river corridor. Archeological sites related to American Indian occupation of the Merced River corridor are also culturally significant. While impacts on National Register defined "scientific values" of archeological resources are addressed in a separate section, impacts on the American Indian association and values of these same sites are discussed here.

Important ongoing cultural practices include the traditional use of natural resources found within the river corridor, including plants and fungi for food, medicine, textiles, basketry, dyes and pigments, and ceremonial uses. These resources remain of religious and cultural significance to traditionally associated American Indians, who have continued to use plants and other resources into the present (Anderson 2005). These plants have specific ethnobotanical uses and are in many cases found primarily in the river-dependent meadows and marshes of Yosemite Valley (Heady and Zinke 1978).

Several locations within the Yosemite Valley and El Portal areas contain prehistoric sites that continued to be occupied into the 20th century. All but one ancient village site recorded by C. Hart Merriam in Yosemite Valley is also associated with archeological remains. Many locations of old villages are still known by name. Traditionally associated American Indians continue to live in and around the park, and many are employed by the NPS, the concessioner, or other local businesses. At least seven American Indian tribes and groups claim traditional associations with Yosemite. Individuals from these tribes and groups continue to maintain cultural associations with lands and resources in the park through cultural and religious practices.

Environmental Consequences Methodology

Formerly, methodology for assessing impacts to cultural resources identified by traditionally associated American Indians was based on stipulations of the 1999 PA. This included identifying areas and resources that could be impacted, identifying the extent and type of impacts (beneficial or adverse), and considering ways to avoid, reduce, or mitigate adverse impacts. NPS is currently developing a plan-specific programmatic agreement that more specifically addresses how tribal consultation will be incorporated into the process of identifying resources, and assessing and resolving adverse effects. For the MRP, the Park has not yet conducted project-specific consultation for each of the proposed actions. As a result, assessment of impacts to traditional cultural resources in this document is preliminary, and subject to change.

The present analysis is intended to fulfill the largely parallel goals of the regulatory programs and plan-specific programmatic agreement:

1. Produce (when possible) an inventory of traditional cultural resources in the Area of Potential Effects (1.5-mile buffer on either side of the river). Treat all documented ethnographic resources as culturally significant resources.
2. Recognize that additional culturally significant resources may be documented through future tribal consultations.

3. Assess the character and the severity of the impacts of the plan and alternatives on the significant cultural resources that cannot be avoided in each respective inventory.
4. Propose avoidance, minimization, and mitigation measures that would reduce or resolve adverse effects.

Through the overlay of geographic locales of documented traditional cultural resources and proposed actions, researchers assessed potential physical changes resulting from proposed plan actions. In instances of geographic overlap, both short-term and long-term impacts are estimated based on: the degree of physical change that would result from the action (e.g., minor disturbance from vegetation thinning, vs. moderate/major disturbance from building removal and grading or other earthwork); and the nature of the resource (i.e., traditional plant use area, ethnographic village site with archeological remains, religious and culturally significant locale, or other resource type).

In several instances, restoration or facilities-related actions would introduce visual, atmospheric, or audible elements that change the use or setting of a traditional use area or traditional cultural resource during construction or implementation phases, resulting in a short-term adverse impact, although the ultimate result of the action may be an improved condition for the resource or area (i.e., long-term beneficial impact).

For actions that would not result in physical changes to the resources, the primary consideration with regard to impacts on traditional cultural resources is continued accessibility. Again, assessment of these impacts in this document is preliminary and subject to change pending further consultation with American Indian tribes and groups. Although the Park will conduct additional consultation for these actions as part of the plan-specific programmatic agreement, results of preliminary consultation have been taken into account for the impact assessments in this section.

NEPA Compliance Methodology

Some actions, such as meadow restoration, may have a beneficial impact on traditional cultural resources (in this example, by increasing the conditions for traditional-use plant areas). Impacts on American Indian traditional cultural resources include damage, alteration, destruction, isolation, neglect, deterioration, limited accessibility, and other factors that may diminish the characteristics that make the place significant to the traditionally associated community. American Indian traditional cultural resources may also be impacted if the community's ability to access or use culturally significant resources or locations affects the way in which the community connects to the valued property. As an example, an increase in annual visitors to the park could increase visitor use and crowding at specific locations. This may result in impacts on the setting and feeling of culturally significant locations or resources. This can include visual and aural intrusions as well as physical alterations. Analyses of impacts on American Indian traditional cultural resources for NEPA purposes are based on: context, intensity, duration, and type of impact.

Context. The context of the impact considers whether the impact would be local, segmentwide, parkwide, or regional. Local impacts occur in a specific area within a segment of the Merced River. Some corridor-wide actions may have local impacts in multiple segments. Segmentwide impacts would consist of a number of local impacts within a single segment or larger-scale impacts that would affect the segment as a whole. Parkwide impacts would extend beyond the river corridor and the study area within Yosemite. Regional impacts would be those that extend to the Yosemite gateway region.

Intensity. The intensity of impact depends on the nature, location, and design of the proposed project. Intensity of impacts are described as:

- **Negligible.** Impact is barely perceptible and not measurable; confined to small areas of a particular site or traditional use area.
- **Minor.** Impact is perceptible and measureable; remains localized and confined to a single area of a particular site or traditional use area.
- **Moderate.** Impact is sufficient to cause a change in a character-defining feature; generally involves a single site or small group of sites within a traditional use area.
- **Major.** Impact results in a substantial and highly noticeable change in character-defining features; involves a large area of one site, or larger areas with high to exceptional ethnographic value.

Duration. Impacts to traditional cultural resources are described as short-term or long-term duration.

Type of Impact. Impacts can be considered to either be adverse or beneficial. Impacts are considered adverse when they have the potential to diminish significant characteristics of a resource. Adverse impacts may result from the following:

- Physical destruction to all or part of the resource.
- Alteration of a resource that is not consistent with the Secretary's Standards for Treatment of Historic Properties and applicable guidelines.
- Change of the character of the resource's use or of physical features within the resource's setting that contribute to its religious or cultural significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the resource's religious or cultural significance.

Beneficial impacts would protect access for traditional practitioners and improve the setting that contributes to the resource's religious or cultural significance.

The assessment of impacts on traditional cultural resources requires knowledge of the specific qualities of the resource that are considered culturally valuable. For example, if a particular meadow is valued for the species of medicinal plants that grow there, an increase or change in the amount of use of the meadow may not be an adverse impact as long as the plants are protected. If the same meadow is considered culturally significant, changes allowing increased visitor access/visitation or incompatible recreation activities would likely be considered adverse. Consequently, analysis of impacts on traditional cultural resources requires consultation with tribal governments, traditional cultural practitioners, and other traditionally associated American Indians.

Under NEPA, cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR § 1508.7). For traditional cultural resources, cumulative impacts are generally those that take place within a specified geographic area that contains similar or related resources. NEPA also requires a discussion of mitigation, and the appropriateness and effectiveness of mitigation. To best meet these requirements, ongoing tribal consultation over the life of the project will be critical, as well as adherence to the plan-specific programmatic agreement.

American Indian traditional cultural resources in the Merced River corridor are qualitatively analyzed based on existing knowledge, and assessing what potential modifications could alter character-defining features. Actions specific to individual alternatives that would affect these historic properties are described under each alternative.

Appendix C contains mitigation measures that may reduce the potential for impacts, and contain provisions and requirements for consultation with traditionally associated cultural groups. Mitigation measure MM-AR-1 notes that National Register eligibility determinations and potential impacts to traditional cultural resources are determined in consultation with traditionally associated tribes and groups. This measure also contains provisions for appropriate protocols in the event that human remains are encountered. Mitigation Measure MM-AR-3 notes that the presence of Native American monitors may be appropriate during some ground disturbing activities, and consultation would occur prior to some ground-penetrating work such as excavation, trenching, drilling, or stump and root removal in culturally sensitive areas.

Environmental Consequences of Alternative 1 (No Action)

In this and following sections, impacts are summarized for different types of proposed management actions (including No Action) that would occur in each Wild and Scenic River segment. Many actions have been determined to have no impact on traditional cultural resources, typically because there is no geographic correlation between the action and any documented ethnographic resources. In order to protect confidential resource data, ethnographic sites are not individually named nor are their exact locations relative to the management actions revealed.

The following discussion provides an overview of the types of impacts that could occur with regards to American Indian traditional cultural resources within the Merced River corridor from application of Alternative 1 (No Action). NPS recognizes that there may be National Register-eligible (but as yet not defined) traditional cultural properties within the study area, in all segments of the river corridor. Scientific data related to archeological sites is addressed in "Archeological Resources" section earlier in this chapter, and in Appendix J. Archeological sites (currently listed, potentially eligible, and not-listed) that have not yet been evaluated may also have religious or cultural significance for traditionally associated American Indians.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Traditionally associated American Indian communities continue to conduct ceremonies and other traditional cultural practices in Yosemite as they have for many generations. Yosemite Valley is a traditional location for many seasonal ceremonies and events. Areas within Segment 2 are used for seasonal ceremonies and communal cultural gatherings, as well as life-cycle occasions such as weddings and funerals. Many of these events are held during the park's peak visitation season, and require the use of the Yellow Pines group campground. Other important ongoing cultural practices include the traditional use of native plant species found within the meadows, riparian habitat, and black oak groves of the Valley.

Under Alternative 1 (No Action), management of ethnobotanical resources, access to traditional use plant populations, sacred sites, and culturally-important views and vistas would remain unchanged from current conditions. Habitat restoration activities would be conducted in riparian and meadow areas as currently is allowed per the Settlement Agreement (2009). No campsites or abandoned infrastructure (with the exception

of the El Portal Waste Water Treatment Plant) and other facilities would be removed from known village sites and other archeological resources. No informal trails would be removed and restored in ethnographic sites, meaning that all park visitors could continue to access, and potentially damage, these resources through inappropriate use, trampling of ethnobotanically important plants, or artifact collection and vandalism. While many of the proposed restoration actions would have long-term, beneficial impacts on ethnographic resources that would not occur under Alternative 1, neither would there be a potential for adverse impacts associated with physical disturbance of resources and decreased access to important sites and traditional-use plant population areas during restoration activities, which would also be possible under Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 1 (No Action),ongoing concerns expressed by traditionally associated American Indians would continue. These include the decline in black oak seedling and sapling survival rates and visitor use impacts to ethnohistoric village locations and archeological sites. Alternative 1 would provide no opportunities to improve populations of ethnobotanically important plants through removal of facilities or reductions in user capacity.

Segment 4: El Portal

Impacts of Actions to Protect and Enhance River Values

Segment 4 contains several locations along the Merced River that are known as traditional-use plant populations, notably those used in basketry. Traditionally associated American Indians and the NPS manage stands of redbud, willow, sourberry, and other materials for their cultural values as well as their critical role in the local ecosystem. Under Alternative 1 (No Action), opportunities for managing the populations and health of these species would occur as currently is allowed per the Settlement Agreement (2009).

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

While no additional adverse impacts would occur under Alternative 1, there would also be no opportunity for improved access to or protection of ethnographic resources resulting from facilities removal or reduction in user capacity.

Segment 7: Wawona Campground and Store

Impacts of Actions to Protect and Enhance River Values

Segment 7 contains a dense assemblage of archeological sites including a large site in the area of the northernmost campground "loop." Similarly, there is a known archeological site in the area of the Wawona Store. Under Alternative 1 (No Action), no additional opportunities for protecting sensitive archeological resources would occur.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Issues associated with Alternative 1 (No Action) are ongoing concerns by traditionally associated American Indians regarding maintenance protection of archeological sites from visitor use impacts. Alternative 1 would provide no additional opportunities for managing these impacts that result from what is currently allowed under the Settlement Agreement (2009).

Summary of Alternative 1 (No Action) Impacts

Under Alternative 1 (No Action), impacts on traditional cultural resources would be negligible under NEPA criteria. There would be no planned changes in the treatment of traditional cultural resources in the Merced River corridor. Impacts on these resources would occur as a result of ongoing park operations and programs, such as facilities maintenance and repair, as well as visitor use. The projected 3% increase in annual visitation under Alternative 1 would potentially affect access to ceremonial locations by traditionally associated American Indians, especially during the peak season when many important traditional practices take place. Impacts on traditional cultural resources would occur throughout Segments 2 and 4 and be long term, minor to major, and adverse.

Table 9-212 summarizes the kinds of traditional cultural resources that may be found within the Park, and NEPA-level analysis of the overall impact of no action. It highlights the context of proposed Alternative 1 (no-action), duration and type of impacts, and overall impact on resources. Ongoing consultation with traditionally associated American Indian tribes and groups would continue under Alternative 1 (No Action) to identify and understand potential adverse impacts and determine appropriate mitigation measures. As an example, American Indian representatives would continue to monitor potential ground-disturbing activities for particular park projects. Consultation with traditionally associated American Indian tribes and groups is also required under section 106 of NHPA (see Appendix J).

Cumulative Impacts of Alternative 1 (No Action)

Cumulative impacts on traditional cultural resources are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential impacts of Alternative 1 (No Action). The projects identified below include only those projects that could affect traditional cultural resources within the Merced River corridor.

Past Actions

Past development, visitor use, natural events, and widespread disruption of cultural traditions has damaged ethnographic resources and their traditional cultural associations throughout the Yosemite area. Development of facilities within the Merced River corridor has disturbed or destroyed numerous ethnographic resources and compromised the integrity of habitat for traditionally important plant species. Appendix B contains the list of past actions that have resulted in cumulative impacts on environmental resources. With regard to traditional cultural resources such as areas of traditional plant use, actions at Cook's Meadow, Fern Springs, and other restoration activities, may improve conditions for native species. Those that include habitat restoration were developed and implemented in consultation with representatives of traditionally associated American Indian tribes and groups. Habitat restoration projects generally provide a beneficial impact for traditional-use plant population areas. NPS continues to monitor the impacts of these actions.

Present and Future Actions

Projects have the potential to affect traditional-use plant population areas and historic village sites, as well as access to traditional use places. Projects that could affect the management of ethnographic resources include the *Scenic Vista Management Plan* and the upcoming *Yosemite Wilderness Stewardship Plan*. General restoration projects also provide the potential for restoration of native plant habitat, including plants used traditionally by American Indians. Beneficial impacts would result from the development of the Wahhoga

TABLE 9-212: EXAMPLES OF TRADITIONAL CULTURAL RESOURCES AND OVERALL IMPACTS OF ALTERNATIVE 1 (NO ACTION)

Type of Resource	Context	Intensity	Duration of Impact	Type of Impact	Overall Impact
Merced River	Regional	Negligible to minor	Short to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potential adverse impacts due to heavier visitor use and ongoing park operations and programs
Yosemite Valley	Regional	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Ethnohistoric village areas	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Traditional-use plant population areas	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Sites of religious and cultural significance	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Archeological sites valued as traditional cultural resources	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Ceremonial or traditional use sites	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Places important to traditional history	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Unchanged from current conditions. Potentially adverse impacts due to heavier visitor use and ongoing park operations and programs.
Sites with other important qualities	Corridorwide	Negligible to minor	Long-term	No impact	Unchanged from current conditions
	Corridorwide to segmentwide	Negligible to minor	Short- to long-term	Indirect and direct adverse impacts	Potentially adverse due to heavier visitor use and ongoing park operations and programs

Indian Cultural Center by providing a location for traditional cultural activities and ceremonies, managed by traditionally associated tribes and groups. The intensity of impacts from future operational actions depends on the nature, location, and design of the undertaking, as well as the quantity and nature of ethnographic resource(s) affected. Every effort would be made during the design phase to avoid adverse impacts. Where such avoidance is not feasible or prudent, the park, in consultation with traditionally associated American Indian tribes and groups, would mitigate the impacts to the greatest extent possible, potentially reducing the intensity of the impacts.

Overall Cumulative Impacts of Alternative 1 (No Action)

Alternative 1 (No Action) in consideration with past, present, and future actions would result in no change in the treatment and management of traditional cultural resources. Any site-specific planning and

compliance actions would be accomplished in accordance with stipulations in the servicewide 2008 programmatic agreement. Cumulative impacts of Alternative 1 on traditional cultural resources would be negligible under the NEPA significance criteria.

Environmental Consequences of Actions Common to Alternatives 2–6

Many of the actions under Alternatives 2–6 to protect and enhance river values in Segment 2 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. Table 9-213 groups and summarizes actions with similar impacts, although some individual actions are addressed in a more specific manner. Table 9-213 considers actions to protect and enhance river values, as well as those intended to manage visitor use and facilities.

Adverse impacts are possible during any action involving ground or other disturbances to a traditional cultural resource, or resulting from changes in access for traditionally associated American Indian tribes and groups to important areas.

In addition to geographic analysis of documented traditional cultural resources and the actions common to Alternatives 2-6, NEPA impact analysis must also consider 1) NEPA and NHPA impact analysis of other documented cultural resources, and 2) the values of American Indian tribes and groups. As discussed in the "Archeological Resources" section, impacts of Alternatives 2-6 would result in minor to major adverse impacts due to ground-disturbing activities related to restoration, construction, and facilities removal when avoidance is not possible. There are no actions common to Alternatives 2-6 that would result in adverse effects to archeological districts or possible traditional cultural properties. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Actions to Manage Visitor Use and Facilities

Actions to manage visitor use and facilities include removal, expansion, or of existing facilities as well as construction of some new facilities. Under Alternatives 2-6, American Indian access for traditional cultural events will be guaranteed, and fee waiver passes for nonrecreational uses will be honored regardless of any progressive day use reservation system or visitor limits. The proposed removal and reduction of various recreational, retail, employee housing, operational, and other facilities would restore some of the river's traditional setting, resulting in a beneficial impact.

Considering the actions common to Alternatives 2–6, assuming traditional cultural resources could be avoided; adverse impacts on these resources would be negligible under NEPA criteria. This conclusion is dependent upon information learned during consultation with traditionally associated American Indian tribes and groups. If avoidance of traditional cultural resources is not feasible, adverse impacts would be minor, moderate, to major, depending on the resource. Consultation with traditionally associated American Indians during and after the planning stages of proposed actions may result in mitigations that reduce adverse impacts.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All Segments - Actions: Protect and Enhance River Values		
Biological Resource Actions		
All segments	Corridorwide: removal of informal trails	*Duration of Impact*: long-term *Intensity and type of impact*: avoidance of resources results in beneficial impact. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Project details to be informed by archeological research and American Indian consultation. Removal of informal trails under Alternatives 2–6 could improve the natural setting that contributes to the cultural significance of traditional cultural resources, and could re-direct visitor use away from sensitive cultural areas.
All segments	Corridorwide: decompacting soils and planting native vegetation on denuded areas.	As above
All segments	Corridorwide: restoration of hydrologic processes and renewed use of low-intensity fire to restore meadows and black oak communities.	*Duration of Impact*: long-term *Intensity and type of impact*: avoidance of resources results in beneficial impact. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Project details to be informed by archeological research and American Indian consultation. Restoration of hydrologic processes and use of low-intensity fire to restore meadows and black oak communities could improve the natural setting that contributes to the cultural significance of traditional cultural resources including black oak stands throughout the river corridor. Use of fire, in particular, would help restore the conditions of the meadows to that maintained for centuries by the area's traditionally associated American Indians and would provide public recognition of the efficacy of traditional land management practices.
Hydrological Resource Actions		
All segments	Corridorwide: removal of riprap, use of bioengineering stabilization techniques, and subsequent revegetation of the riverbanks with riparian species.	*Duration of Impact*: long-term *Intensity and type of impact*: avoidance of resources results in beneficial impact. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Project details to be informed by archeological research and American Indian consultation. Riverbank restoration and bioengineering actions could improve the natural setting that contributes to the cultural significance of traditional cultural resources.
All segments	Corridorwide: directed visitor access, revegetation, protection, and stabilization of eroded riverbanks.	*Duration of Impact*: to long-term *Intensity and type of impact*: avoidance of resources results in beneficial impact. If avoidance is not feasible, adverse impacts would be minor to major. Project details to be informed by archeological research and American Indian consultation. Protecting the riparian zone from new development, and removing or relocating campsites at least 100 feet away from the ordinary high-water mark could improve the natural setting that contributes to the cultural significance of traditional cultural resources. Use of fire, in particular, would help restore the conditions of the meadows to that maintained for centuries by the area's traditionally associated American Indians and would provide public recognition of the efficacy of traditional land management practices.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 1 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: rerouting of trails out of sensitive habitats, construction of fencing and/or boardwalks to elevate trails over wetlands, and removal of informal trails in meadow habitats.	*Duration of Impact*: long-term *Intensity and type of impact*: avoidance of resources results in beneficial impact. If avoidance is not feasible, adverse impacts would be minor to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. Re-routing trails and construction of fencing and/or boardwalks to restore meadow habitats could improve the natural setting that contributes to the cultural significance of traditional cultural resources.
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: improvements to meadow hydrology and habitat through filling ditches and reinstating a low-intensity fire regime.	*Duration of Impact:* long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. If avoidance is not feasible, adverse impacts would be minor to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. Actions common to Alternatives 2-6 to fill ditches and utilize low-intensity fire to restore meadows could improve the natural setting that contributes to the cultural significance of traditional cultural resources.
2: Yosemite Valley	Segmentwide: removal of abandoned underground infrastructure and related facilities (parking and other ground disturbances) from various locations.	*Duration of Impact*: long-term *Intensity and type of impact:* Ultimately, by removing the infrastructure and revegetating the area with native plants, beneficial impacts could result. Ground-disturbing actions associated with the removal of abandoned infrastructure will occur in previously disturbed areas and is not likely to result in adverse impacts. Project details to be informed by archeological research and American Indian consultation.
2: Yosemite Valley	Segmentwide: construction of elevated bicycle paths and boardwalks.	*Duration of Impact*: short- to long-term *Intensity and type of impact*: The construction of boardwalks across meadows under Alternatives 2–6 might encroach on American Indian ethnographic sites (as well as archeological sites). Avoidance would be given preferential consideration. Boardwalks may change the character of the use of the area as well as the setting that may contribute to its cultural significance. Restoration of meadow hydrology would ultimately improve the natural setting of traditional cultural resources associated with the meadows. Project details to be informed by archeological research and American Indian consultation. Construction could result in short-term and long-term impacts from disruptions to the setting of these sites both during construction activities and with use of such paths by park visitors. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of infrastructure in Royal Arches meadow – a known important traditional use plant population area	*Duration of Impact*: short- to long-term *Intensity and type of impact:* Ultimately, by removing the infrastructure and revegetating the area with native plants, beneficial impacts could result Ground-disturbing actions associated with the removal of infrastructure will occur in previously-disturbed areas and is not likely to result in adverse impacts. Project details to be informed by archeological research and American Indian consultation.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Biological Resource Actions (cont.)		
2: Yosemite Valley	Local: Restore hydrologic processes in the southeast portion of the former Upper and Lower River Campgrounds. Remove remaining asphalt, decompact soils of former roads and campsites and re-establish seasonal channels and natural topography that have been filled.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts to traditional cultural resources. Restoration activities (decompaction of soils, removal of fill material, and removal of invasive species) could lead to enhancement of the habitat and, ultimately, a beneficial impact on ethnobotanically important species.
Hydrologic Resource Actions		
2: Yosemite Valley	Segmentwide: Remove all campsites within 100' of the bed and banks. Remove asphalt parking spaces, base rock, fill material; decompact soils, recontour and revegetate. Re-direct use to more stable and resilient areas. Erect new fencing or adjust existing fencing to protect the riparian zone.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Redirecting visitor use to resilient sandbars may potentially allow for a long-term beneficial restoration of native plant habitat. Fencing and other implementations to re-direct visitor use may affect the setting of the traditional cultural resource areas that contribute to their cultural significance. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. Project details to be informed by archeological research and American Indian consultation.
2: Yosemite Valley	Segmentwide: redirection in portions of the East Valley campgrounds – intent to redirect campground visitors away from unstable slopes and toward resilient sandy beaches.	As above
2: Yosemite Valley	Segmentwide: Reconstruct trail and designate river access, such as at Housekeeping Camp, Sentinel Beach, Cathedral Beach, Swinging Bridge, in the southwest area of the former River's Campground, and South of Slaughterhouse Meadow. Re-establish the Valley Loop Trail at Curry Village where it ends.	*Duration of Impact:* long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Project details to be informed by archeological research and American Indian consultation. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact.
Scenic Resource Actions		
2: Yosemite Valley	Segmentwide: removal of encroaching conifers, invasive blackberry, and some deciduous trees, and ecologically restore grassland and riverbanks to maintain scenic vistas.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* Scenic vista management actions may change the character of the setting of traditional cultural resources, but aren't likely to change them to the extent that the resource's use is affected. Impacts would be negligible and adverse.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: removal of several buildings and facilities, construction of new facilities and parking areas Local: expansion of Camp 4 (Sunnyside Campground) and Backpackers – would potentially encroach on nearby ethnographic resources Improvements to visitor facilities at Bridalveil Fall Construction of new parking lots and expansion of existing lots Remove Concessioner General Office in Yosemite Village (use infilled into other existing buildings)Removal of Valley Garage Service and relocation to Government Utility Building Expansion of Yosemite Village Day-use Parking Area into previous footprint of Valley Garage area Construction of two-bay roads and trails maintenance building in proximity to the Government Utility Building Retain existing facilities and services of Ahwahnee Hotel, but tennis courts associated with Hotel Remove old and temporary housing at Highland Court and the Thousand Cabins in the Yosemite Lodge area and replace with new housing Retain Yosemite Lodge maintenance and housekeeping Remove NPS Volunteer Office (former Wellness Center), post office, and snack stand in Yosemite Lodge area	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Overall impact on traditional cultural resources under Alternatives 2–6 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. Removal of some buildings may also redirect visitor activity away from known sites, or provide new opportunities for traditional plant use areas. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. Project details to be informed by archeological research and American Indian consultation.
Segments 3 and 4 - Actions: Protect and Enhance River Values		
3 and 4: Merced River Gorge and El Portal	Segmentwide: removing informal trails, nonessential roads, surface paving, and imported rock to protect sensitive archeological resources, restore Valley Oaks, and address free-flowing condition.	*Duration of Impact:* long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact.
4: El Portal	Local: A plan of action for addressing the abandoned infrastructure will be developed in consultation with traditionally associated American Indian tribes and groups. Any solution(s) developed will also include a recommended approach for deterring visitor use within the site and protecting the site from further development.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Overall impact on traditional cultural resources under Alternatives 2–6 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. Removal of some buildings may also redirect visitor activity away from known sites, or provide new opportunities for traditional plant use areas. Construction and removal may result in disruption or destruction of ethnobotanical species' habitats, as well as archeological sites, and may be an adverse impact.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 3 and 4 - Actions: Protect and Enhance River Values (cont.)		
4: El Portal (cont.)	Remove bulk fuel storage facility, all associated development, and non-native fill from the floodplain. Restoration actions in the Abbieville/Trailer Village area	
Segments 3 and 4 - Actions: Manage Visitor Use and Facilities		
4: El Portal	Segmentwide: infill of employee housing units	*Duration of Impact*: short- to long-term *Intensity and type of impact*: moderate adverse. New construction has the potential to cause physical destruction of ethnobotanical species' habitats, as well as archeological sites. It may also change the character of the resource's use or setting including the introduction of visual, atmospheric, or audible elements. Project details to be informed by archeological research and American Indian consultation.
Segments 5, 6, 7, and 8 - Actions: Protect and Enhance River Values		
Cultural Resource Actions		
5: South Fork Merced River	Segmentwide: remove informal trails and charcoal rings from sensitive archeological resources	*Duration of Impact:* long-term *Intensity and type of impact:* redirection of visitors away from sensitive archeological resources results in beneficial impacts. Overall impact on traditional cultural resources under Alternatives 2–6 is beneficial, provided that physical impacts on archeological resources is avoided during planned actions.
7: South Fork Merced River	Local: some Wawona Campground sites removed that are either within the 100 foot floodplain, within 100-150 feet of the river or in culturally sensitive areas. Develop a waste water collection system. Build a pump station above the Wawona Campground to connect the facility to the existing waste water treatment plant. Relocate the dump site to the Wawona Campground away from the river. Design and construct RV dump station on a new sewer line near the campground entrance, at least 150 feet away from the river's OHWM.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a beneficial impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting.
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Segmentwide: new formal river access and visitor amenities, such as restrooms and waste disposal, near the Wawona Swinging Bridge	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in beneficial impacts. Overall impact on traditional cultural resources under Alternatives 2–6 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. *Intensity and type of impact:* If avoidance of traditional cultural resources is not feasible, adverse impacts would be minor, moderate, to major.

TABLE 9-213: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVES 2–6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities (cont.)		
	Remove staged materials, abandoned utilities, vehicles, and parking lot from the riparian buffer and restore a native ecosystem. Provide a 150-foot wide restoration buffer. Replace the existing public restroom facilities next to the Wawona Store with larger restrooms. Construct a 4,300-square-foot building and grounds maintenance facility, a 6,500-square-foot combined structural and wildland fire station, and a 4,000-square-foot roads maintenance facility. Rehabilitate the existing Civilian Conservation Corps structures for potential re-use. Re-design bus stop (for both tour buses and shuttles) to accommodate visitor use	*Duration of Impact:* short- to long-term *Intensity and type of impact:* moderate adverse. New construction has the potential to cause physical destruction of ethnobotanical species' habitats, as well as archeological sites. It may also change the character of the resource's use or setting including the introduction of visual, atmospheric, or audible elements. Project details to be informed by archeological research and American Indian consultation.

Cultural Resource Actions

All proposed actions to protect archeological sites from ongoing impacts of various threats and disturbances (stock trails, informal trails, parking, climbing, unauthorized camping, and graffiti) would largely result in beneficial impacts to traditional cultural resources. Consultation with traditionally associated American Indians is vital to ensure continued access to these sites for cultural uses. Consultation will also provide opportunities for American Indians to provide input on designs of the specific plans for site restoration and protection and enhancement of traditional cultural resources.

Biological Resource Actions

Specific projects to protect and enhance the river's biological values that would occur across all segments under Alternatives 2-6 include management of invasive plant species and other actions to stabilize and enhance populations of traditionally used native plants could have a beneficial long-term impact on ethnobotanical resources.

Under Alternatives 2–6, various actions would occur in each river segment to restore the Merced River and its interrelated habitats to more natural conditions. Abandoned underground infrastructure, such as sewer and water pipes and wastewater treatment facilities, would be removed from all river segments. Avoidance of adverse impacts to traditional cultural resources would first be attempted. Consultation with traditionally associated American Indian tribes and groups will be an integral part of the planning process.

Hydrologic/Geologic Resource Actions

The proposed measures under Alternatives 2–6 to improve the geologic and hydrologic conditions of the Merced River in various locations by use of brush layering, large woody debris, and constructed logjams to lessen the scouring effects of bridges and encourage channel complexity would not occur within or adjacent to any known ethnographic sites. Similarly, removal of bridge footings and gaging station equipment would not directly affect known locations of traditional cultural resources. As consultation has confirmed, the river itself is a traditional cultural resource, and restoration to a more natural condition would enhance its association as a traditional cultural resource in Segment 2.

Scenic Resource Actions

Scenic restoration management actions, and proposed removal of facilities and infrastructure (housing, tennis courts, irrigation lines, and ditches) from Yosemite Valley meadows under Alternatives 2–6 would allow for the enhancement of traditional cultural resources in these areas.

Summary of Impacts Common to Alternatives 2–6

Some of the management actions proposed for Alternatives 2–6 would have the potential to result in minor to moderate adverse impacts on known traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the resource, destruction of native vegetation, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated American Indian tribes and groups is recommended to find design solutions for specific actions that would avoid or minimize short- and long-term impacts on traditional-use plant population areas, archeological sites, resources of religious and cultural significance, ethnographic village locations, and other significant sites. Mitigative

measures developed in consultation with traditionally associated tribes and groups may be necessary to address potential impacts to culturally significant ethnographic resources during implementation of the plan.

Consultation may result in mitigations that reduce adverse impacts. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to known ethnographic village sites and traditional use areas. In Segment 2A (East Valley), impacts would include those to known ethnographic village sites, and traditional use areas of religious and cultural significance.

Many of the restoration actions associated with Alternatives 2–6 would result in long-term, beneficial impacts on known traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage or influence the setting of traditional sites, or restoration of traditional-use plant population areas.

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

All River Segments

Many of the actions under Alternative 2 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. When avoidance is not feasible, to avoid or reduce adverse impacts, restoration, visitor management, and construction activities will be planned in consultation with traditionally associated American Indians to ensure uninterrupted access, and avoid areas of known traditional cultural resources. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Text below describes actions specific to Alternative 2, and assumes that consultation and avoidance of impacts to traditional cultural resources would occur whenever possible. Table 9-214 provides NEPA analysis of potential impacts to traditional cultural resources.

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, there would be no actions to protect and enhance river values in all river segments beyond than those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The management of swimming and private boating access in all river segments under Alternative 2 would influence the traditional cultural resources related to the Merced River's setting and condition. Fewer boaters, in particular, would provide more opportunities for other visitors to experience the river in a more traditional state. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources, providing that traditionally associated American Indian tribes and groups do not have restricted access to important resources. Under Alternative 2, the park would implement a day use reservation system. One of the most important aspects of traditional cultural association is access to park lands and resources. In order for the establishment of a day use reservation system not to have an adverse impact on traditional

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All segments	Parkwide: management of swimming and private boating access in all river segments under Alternative 2 would influence the traditional cultural resources related to the Merced River's setting and condition	*Duration of Impact*: short- to long-term *Intensity and type of impact*: management of access results in minor to moderate beneficial impacts. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources.
All segments	Parkwide: implementation of a day use reservation system would influence one of the most important aspects of traditional cultural association: access to park lands and resources	*Duration of Impact:* short- to long-term *Intensity and type of impact:* implementation of day use program could result in minor to moderate beneficial impacts. In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. If both of these criteria are met, then it could reasonably be stated that the day use reservation system proposed under Alternative 2 would not negatively affect American Indian traditional cultural properties. Otherwise, implementation of a day use reservation system has the potential to adversely impact traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.
Segment 1 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Consultation may result in mitigations that reduce adverse impacts.

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Biological Resource Actions (cont.)		
2: Yosemite Valley	Local: removal of housing and other development from between the Village Store and Ahwahnee Meadow would provide benefits to the ecology of the meadow	As above There is a known ethnohistoric village site nearby. Construction may result in short-term disruption of ethnobotanical species' habitats, and may be an adverse impact. Restoration of meadow areas may have a long-term beneficial impact on the same plant use area.
2: Yosemite Valley	Local: construction of 420 parking spaces Curry Orchard parking lot	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the vicinity of a known ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas would affect access to native flora	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing traditional plan use areas. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major This is in the vicinity of known archeological sites. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp	As above Removal and restoration efforts potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. A large portion of Housekeeping Camp is located within an ethnohistoric village site. Ground-disturbing activities may adversely impact known resources. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: removal of buildings in the Yosemite Lodge floodplain for restoration	As above While removal of unused facilities and restoration of vegetation would ultimately provide a long-term benefit for the site by restoring some of its traditional setting, the proposed actions (specifically, recontouring the ground surface) has the potential to adversely impact the physical integrity of the site. Consultation may result in mitigations that reduce impacts.

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Hydrologic/Geologic Resource Actions		
2: Yosemite Valley	Local: removal of Sugar Pine and Ahwahnee Bridges, and rerouting multiuse trail between them, including restoration of native vegetation.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Bridge removal would have a beneficial impact on this resource by enhancing native vegetation species *Intensity and type of impact:* Rerouting the trail to the north of the river may result in the trail encroaching on an ethnohistoric village site. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known archeological and ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: reduced numbers of day use and overnight visitors proposed under Alternative 2 in Segment 2 would potentially have a beneficial impact on some types of traditional cultural resources. Implementation of restricted access has the potential for adversely impacting access to traditional cultural resources.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely impact access to traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: removal of campsites at the Yellow Pine administrative group campsites	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major Consultation may result in mitigations that reduce impacts.
Yosemite Village Day-use Parking Area		
2: Yosemite Valley	Local: Move Yosemite Village Day-use Parking Area northward outside 10-year floodplain Reroute Northside Drive south of the parking area Formalize Yosemite Village Day-use Parking Area with 550 parking places	As above. Camp 6 is in the vicinity of known ethnohistoric village sites, traditional- use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Curry Village Area		
2: Yosemite Valley	Local: removal of the Curry Village stables and associated lodging, followed by ecological restoration of the stables area, may affect native flora.	*Duration of Impact*: short- to long-term *Intensity and type of impact*: The Curry Village stables are located in the vicinity of several traditional-use plant population areas. Restoration following removal of the stables and associated lodging, would likely increase opportunities for native habitat to flourish, resulting in a minor to moderate beneficial effect.
Yosemite Lodge and Camp 4		
2: Yosemite Valley	Local: removal of buildings in the Yosemite Lodge floodplain	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Removal of buildings would have a beneficial impact on this resource by enhancing native vegetation species. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of the ethnographic site. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There is a known ethnohistoric village site in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: use of area west of Yosemite Lodge for parking and conversion of Yosemite Lodge to day use, parking and camping, all within the vicinity of a known ethnographic site.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact.
2: Yosemite Valley	Local: construction of a shuttle stop at Camp 4 (Sunnyside Campground)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Yosemite Village and Housekeeping Camp		
2: Yosemite Valley	Local: removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp	As above A large portion of Housekeeping Camp is located within an ethnohistoric village site. Consultation may result in mitigations that reduce impacts.

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Village and Housekeeping Camp (cont.)		
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas	As above There are known traditional plan use and archeological resources in this vicinity. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora.
Segments 3 and 4 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
4: El Portal	Local: restriction of parking and new building construction within a protection zone around a stand of valley oaks.	*Duration of Impact*: long-term *Intensity and type of impact*: minor to moderate beneficial impacts. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove.
Segments 3 and 4 - Actions: Manage Visitor Use and Facilities		
4: El Portal	Local: construction of replacement employee housing and administrative group camping in the Abbieville/Trailer Village area	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible to major beneficial impacts. Overall impact on traditional cultural resources under Alternative 2 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. Removal of some buildings may also redirect visitor activity away from known sites, or provide new opportunities for traditional plant use areas. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. This area is in known proximity of archeological and ethnographic resources. Consultation may result in mitigations that reduce adverse impacts.
Segments 5, 6, 7, and 8 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
7: South Fork Merced River	Local: decommission and restore the Wawona Golf Course	As above The golf course was constructed over an archeological site, and recontouring the ground surface to remove the artificial topography of the golf course would potentially disturb buried portions of the site. The meadow adjacent to the golf course is an American Indian traditional use area. Restoration of the gold course could have a beneficial impact.

TABLE 9-214: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 2

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Segmentwide: removal and relocation of two stock campsites from Wawona Stock Camp to the Wawona Stables area would affect traditional cultural resources.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a minor to moderate benefit impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting. The campsites are currently located within a sensitive cultural area. Consultation may result in mitigations that reduce impacts.
7: South Fork Merced River	Local: redesign bus stop at Wawona Store to accommodate visitor use.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the general area of known archeological sites. Consultation may result in mitigations that reduce impacts.

cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. If both of these criteria are met, then it could reasonably be stated that the day use reservation system proposed under Alternative 2 would not adversely impact American Indian traditional cultural resources. Otherwise, implementation of a day use reservation system has the potential to be an adverse impact, and would possibly be in conflict with the American Indian Religious Freedom Act.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, there would be no actions to protect and enhance river values in Segment 1 beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur across all segments under Alternative 2 include proposed changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp that would have the potential to both beneficially and adversely impact known archeological sites in the vicinity of these areas.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Actions in the Segment 2, Yosemite Valley, have the potential to adversely impact ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. These actions would be designed and planned in consultation with traditionally associated American Indians to avoid or minimize impacts. Consultation may result in mitigation that reduces adverse impacts, and may result in beneficial impacts by directing activity away from known sites, and/or improving native vegetation.

Biological Resource Actions. Specific projects to protect and enhance the river's biological values that would occur in Segment 2 under Alternative 2 include rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows, which has the potential to adversely impact traditional cultural resources, including archeological sites, traditional-use plant population areas, or other American Indian traditional cultural resources in Segment 2, as noted in Table 9-214. Traditionally associated American Indian tribes and groups should be consulted to plan appropriate areas for reroutes and nondamaging methods for removing abandoned segments of trails.

The Curry Orchard parking lot and a portion of Stoneman Meadow are within the immediate vicinity of an ethnohistoric village site. The proposed partial restoration of the Curry Orchard parking lot under Alternative 2 could have a minor to moderate beneficial impact on this resource by restoring some of the setting integrity.

The proposed removal of housing and other development from between the Village Store and Ahwahnee Meadow would provide minor to moderate beneficial impacts to the ecology of the meadow, although the

proximity of an ethnohistoric village site suggests that adverse impacts could occur. Consultation is recommended to determine the best way to achieve the restoration goals without inflicting damage on the site during earthmoving activities. A large portion of Housekeeping Camp is located within an ethnohistoric village site in Segment 2. The proposed removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking under Alternative 2 would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently affect the values of the site. Active restoration may also restrict access to the site.

The proposed removal of buildings in the Yosemite Lodge floodplain has the potential to adversely impact a large ethnohistoric village site in Segment 2. While removal of unused facilities and restoration of vegetation would ultimately provide a long-term benefit for the site by restoring some of its traditional setting, the proposed actions (specifically, recontouring the ground surface) has the potential to adversely impact both the physical integrity of the site, if archeological remains are present, and the ethnographic value of the resource.

The floodplains of the East Valley campgrounds contain traditional-use plant population areas. The proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. Access to traditional-use plant population areas should be kept open during restoration activities through consultation with traditionally associated American Indians, allow for continuous access to traditional-use plant population areas for seasonal uses, and promote cultural continuity of land management strategies. Impacts on the ethnographic values of nearby archeological sites valued as traditional cultural resources would also be discussed during consultation. Mitigative measures developed in consultation with traditionally associated tribes and groups may be necessary to address potential impacts to culturally significant ethnographic resources during implementation of the plan.

Hydrologic/Geologic Resource Actions. The multiuse trail between Sugar Pine Bridge and the Ahwahnee Bridge crosses a traditional-use plant population area. Removal of these bridges under Alternative 2 would have a beneficial impact on this resource by enhancing native vegetation species. Rerouting the trail to the north of the river may result in the trail encroaching on known traditional cultural resources, including an archeological site and ethnohistoric village site. Consideration of this site is recommended when planning the rerouted trail location, and traditionally associated American Indian representatives may wish to monitor trail construction in this area.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The Yellow Pine administrative group campsites are within a traditional-use plant population area. Removal of the campsites and restoration of the area to a natural condition would result in beneficial impacts on ethnobotanical resources by enhancing native habitat and reducing visitor use impacts. This action could also have adverse impacts on traditional cultural resources because Yellow Pine campground is designated as tribal priority camping during annually scheduled traditional cultural events. Under Alternative 2, administrative group camping would be moved to the Abbieville/Trailer Village area of El Portal, an area with ethnographically sensitive sites that is also proposed for development of employee housing, causing an adverse impact. Project planners would consult with traditionally associated American Indian tribes and

groups to determine the course of action that would result in the least adverse impacts on traditional cultural resources. Impacts to specific geographic areas are discussed below.

Curry Village. The Curry Village stables are located in the vicinity of several traditional-use plant population areas. Under Alternative 2, removal of the stables and associated lodging, followed by ecological restoration of the stables area, would likely increase opportunities for native habitat to flourish.

Yosemite Village Day-use Parking Area. The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. The proposed relocation of a parking area and rerouting of a portion of Northside Drive would be designed and planned in consultation with traditionally associated American Indians to avoid or minimize adverse impacts.

Yosemite Lodge and Camp 4. The proposed construction of a shuttle stop at Camp 4 would have the potential to adversely impact a number of nearby archeological and other ethnographic resources. The reduced numbers of day use and overnight visitors proposed under Alternative 2 in Segment 2 would potentially have a beneficial impact on some types of traditional cultural resources. Intensive visitor use affects the setting and feeling of traditional use areas or resources of religious and cultural significance and can impede access to these locations by cultural practitioners. Although visitor use can and does affect plant use areas, impacts are much more dependent on localized use specific to areas that contain these resources. A reduction in the overall visitor numbers would not necessarily reduce impacts on traditional-use plant population areas.

Implementation of restricted access also has the potential for adversely impacting access to traditional cultural resources. One of the most important aspects of traditional cultural association is access to park lands and resources. In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely affecting traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act.

The proposed conversion of the Yosemite Lodge and surrounding area to day use, camping, and parking, and associated removal and repurposing of various facilities under Alternative 2 would potentially affect the ethnographic values of a large village site (with some related archeological remains).

Yosemite Village and Housekeeping Camp. Under Alternative 2, a large number of campsites would be removed from the floodplain at all the East Valley campgrounds and habitat restoration would be conducted to revegetate and stabilize these areas of Segment 2. Several traditional-use plant population areas are located in and around the current campgrounds, and these areas would potentially be affected by the proposed actions. Overall, the proposed actions would likely lead to long-term improvements in the health of native plant populations and, therefore, a beneficial impact on traditional cultural resources. To avoid adverse impacts during restoration activities, unrestricted access to these areas should be maintained for traditionally associated American Indians, as well as consultation on traditional land management strategies.

A large portion of Housekeeping Camp is located within an ethnohistoric village site in Segment 2. The proposed removal of all lodging facilities and most amenities and infrastructure (with the exception of one restroom for day users) would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently adversely impact the values of the site. Active restoration may also restrict access to the site.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, there would be no actions to protect and enhance river values in Segment 3 beyond those common to Alternatives 2–6.

Biological Resource Actions. The proposed actions under Alternative 2 to restrict parking and new building construction within a protection zone around a stand of valley oaks in Segment 4 would result in a beneficial impact for these trees. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove and allow it to grow and flourish.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 2, there would be no actions to manage visitor use and facilities in Segment 3 beyond those common to Alternatives 2–6.

Under Alternative 2, the Abbieville/Trailer Village area would be used for replacement employee housing (405 beds) and administrative group camping, both of which would be relocated to El Portal, from Yosemite Valley. This area has archeological and other traditional cultural resources present, and new construction could result in adverse impacts on these resources. Consultation with traditionally associated American Indian tribes and groups would determine the best uses for the Abbieville/Trailer Village area, especially in recognition that associated American Indians have a priority agreement for the administrative group campsites. Regarding the archeological and other traditional cultural resources present, consultation may result in mitigations that reduce impacts.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 2, the Wawona Golf Course would be decommissioned and restored to a natural condition. The golf course was constructed over an archeological site, which may retain sensitive cultural materials and traditional cultural resources. Recontouring the ground surface to remove the artificial topography of the golf course would potentially disturb buried portions of the site, as described in the "Archeological Resources" section earlier in this chapter. The meadow adjacent to the golf course is an American Indian traditional-use area. Restoration of the gold course could have a beneficial impact.

Two stock campsites are proposed for removal from their current location in the Wawona stock camp and would be relocated to an area near the Wawona stables. Because the campsites are currently located within a sensitive cultural area, the removal of the campsites would provide a benefit to this resource by eliminating a source of erosion and trampling, and restoration of the area would improve the integrity of the site setting, providing a beneficial impact.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Removal of campsites from the Wawona Campground would reduce ongoing impacts on prehistoric and historic archeological site components. Although this action is primarily intended to be of benefit to the historic remains of U.S. Army Camp A.E. Wood, reduction in the intensity of camping would also have

beneficial impacts for the physical integrity and ethnographic values of American Indian archeological remains.

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

A portion of the management actions proposed under Alternative 2 would have the potential to result in adverse impacts, on known American Indian traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the site, destruction of native vegetation, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated American Indian tribes and groups is recommended to find design solutions for specific actions, and would potentially avoid short- and long-term impacts on traditional-use plant population areas, resources of religious and cultural significance, ethnographic village locations, and other significant resources. Consultation with traditionally associated American Indian tribes and groups is required under NEPA. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to known ethnographic village sites and traditional use areas. In Segment 2A (East Valley), impacts would include those to known ethnographic village sites, and traditional use areas of religious and cultural significance.

Many of the management actions associated with Alternative 2 would result in long-term, beneficial impacts on known traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage, influencing the setting of traditional sites, or restoration of traditional-use plant population areas.

Cumulative Impacts of Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

Past Actions

While none of the past actions listed in Appendix B specifically address traditional cultural resources, those that include habitat restoration were developed and implemented in consultation with representatives of traditionally associated American Indian tribes and groups. Habitat restoration projects generally provide a beneficial impact for traditional-use plant population areas.

Present Actions

The *Yosemite National Park General Management Plan* contains provisions regarding proper management of traditional cultural resources and the circumstances under which consultation with traditionally associated groups is recommended. To date, none of the present cumulative scenario projects have resulted in measurable impacts on traditional-use plant population areas, resources of religious and cultural significance, village, or other sites.

Reasonably Foreseeable Future Actions

There are no reasonably foreseeable future actions that have the potential to measurably affect traditional cultural resources.

Overall Cumulative Impact from Alternative 2: Self-Reliant Visitor Experiences and Extensive Floodplain Restoration

The combined past, present, and reasonably foreseeable future actions of the cumulative scenario would have a negligible or beneficial impact on traditional cultural resources after implementation of all associated mitigation and consultation, providing that impacts to traditional cultural resources are avoided. The proposed management actions associated with Alternatives 2, including actions common to Alternatives 2-6, may have reduced or negligible impacts following consultation, or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings. Consultation with traditionally associated American Indian tribes or groups could result in mitigations that reduce cumulative impacts that may occur.

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

All River Segments

Many of the actions under Alternative 3 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. When avoidance is not feasible, to avoid or reduce adverse impacts, restoration, visitor management, and construction activities will be planned in consultation with traditionally associated American Indians to ensure uninterrupted access, and avoid areas of known traditional cultural resources. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Text below describes actions specific to Alternative 3, and assumes that consultation and avoidance of impacts to traditional cultural resources would occur whenever possible. Table 9-255 provides NEPA analysis of potential impacts to traditional cultural resources.

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, there would be no actions to protect and enhance river values in all river segments beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The restrictions on private boating in various sections of the Merced River would be in place. Commercial rafting would be prohibited, but increased numbers of private boats would be allowed in Segment 2. Fewer boaters, in particular, would provide more opportunities for other visitors to experience the river in a more traditional state. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources, providing that traditionally associated American Indian tribes and groups do not have restricted access to important resources.

TABLE 9-215: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 3

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All segments	Parkwide: management of swimming and private boating access in all river segments would influence the traditional cultural resources related to the Merced River's setting and condition	*Duration of Impact:* short- to long-term *Intensity and type of impact:* management of access results in minor to moderate beneficial impacts. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources.
Segment 1 - Actions: Manage Visitor Use and Facilities		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: partial restoration of the Curry Orchard Day Use Parking Area to facilitate Stoneman Meadow restoration; removes 50 spaces for re-alignment to allow for a total of 300 parking spaces.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. May provide a beneficial impact on traditional-use plant population areas in these Segment 2 meadows. Nearby ethnographic village and/or archeological sites would be protected from adverse impacts during ground-disturbing restoration activities *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the vicinity of a known ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.

TABLE 9-215: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 3

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Biological Resource Actions (cont.)		
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas would affect access to native flora	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing traditional plan use areas. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major This is in the vicinity of known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of facilities and infrastructure, restoration of floodplain and riparian habitat in Housekeeping Camp	As above Removal and restoration efforts potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. A large portion of Housekeeping Camp is located within an ethnohistoric village site. Ground-disturbing activities may adversely impact known resources. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of buildings in the Yosemite Lodge floodplain	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Removal of unused facilities and restoration of vegetation would ultimately provide a long-term benefit for the site by restoring some of its traditional setting, *Intensity and type of impact:* proposed actions (specifically, recontouring the ground surface) has the potential to affect both the physical integrity of the site. If avoidance is not feasible, impacts would be minor, moderate, to major. Proximity of an ethnohistoric village site suggests that adverse impacts could occur. Consultation may result in mitigations that reduce adverse impacts.
Hydrologic/Geologic Resource Actions		
2: Yosemite Valley	Local: removal of Sugar Pine and Ahwahnee Bridges, and rerouting multiuse trail between them, including restoration of native vegetation.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Bridge removal would have a beneficial impact on this resource by enhancing native vegetation species *Intensity and type of impact:* Rerouting the trail to the north of the river may result in the trail encroaching on an ethnohistoric village site. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known archeological and ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-215: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 3

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: reduced numbers of day use and overnight visitors proposed under Alternative 3 in Segment 2 would potentially have a beneficial impact on some types of traditional cultural resources Implementation of restricted access has the potential for adversely impacting access to traditional cultural resources.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely impact access to traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act. Consultation may result in mitigations that reduce impacts.
Yosemite Village Day-use Parking Area		
2: Yosemite Valley	Local: Move Yosemite Village Day-use Parking Area northward outside 10-year floodplain Reroute Northside Drive south of the parking area Yosemite Village Day-use Parking Area with 550 parking places	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.
Curry Village Area		
2: Yosemite Valley	Local: removal of the Curry Village stables and associated lodging, followed by ecological restoration of the stables area, may affect native flora.	*Duration of Impact*: short- to long-term *Intensity and type of impact*: The Curry Village stables are located in the vicinity of several traditional-use plant population areas. Restoration following removal of the stables and associated lodging, would likely increase opportunities for native habitat to flourish, resulting in a minor to moderate beneficial effect.
2: Yosemite Valley	Local: extension of Upper Pines Campground would be constructed with new spaces for 36 recreational vehicles (RVs)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is an area near a known ethnographic village site. Consultation may result in mitigations that reduce adverse impacts.
Yosemite Lodge and Camp 4		
2: Yosemite Valley	Local: removal of buildings in the Yosemite Lodge floodplain	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Removal of buildings would have a beneficial impact on this resource by enhancing native vegetation species. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of the ethnographic site. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There is a known ethnohistoric village site in this vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-215: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 3

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Lodge and Camp 4 (cont.)		
2: Yosemite Valley	Local: construction of a shuttle stop at Camp 4 (Sunnyside Campground)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Yosemite Village and Housekeeping Camp		
2: Yosemite Valley	Local: removal of facilities and infrastructure, restoration of floodplain and riparian habitat in Housekeeping Camp	As above A large portion of Housekeeping Camp is located within an ethnohistoric village site. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas	As above Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. There are known traditional plan use and archeological resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Segments 3 and 4 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
4: El Portal	Local: restriction of parking and new building construction within a protection zone around a stand of valley oaks.	*Duration of Impact*: long-term *Intensity and type of impact*: minor to moderate beneficial impacts. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove.
Segments 3 and 4 - Actions: Manage Visitor Use and Facilities		
4: El Portal	Local: restoration of riparian areas in Abbieville	*Duration of Impact: long-term* *Intensity and type of impact:* minor to moderate beneficial impacts. New traditional-use plant areas may result. There are traditional cultural resources in the vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-215: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS IN ALTERNATIVE 3

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 5, 6, 7, and 8 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
7: South Fork Merced River	Local: decommission and restore the Wawona Golf Course	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible to major beneficial impacts. The meadow adjacent to the golf course is an American Indian traditional-use area. Restoration of the gold course could have a beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. The golf course was constructed over an archeological site, and recontouring the ground surface to remove the artificial topography of the golf course would potentially disturb buried portions of the site. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. This area is in known proximity of archeological resources. Consultation may result in mitigations that reduce adverse impacts.
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Local: removal and relocation of two stock campsites from Wawona Stock Camp to the Wawona Stables area would affect traditional cultural resources.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a minor to moderate benefit impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting. The campsites are currently located within a sensitive cultural area. Consultation may result in mitigations that reduce adverse impacts.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, there would be no actions to protect and enhance river values in Segment 1 beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Biological Resource Actions. Actions under Alternative 3 that would reduce or redesignate facilities and uses associated with Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp would have the potential to both beneficially and adversely impact known archeological sites in the vicinity of these areas.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows has the potential to affect traditional cultural resources, including archeological sites, traditional-use plant population areas, or other American Indian traditional cultural resources in Segment 2. The Curry Orchard parking lot and a portion of Stoneman Meadow are within the immediate vicinity of an ethnohistoric village site. The proposed partial restoration of the Curry Orchard parking lot and Stoneman Meadow could have a minor beneficial impact on this resource by restoring some of the integrity of setting. Similarly, the proposed removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking at Housekeeping Camp would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the ethnohistoric village site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently adversely impact the values of the site. Active restoration may also restrict access to the site.

The floodplains of the East Valley campgrounds contain traditional-use plant population areas. The proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. Access to traditional-use plant population areas should be kept open during restoration activities through consultation with traditionally associated American Indians, allow for continuous access to traditional-use plant population areas for seasonal uses, and promote cultural continuity of land management strategies. Impacts on the ethnographic values of nearby archeological sites valued as traditional cultural resources would also be discussed during consultation. Monitoring of ground disturbing activities by American Indian representatives may be required.

The proposed removal of buildings in the Yosemite Lodge floodplain has the potential to affect a large ethnohistoric village site in Segment 2. While removal of unused facilities and restoration of vegetation would ultimately provide a long-term beneficial impact for the site by restoring some of its traditional setting, the proposed actions (specifically, recontouring the ground surface) have the potential to adversely impact both the physical integrity of the site, if archeological remains are present, and the ethnographic value of the resource.

Hydrologic/Geologic Resource Actions. The multiuse trail between Sugar Pine Bridge and the Ahwahnee Bridge crosses a traditional-use plant population area. Removal of these bridges would have a beneficial impact on this resource by enhancing native vegetation species. Rerouting the trail to the north of the river may result in the trail encroaching on an archeological site and ethnohistoric village site. Consideration of this site is recommended when planning the rerouted trail location, and traditionally associated American Indian representatives may wish to monitor trail construction in this area.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Curry Village. The Curry Village stables are located in the vicinity of several traditional-use plant population areas. Under Alternative 2, removal of the stables and associated lodging, followed by ecological restoration of the stables area, would likely increase opportunities for native habitat to flourish.

Proposed extension of Upper Pines Campground with new spaces for 36 recreational vehicles (RVs) in an area with known traditional cultural resources may result in adverse impacts. Consultation may result in mitigation that would reduce those adverse impacts.

Yosemite Village Day-use Parking Area. The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. The proposed relocation of a parking area and rerouting of a portion of Northside Drive would be designed and planned in consultation with traditionally associated American Indians to avoid or minimize adverse impacts.

Yosemite Lodge and Camp 4. The proposed construction of a shuttle stop at Camp 4 would have the potential to adversely affect a number of nearby archeological and other ethnographic resources.

Although Yosemite Lodge would not be converted to day use under Alternative 3, many of the facilities and infrastructure would be removed. Two new concessioner housing areas and employee parking spaces would be constructed in the Yosemite Lodge area under Alternative 3; this could introduce the potential for new adverse impacts from construction in a Segment 2 area known to contain archeological and other ethnographically sensitive resources.

Yosemite Village and Housekeeping Camp. A large portion of Housekeeping Camp is located within an ethnohistoric village site in Segment 2. The proposed removal of all lodging facilities and most amenities and infrastructure (with the exception of one restroom for day users) would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently affect the values of the site. Active restoration may also restrict access to the site.

Under Alternative 3, a number of campsites would be removed from the East Valley campgrounds than under. Additionally, an extension of Upper Pines Campground would be constructed with new spaces for 36 recreational vehicles (RVs). Overall, the proposed actions would likely lead to long-term improvements in the health of native plant populations and, therefore, a beneficial impact on traditional cultural resources. However, some adverse affects are anticipated because the proposed new campground loop would be constructed near a known ethnographic village site.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Under Alternative 3, the valley oak protection zone proposed would include an area on the east side of El Portal Road. The larger oak protection zone under Alternative 3 has the potential for minor to moderate beneficial impacts on the valley oaks. Consultation with traditionally associated American Indian tribes and groups would ensure uninterrupted access to ethnographic resources during these activities, and restore traditional cultural continuity of land management efforts.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 3, 35 existing housing units would remain at the Abbieville/Trailer Village area in Segment 4; additional employee housing and administrative group camping would not be relocated here from the Valley, new parking would not be constructed, and riparian areas next to the river would be restored. Riparian restoration would have a potential beneficial impact for nearby traditional cultural resources, when accomplished in consultation with traditionally associated American Indian tribes and groups.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 3, the Wawona Golf Course would be decommissioned and restored, and two stock campsites would be moved from the Wawona stock camp to the Wawona stables. The golf course was constructed over an archeological site, which may retain sensitive cultural materials and traditional cultural resources. Recontouring the ground surface to remove the artificial topography of the golf course would potentially disturb buried portions of the site, as described in the "Archeological Resources" section earlier in this chapter. The meadow adjacent to the golf course is an American Indian traditional use area. Restoration of the gold course could have a beneficial impact.

Two stock campsites are proposed for removal from their current location in the Wawona stock camp and would be relocated to an area near the Wawona stables. Because the campsites are currently located within a sensitive cultural area, the removal of the campsites would provide a benefit to this resource by eliminating a source of erosion and trampling, and restoration of the area would improve the integrity of the site setting.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Campsites would be removed from the Wawona Campground under Alternative 3; this would have beneficial impacts for the physical integrity and ethnographic values of American Indian archeological remains.

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

Some of the management actions proposed under Alternative 3 would have the potential to result in minor to moderate impacts to known traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the site, destruction of native vegetation, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated groups to find design

solutions for specific actions would avoid or minimize short-term and long-term adverse impacts on traditional-use plant population areas, resources of religious and cultural significance, ethnographic village locations, archeological sites, and other significant sites. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to known ethnographic village sites and traditional use areas. In Segment 2A (East Valley), impacts would include those to known ethnographic village sites, and traditional use areas of religious and cultural significance.

Many of the management actions associated with Alternative 3 would result in long-term, beneficial impacts on known traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage, restrict access, or influence the setting of traditional sites, or restoration of traditional-use plant population areas. There would be slightly less habitat restoration, but also slightly less ground disturbance as a result of demolition, construction, and restoration activities.

Cumulative Impacts of Alternative 3: Dispersed Visitor Experiences and Extensive Riverbank Restoration

Cumulatively considerable projects that could affect American Indian traditional cultural resources are the same as those identified for Alternative 2, and include past, present, and reasonably foreseeable actions in the study area.

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

The combined past, present, and reasonably foreseeable future actions of the cumulative scenario would have a negligible or beneficial impact on traditional cultural resources after implementation of all associated mitigation and consultation, providing that impacts to traditional cultural resources are avoided. The proposed management actions associated with Alternatives 3, including actions common to Alternatives 2-6, may have reduced or negligible impacts following consultation, or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings. Consultation with traditionally associated American Indian tribes or groups could result in mitigations that reduce cumulative impacts that may occur.

Environmental Consequences of Alternative 4: Resource-Based Visitor Experiences and Targeted Riverbank Restoration

Many of the actions under Alternative 4 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. When avoidance is not feasible, to avoid or reduce adverse impacts, restoration, visitor management, and construction activities will be planned in consultation with traditionally associated American Indians to ensure uninterrupted access, and avoid areas of known traditional cultural resources. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Text below describes actions specific to Alternative 4, and assumes that consultation and avoidance of impacts to traditional cultural resources would occur whenever possible. Table 9-216 provides NEPA analysis of potential impacts to traditional cultural resources.

TABLE 9-216: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 4

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All Segments - Actions: Manage Visitor Use and Facilities		
All segments	Corridor wide: management of swimming and private boating access in all river segments under Alternative 2 would influence the traditional cultural resources related to the Merced River's setting and condition	*Duration of Impact*: short- to long-term *Intensity and type of impact*: management of access results in minor to moderate beneficial impacts. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources.
Segment 1 - Actions: Manage Visitor Use and Facilities		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: partial restoration of the Curry Orchard Day Use Parking Area to facilitate Stoneman Meadow restoration	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. May provide a beneficial impact on traditional-use plant population areas in these Segment 2 meadows. Nearby ethnographic village and/or archeological sites would be protected from adverse impacts during ground-disturbing restoration activities *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the vicinity of a known ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.

TABLE 9-216: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 4

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Biological Resource Actions (cont.)		
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas would affect access to native flora	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing traditional plan use areas. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major This is in the vicinity of known archeological sites. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local : removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp	As above Removal and restoration efforts potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. A large portion of Housekeeping Camp is located within an ethnohistoric village site. Ground-disturbing activities may adversely impact known resources. Consultation may result in mitigations that reduce impacts.
Hydrologic/Geologic Resource Actions		
2: Yosemite Valley	Local: removal of Sugar Pine and Ahwahnee Bridges, and rerouting multiuse trail between them, including restoration of native vegetation.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Bridge removal would have a beneficial impact on this resource by enhancing native vegetation species *Intensity and type of impact:* Rerouting the trail to the north of the river may result in the trail encroaching on an ethnohistoric village site. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known archeological and ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: reduced numbers of day use and overnight visitors proposed under Alternative 2 in Segment 2 would potentially have a beneficial impact on some types of traditional cultural resources. Implementation of restricted access has the potential for adversely impacting access to traditional cultural resources.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely impact access to traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act. Consultation may result in mitigations that reduce impacts.

TABLE 9-216: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 4

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Village Day-use Parking Area		
2: Yosemite Valley	Local: Move Yosemite Village Day-use Parking Area north from the river to facilitate riparian restoration goals Formalize Yosemite Village Day-use Parking Area with 750 parking places Construct a pedestrian underpass and roundabout at the Village Drive/Northside Drive intersection to address traffic congestion and pedestrian/vehicle conflicts.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of resources in the area. The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.
Curry Village		
2: Yosemite Valley	Local: removal of the Curry Village stables and associated lodging, followed by ecological restoration of the stables area, may affect native flora.	*Duration of Impact:* short- to long-term *Type of impact:* beneficial The Curry Village stables are located in the vicinity of several traditional-use plant population areas. Restoration following removal of the stables and associated lodging, would likely increase opportunities for native habitat to flourish.
Yosemite Lodge and Camp 4		
2: Yosemite Valley	Local: construction of a shuttle stop at Camp 4 (Sunnyside Campground)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of new employee housing at Yosemite Lodge	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major There is a known ethnohistoric village site in this vicinity The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of the site. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of 20 RV parking sites within the vicinity of a known ethnographic site.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact.

TABLE 9-216: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 4

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Lodge and Camp 4 (cont.)		
2: Yosemite Valley	Local: The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* adverse impacts due to a variety of traditional cultural resource concerns in the vicinity of the intersection *Intensity and type of impact: G*round-disturbing activities to create a grade separation of pedestrian and vehicle passage has the potential to adversely impact the physical integrity of known sites as well as the character of the use and setting of the resource. Consultation may result in mitigations that reduce impacts.
Yosemite Village and Housekeeping Camp		
2: Yosemite Valley	Local: removal of facilities and infrastructure, restoration of floodplain and riparian habitat, and conversion of the area into day use river access and picnicking in Housekeeping Camp	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major A large portion of Housekeeping Camp is located within an ethnohistoric village site. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas	As above Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. There are known traditional plan use and archeological resources in this vicinity. Consultation may result in mitigations that reduce impacts.
Segments 3 and 4 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
4: El Portal	Local: restriction of parking and new building construction within a protection zone around a stand of valley oaks.	*Duration of Impact*: long-term *Intensity and type of impact*: minor to moderate beneficial impacts. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove.

TABLE 9-216: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 4

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Segmentwide: removal and relocation of two stock campsites from Wawona Stock Camp to the Wawona Stables area would affect traditional cultural resources.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a minor to moderate benefit impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting. The campsites are currently located within a sensitive cultural area. Consultation may result in mitigations that reduce adverse impacts.

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, there would be no actions to protect and enhance river values in all river segments beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 4, more private boaters would be allowed in Segment 2 of the Merced River, although a permit would be required. Commercial rafts would be allowed with a commercial use authorization. These actions would result in a beneficial impact over current conditions.

Most proposed changes in parking, traffic management, and public transportation under Alternative 4 would have no impact on traditional cultural resources provided that traditionally associated American Indians are guaranteed access to the park for traditional cultural events. Parking and/or public transportation fee waivers for nonrecreational use could also be required to maintain appropriate access to the park, as required under the American Indian Religious Freedom Act. The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, there would be no actions to protect and enhance river values in Segment 1 beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Biological Resource Actions. Actions under Alternative 4 would reduce use at Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp. The overall impacts of the proposed actions would have the potential to both beneficially (by avoiding sites) and adversely impact known archeological sites in the vicinity of these areas. Mitigative measures developed in consultation with traditionally associated tribes and groups may be necessary to address potential impacts to culturally significant ethnographic resources during implementation of the plan.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Under Alternative 4, actions propose restoration of Stoneman Meadow and portions of the Curry Orchard parking lot. The proposed partial restoration of the Curry Orchard parking lot could have a minor beneficial impact on this resource by restoring some of the setting integrity.

Alternative 4 actions for the Yosemite Lodge area would not include removal of any buildings from the floodplain except for those included in the actions common to Alternatives 2–6. Rerouting of some trails, roads, and bicycle paths would occur, and some trail would be elevated onto boardwalks. No roads or bicycle paths would be rerouted out of meadows. These actions have the potential to impact traditional cultural resources, including archeological sites, traditional-use plant population areas, or other American Indian traditional cultural resources in Segment 2. Traditionally associated American Indian tribes and groups should be consulted to plan appropriate areas for reroutes and nondamaging methods for removing abandoned segments of trails.

The park would remove campsites from the East Valley campgrounds and somewhat restore the floodplain area. The proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. Access to traditional-use plant population areas should be kept open during restoration activities through consultation with traditionally associated American Indians, allow for continuous access to traditional-use plant population areas for seasonal uses, and promote cultural continuity of land management strategies. Impacts on the ethnographic values of nearby archeological sites valued as traditional cultural resources would also be discussed during consultation.

Actions to remove facilities from Housekeeping Camp, restore habitat, and provide formal river access would be less under Alternative 4 than under Alternative 3, with some lodging units remaining and less riparian ecosystem being restored. As a large portion of Housekeeping Camp is located within an ethnohistoric village site in Segment 2, the proposed actions would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently adversely impact the values of the site. Active restoration may also restrict access to the site.

Hydrologic/Geologic Resource Actions. Removal of the Ahwahnee and Sugar Pine bridges and rerouting of the trail between these bridges would occur. Rerouting the trail to the north of the river may result in the trail encroaching on an archeological site and an ethnohistoric village site. Consideration of this site is recommended when planning the rerouted trail location, and traditionally associated American Indian representatives may wish to monitor trail construction in this area.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Curry Village. Removal of the Curry Village stables and associated lodging, followed by ecological restoration of the stables area, may affect native flora. To avoid adverse impacts, or reduce impacts, restoration activities should be planned in consultation with traditionally associated American Indians.

Yosemite Village Day-use Parking Area. Moving Yosemite Village Day-use Parking Area north from the river will facilitate riparian restoration goals. This action has a potentially beneficial impact. The Yosemite Village Day-use Parking Area will be formalized with 750 parking places. To address traffic congestion and pedestrian/vehicle conflicts, a pedestrian underpass and roundabout will be constructed at the Village Drive/Northside Drive intersections. The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.

Yosemite Lodge and Camp 4. A Camp 4 shuttle stop would be constructed under Alternative 4, and would have the potential to adversely impact a number of nearby archeological and other ethnographic resources.

Under Alternative 4, predicted numbers of day and overnight visitors would be reduced compared to current peak day visitors. Intensive visitor use impacts the setting and feeling of resources of religious and cultural significance and can impede access to these locations by cultural practitioners. Although visitor use can and does affect traditional-use plant population areas, impacts are much more dependent on localized use specific to areas that contain these resources. A reduction in the overall visitor numbers would not necessarily reduce impacts on plant use sites. One of the most important aspects of traditional cultural association is access to park lands and resources. Under Alternative 4, American Indian access for traditional cultural events must be guaranteed, and fee waiver passes for nonrecreational uses must be honored regardless of any visitor limits. Otherwise, implementation of these actions has the potential for adversely impacting traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.

Actions at Yosemite Lodge include construction of two new concessioner housing areas and employee parking spaces. Associated removal and repurposing of various facilities would potentially adversely impact the ethnographic values of a large village site (with some related archeological remains).

Yosemite Village and Housekeeping Camp. Under Alternative 4, some lodging units and other facilities would remain at Housekeeping Camp. The proposed removal of facilities, amenities and infrastructure would potentially have a long-term, beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the ethnohistoric village site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently adversely impact the values of the site. Active restoration may also restrict access to the site.

Under Alternative 4, a number of campsites would be removed from the East Valley campgrounds, but several areas would be proposed for construction of new campgrounds. Additional walk-in, drive-in, and RV spaces would be created in areas adjacent to existing campgrounds, in areas of former campgrounds, or next to other existing facilities such as the Curry Village stables and Yosemite Lodge. These actions would result in some beneficial impacts, but also have the potential for adverse impacts on traditional cultural resources, as several of the proposed new campground areas would be constructed near known traditional-use plant population areas and/or ethnographic village sites.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. The valley oak protection zone proposed under Alternative 4 would remove current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove and allow it to grow and flourish.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 4, the Wawona Golf Course would remain operational and open for use; no impacts on traditional cultural resources would occur from this use. Two stock campsites would be removed; because

the campsites are currently located within a sensitive cultural area, the removal of the campsites would provide a benefit to this resource by eliminating a source of erosion and trampling, and restoration of the area would improve the integrity of the site setting.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Campsites would be removed from the Wawona Campground under Alternative 4. Impacts on ethnographically important resources would be the same as described above.

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

Some of the management actions proposed under Alternative 4 would have the potential to result in minor to moderate adverse impacts on known traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the site, destruction of native vegetation, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated American Indian tribes and groups is recommended to find design solutions for specific actions that would avoid or minimize short- and long-term impacts on traditional-use plant population areas, resources of religious and cultural significance, ethnographic village locations, and other significant sites. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to known ethnographic village sites and traditional use areas. In Segment 2A (East Valley), impacts would include those to known ethnographic village sites, religious and cultural and traditional use areas.

Some of the management actions associated with Alternative 4 would result in long-term, beneficial impacts on known traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage, restrict access, or influence the setting of traditional sites, or restoration of traditional-use plant population areas. Fewer existing facilities would be removed under Alternative 4, and a greater amount of new construction of campsites, parking lots, and other facilities would occur.

Cumulative Impacts of Alternative 4: Resource-based Visitor Experiences and Targeted Riverbank Restoration

Cumulatively considerable projects that could affect American Indian traditional cultural resources are the same as those identified for Alternative 2, and include past, present, and reasonably foreseeable actions in the study area.

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

The combined past, present, and reasonably foreseeable future actions of the cumulative scenario would have a negligible or beneficial impact on traditional cultural resources after implementation of all associated mitigation and consultation, providing that impacts to traditional cultural resources are avoided. The proposed management actions associated with Alternatives 4, including actions common to Alternatives 2-6, may have reduced or negligible adverse impacts following consultation, or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use,

or protection or enhancement of site settings. Consultation with traditionally associated American Indian tribes or groups could result in mitigations that reduce cumulative impacts that may occur.

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

Many of the actions under Alternative 5 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. When avoidance is not feasible, to avoid or reduce adverse impacts, restoration, visitor management, and construction activities will be planned in consultation with traditionally associated American Indians to ensure uninterrupted access, and avoid areas of known traditional cultural resources. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Text below describes actions specific to Alternative 5, and assumes that consultation and avoidance of impacts to traditional cultural resources would occur whenever possible. Table 9-217 provides NEPA analysis of potential impacts to traditional cultural resources.

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, there would be no actions to protect and enhance river values in all segments beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 5, a number of private boaters would be allowed in Segment 2 of the Merced River, but a permit would be required. Commercial rafts would not be allowed under Alternative 5. Fewer boaters, in particular, would provide more opportunities for other visitors to experience the river in a more traditional state. Implementing number restrictions on private boats within some river segments would result in a beneficial impact on traditional cultural resources, providing that traditionally associated American Indian tribes and groups do not have restricted access to important resources.

Under Alternative 5, a progressive day use reservation system would be implemented by the park, along with other phased traffic and parking management systems that would be activated when demand exceeds a certain level. One of the most important aspects of traditional cultural association is access to park lands and resources. To ensure that the establishment of a day use reservation system would not have an adverse impact on traditional cultural resources, American Indian access for traditional cultural events must be guaranteed, and tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. If both of these criteria are met, then it could reasonably be stated that the progressive day use reservation system proposed under Alternative 5 would not adversely affect American Indian traditional cultural resources. Otherwise, implementation of a day use reservation system has the potential to adversely affect traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.

TABLE 9-217: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 5

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All Segments - Actions: Manage Visitor Use and Facilities		
All segments	Parkwide: management of swimming and private boating access (per the Boating Appendix R) in all river segments under Alternative 5 would influence the traditional cultural resources related to the Merced River's setting and condition	*Duration of Impact*: short- to long-term *Intensity and type of impact*: management of access results in minor to moderate beneficial impacts. Eliminating commercial rafting and implementing strict number restrictions on private boats within some river segments would result in the greatest beneficial impact on traditional cultural resources.
All segments	Segmentwide: a progressive day use reservation system would potentially have a beneficial impact on some types of traditional cultural resources	*Duration of Impact:* short- to long-term *Intensity and type of impact:* management of access results in minor to moderate beneficial impacts. In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely affecting traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act. Consultation may result in mitigations that reduce impacts.
Segment 1 - Actions: Manage Visitor Use and Facilities		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact:* short- to long-term *Type of impact:* No ecosystem restoration would occur, and impacts on traditional cultural resources would likely be a minor beneficial impact. *Type of impact:* If avoidance is not feasible, impacts would be negligible to minor. As no ecosystem restoration would occur, and impacts on traditional cultural resources would likely be a minor adverse impact. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce impacts.
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Consultation may result in mitigations that reduce adverse impacts.

TABLE 9-217: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 5

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values (cont.)		
Biological Resource Actions (cont.)		
2: Yosemite Valley	Local: partial restoration of the Curry Orchard Day Use Parking Area to allow for a total of 400 parking spaces.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. May provide a beneficial impact on traditional-use plant population areas in these Segment 2 meadows. Nearby ethnographic village and/or archeological sites would be protected from adverse impacts during ground-disturbing restoration activities *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the vicinity of a known ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas would affect access to native flora	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing traditional plan use areas. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major This is in the vicinity of known archeological sites. Consultation may result in mitigations that reduce impacts.
Hydrologic/Geologic Resource Actions		
2: Yosemite Valley	Local: Sugar Pine Bridge remains in place for the near term. Additional study will be conducted by a third party to determine the hydrologic impacts of the historic bridge. The removal of the bridge and the rerouting of the multiuse trail would have the potential to affect an ethnohistoric site while restoring native vegetation.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* Potential removal of the bridge could result in adverse impacts to local archeological resources. Rerouting the trail to the north of the river may result in the trail encroaching on an ethnohistoric village site. If avoidance is not feasible, adverse impacts would be moderate. There is a known archeological site and ethnographic village site in this vicinity. Consultation may result in mitigations that reduce impacts.
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: Visitor use is limited through parking management. As parking reaches full capacity in the Valley, cars would be redirected to overflow parking in El Portal and Gateway communities.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* In order for the establishment of a day use reservation system not to have an adverse impact on traditional cultural resources, (1) American Indian access for traditional cultural events must be guaranteed, and (2) tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. Otherwise, implementation of these actions has the potential for adversely impact access to traditional cultural resources and could possibly be in conflict with the American Indian Religious Freedom Act. Consultation may result in mitigations that reduce impacts.

TABLE 9-217: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 5

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Village Day-use Parking Area		
2: Yosemite Valley	Local: Move Yosemite Village Day-use Parking Area north from the river to facilitate riparian restoration goals Formalize the Yosemite Village Day-use Parking Area with 750 parking places Completion of tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) to evaluate a range of alternatives to address the pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of the site. The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: Demolish the Superintendent's House and Garage to address recurring flooding and subsequent water damage.	*Duration of Impact:* long-term *Intensity and type of impact:* avoidance of black oak and other possible traditional cultural resources results in negligible impact. If avoidance is not feasible, impacts could be moderate to major. The proposed action (specifically, ground disturbance) has the potential to affect the physical integrity of the area but also has the potential to improve the natural setting that contributes to the traditional cultural significance of the area. Consultation may result in mitigations that reduce impacts.
Yosemite Lodge and Camp 4		
2: Yosemite Valley	Local: construction of new employee housing at Yosemite Lodge	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of the site. There is a known ethnohistoric village site in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: creation of additional walk-in, drive-in, and RV spaces in areas adjacent to existing campgrounds and in areas of former campgrounds	*Duration of Impact:* short- to long-term *Type of impact:* avoidance of resources would result in minor beneficial effect *Type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major There are known traditional cultural resources in this vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-217: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 5

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Lodge and Camp 4 (cont.)		
2: Yosemite Valley	Local: construction of a shuttle stop at Camp 4 (Sunnyside Campground)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* adverse impacts due to a variety of traditional cultural resource concerns in the vicinity of the intersection *Intensity and type of impact: G*round-disturbing activities to create a grade separation of pedestrian and vehicle passage has the potential to adversely impact the physical integrity of known sites as well as the character of the use and setting of the resource. Consultation may result in mitigations that reduce impacts.
Yosemite Village and Housekeeping Camp		
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas	As above Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing the native flora. There are known traditional plant use and archeological resources in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of a roundabout to address traffic conflicts at the bank three-way intersection with Northside Drive	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known traditional cultural resources in this vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-217: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 5

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 3 and 4 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
4: El Portal	Local: restriction of parking and new building construction within a protection zone around a stand of valley oaks.	*Duration of Impact*: long-term *Intensity and type of impact*: minor to moderate beneficial impacts. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove.
Segments 3 and 4 - Actions: Manage Visitor Use and Facilities		
4: El Portal	Local: construction of RV and car parking in the Abbieville/Trailer Village area and construction of new concessioner employee housing at Abbieville and Rancheria Flat and El Portal Town Center	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible to major beneficial impacts. Overall impact on traditional cultural resources under Alternative 2 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. Removal of some buildings may also redirect visitor activity away from known sites, or provide new opportunities for traditional plant use areas. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. This area is in known proximity of archeological and ethnographic resources. Consultation may result in mitigations that reduce adverse impacts.
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Segmentwide: removal and relocation of two stock campsites from Wawona Stock Camp to the Wawona Stables area would affect traditional cultural resources.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a minor to moderate benefit impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting. The campsites are currently located within a sensitive cultural area. Consultation may result in mitigations that reduce adverse impacts.

The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.

Ground disturbance and impacts to the black oak community as a result of the demolition of Residence 1 (Superintendent's House and Garage) could result in local, long-term, moderate to major adverse impacts to traditional cultural resources. Mitigative measures developed in consultation with traditionally associated tribes and groups may be necessary to address potential impacts to culturally significant ethnographic resources during implementation of the plan.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, there would be no actions to protect and enhance river values in Segment 1 beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Biological Resource Actions. Under Alternative 5, there would be no reduction in use at Little Yosemite Valley Campground, although bear boxes would be removed. Bear boxes and flush toilets would also be removed from Merced Lake Backpackers Campground, and the Merced Lake High Sierra Camp would be reduced to 42 beds. No ecosystem restoration would occur, and impacts on traditional cultural resources (both beneficial and adverse) would be minor.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Under Alternative 5, the actions proposed to reroute trails, roads, and bicycle paths. Some trail would be rerouted, and some trails would be elevated onto boardwalks. No roads or bicycle paths would be rerouted out of meadows. Traditionally associated American Indian tribes and groups should be consulted to plan appropriate areas for reroutes and nondamaging methods for removing abandoned segments of trails.

There would be no restoration of Stoneman Meadow under Alternative 5; instead, the Curry Orchard parking lot would be redesigned to improve drainage and hydrologic connectivity in Stoneman Meadow. The proposed partial restoration of the Curry Orchard parking lot could have a slight beneficial impact on this resource by restoring some of the setting integrity.

Under Alternative 5, the park would remove some campsites from the East Valley campgrounds and restore less floodplain area. The floodplains of the East Valley campgrounds contain traditional-use plant population areas. The removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a local, long-term, minor beneficial impact on traditional

cultural resources by increasing and enhancing the native flora. Monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups may be necessary.

Actions to remove facilities from Housekeeping Camp, restore habitat, and provide formal river access would leave most lodging units and only 1 acre of riparian ecosystem would be restored. The removal of facilities and infrastructure and restoration of floodplain and riparian habitat would potentially have a local, long-term, minor beneficial impact on traditional cultural resources by reducing the intensity of use and thereby improving the site's integrity of setting. Ground-disturbing activities associated with demolition and removal of facilities could inadvertently adversely impact the values of the site. Active restoration may also restrict access to the site.

Under Alternative 5, actions in the Yosemite Lodge area would not include removal of any buildings from the floodplain except for those included in the actions common to Alternatives 2–6.

Hydrologic/Geologic Resource Actions. Under Alternative 5, the Sugar Pine Bridge would be retained pending additional hydrologic study. The findings of the study would inform future management actions of the bridge, including permanent retention, redesign, or removal. If the bridge is removed and the trail is re-routed, this action has the potential to result in local, long-term, moderate, adverse effects. Monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups may be necessary.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Yosemite Village Day-use Parking Area. Moving the Yosemite Village Day-use Parking Area north from the river will facilitate riparian restoration goals. This action has a potentially beneficial impact. The Yosemite Village Day-use Parking Area will be formalized with 750 parking places. To address traffic congestion and pedestrian/vehicle conflicts, a roundabout will be constructed at the Village Drive/Northside Drive intersections. Additionally, a tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will be implemented to evaluate a range of alternatives to address the pedestrian/vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts. Monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups may be necessary. Actions (and impacts) at Yosemite Lodge would be the same under Alternative 5 as under Alternative 4, including the construction of two new concessioner housing areas and employee parking spaces. Associated removal and repurposing of various facilities would potentially affect the ethnographic values of a large village site (with some related archeological remains).

Yosemite Lodge and Camp 4. The proposed construction of a shuttle stop at Camp 4 would have the potential to adversely affect a number of nearby archeological and other ethnographic resources.

Construction of new employee housing at Yosemite Lodge would potentially adversely impact a known ethnohistoric village site in this vicinity. This action would be planned in consultation with traditionally associated American Indians. Consultation with traditionally associated American Indians is recommended for any actions that would involve use of heavy machinery or temporary restrictions on access to ethnographically sensitive areas. This would help to avoid any adverse impacts related to physical disturbance of traditional

cultural resources. Monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups may be necessary.

Under Alternative 5, predicted numbers of day and overnight visitors would be approximately the same as current peak day demand. Intensive visitor use affects the setting and feeling of resources of religious and cultural significance and can impede access to these locations by cultural practitioners. Although visitor use can and does affect plant traditional-use plant population areas, impacts are much more dependent on localized use specific to areas that contain these resources. A change in the overall visitor numbers would not necessarily alter impacts on traditional-use plant population areas. One of the most important aspects of traditional cultural association is access to park lands and resources. Under Alternative 5, American Indian access for traditional cultural events will be guaranteed, and fee waiver passes for nonrecreational uses will be honored regardless of any progressive day use reservation system or visitor limits. Otherwise, implementation of these actions has the potential for adversely affecting traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.

Yosemite Village and Housekeeping Camp. Under Alternative 5, most lodging units and other facilities would remain at Housekeeping Camp. There would be no measurable beneficial impacts over present conditions, but adverse impacts related to continued high-intensity visitor use of the area would still occur, as described for Alternative 1.

Under Alternative 5, some campsites would be removed from the East Valley campgrounds. Several areas would be proposed for the construction of new campgrounds. Additional walk-in, drive-in, and RV spaces would be created in areas adjacent to existing campgrounds and in areas of former campgrounds, but not next to other existing facilities. Several traditional-use plant population areas are located in and around the current campgrounds, and these areas would potentially be affected by the proposed actions. To avoid adverse impacts during restoration activities, unrestricted access to these areas should be maintained for traditionally associated American Indians, as well as consultation on traditional land management strategies.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. The proposed actions to restrict parking and new building construction within a protection zone around a stand of valley oaks in Segment 4 would result in a beneficial impact for these trees. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove and allow it to grow and flourish.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Any construction of additional RV and car parking or replacement employee housing would adversely affect archeological and other traditional cultural resources in the Abbieville/Trailer Village area. This area has archeological and other traditional cultural resources present, and new construction would likely result in local, long-term adverse impacts on these resources. Consultation with traditionally associated American Indian tribes and groups would determine the best uses for the Abbieville/Trailer Village area, especially in recognition that associated American Indians have a priority agreement for the administrative group campsites. Consultation may result in mitigations that reduce impacts. Monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups may be necessary.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 5, the Wawona Golf Course would remain open. Two stock campsites would be removed from the Wawona stock camp, but under Alternative 5 these campsites would be relocated to the Wawona Maintenance area. Because the campsites are currently located within a sensitive cultural area, the removal of the campsites would provide a benefit to this resource by eliminating a source of erosion and trampling, and restoration of the area would improve the integrity of the site setting.

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

Some of the management actions proposed under Alternative 5 would have the potential to result in minor to major adverse impacts on known American Indian traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the site, destruction of native vegetation, damage or destruction to archeological resources with traditional cultural and religious significance, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated American Indian tribes and groups is recommended to find design solutions for specific actions in order to minimize short-term impacts and avoid long-term impacts on traditional-use plant population areas, resources of religious and cultural significance, ethnographic village locations, and other significant sites. Actions in Segment 2B (West Valley) predominantly include restoration actions that would result in impacts to known ethnographic village sites and traditional use areas. In Segment 2A (East Valley), impacts would include those to known ethnographic village sites, and traditional use areas of religious and cultural significance, and archeological resources.

Some of the Alternative 5 management actions would result in long-term, beneficial impacts on known American Indian traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage, restrict access, or influence the setting of traditional sites, or restoration of traditional-use plant population areas.

Cumulative Impacts of Alternative 5: Enhanced Visitor Experiences and Essential Riverbank Restoration

Cumulatively considerable projects that could affect American Indian traditional cultural resources are the same as those identified for Alternative 2, and include past, present, and reasonably foreseeable actions in the study area.

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

The combined past, present, and reasonably foreseeable future actions of the cumulative scenario would have a negligible or beneficial impact on traditional cultural resources after implementation of all associated mitigation and consultation, providing that impacts to traditional cultural resources are avoided. The proposed management actions associated with Alternatives 5, including actions common to Alternatives 2-6, may have reduced or negligible impacts following consultation and the implementation of monitoring and/or other mitigating measures developed in consultation with traditionally associated tribal groups, or

beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings. Consultation with traditionally associated American Indian tribes or groups could result in mitigations that reduce cumulative impacts that may occur.

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

Many of the actions under Alternative 6 would result in long-term, beneficial impacts on populations of ethnobotanically important plants, ecological stability of resources of religious or cultural significance, and reduction or elimination of ongoing visitor use impacts on archeological sites and other traditional cultural resources. When avoidance is not feasible, to avoid or reduce adverse impacts, restoration, visitor management, and construction activities will be planned in consultation with traditionally associated American Indians to ensure uninterrupted access, and avoid areas of known traditional cultural resources. Necessary consultation with American Indian tribes and groups will continue to identify traditional cultural resources and avoid, minimize, or mitigate adverse impacts.

Text below describes actions specific to Alternative 6, and assumes that consultation and avoidance of impacts to traditional cultural resources would occur whenever possible. Table 9-218 provides NEPA analysis of potential impacts to traditional cultural resources.

All River Segments

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, there would be no actions to protect and enhance river values in all river segments beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Under Alternative 6, the largest number of private boats would be allowed on the Wild and Scenic River area of the Merced River out of Alternatives 2–6. Permits would be required for private boats, and commercial rafts would be allowed by concessioners.

Under Alternative 6, a progressive day use reservation system would be implemented by the park, along with other phased traffic and parking management systems that would be activated when demand exceeds a certain level. One of the most important aspects of traditional cultural association is access to park lands and resources. To ensure that the establishment of a day use reservation system would not have an adverse impact on traditional cultural resources, American Indian access for traditional cultural events must be guaranteed, and tribal fee waiver passes for nonrecreational uses must be honored regardless of any day use reservation system in place. If both of these criteria are met, then it could reasonably be stated that the progressive day use reservation system proposed under Alternative 6 would not adversely impact American Indian traditional cultural resources. Otherwise, implementation of a day use reservation system has the potential to adversely affect traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.

TABLE 9-218: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
All Segments - Actions: Manage Visitor Use and Facilities		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
Segment 1 - Actions: Manage Visitor Use and Facilities		
Biological Resource Actions		
1: Merced River above Nevada Fall	Segmentwide: changes to the Little Yosemite Valley Campground, Merced Lake Backpackers Campground, and Merced Lake High Sierra Camp	*Duration of Impact*: short- to long-term *Intensity and type of impact*: avoidance of resources results in negligible to moderate beneficial impact. Overall impact on traditional cultural resources could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during restoration activities. *Intensity and type of impact*: If avoidance is not feasible, adverse impacts would be minor, moderate, to major. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. Some actions are proposed in areas with known archeological sites. Consultation may result in mitigations that reduce adverse impacts.

TABLE 9-218: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
2: Yosemite Valley	Segmentwide: rerouting trails, bicycle paths, and roads in all Yosemite Valley meadows	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: partial restoration of the Curry Orchard Day Use Parking Area to allow for a total of 400 parking spaces.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. May provide a beneficial impact on traditional-use plant population areas in these Segment 2 meadows. Nearby ethnographic village and/or archeological sites would be protected from adverse impacts during ground-disturbing restoration activities *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This is in the vicinity of a known ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of campsites and asphalt and restoration of native vegetation within the East Valley campground areas would affect access to native flora	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, beneficial impact on traditional cultural resources by increasing and enhancing traditional plan use areas. *Intensity and type of impact*: If avoidance is not feasible, impacts would be minor, moderate, to major This is in the vicinity of known archeological sites. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of buildings in the Yosemite Lodge floodplain	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. Removal of unused facilities and restoration of vegetation would ultimately provide a long-term benefit for the site by restoring some of its traditional setting, *Intensity and type of impact:* proposed actions (specifically, recontouring the ground surface) has the potential to affect both the physical integrity of the site. If avoidance is not feasible, impacts would be minor, moderate, to major. This has the potential to affect a large ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Local: removal of facilities in Housekeeping Camp	As above

TABLE 9-218: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities		
2: Yosemite Valley	Segmentwide: no reduction of the numbers of day use and overnight visitors is proposed under Alternative 6 in Segment 2.	*Duration of Impact:* short- to long-term *Type of impact:* avoidance of resources would result in negligible impact and beneficial impact *Type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major Intensive visitor use impacts the setting and feeling of resources of religious and cultural significance, and can impede access to these locations by cultural practitioners. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Construction of 250 overflow parking spaces south of Southside Drive for the West Valley Overflow Parking Area.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This has the potential to affect a large ethnohistoric village site. Consultation may result in mitigations that reduce adverse impacts.
2: Yosemite Valley	Development of new Eagle Creek campground developed east of El Capitan Picnic Area with 79 car and recreational vehicle sites.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in negligible to moderate beneficial impact. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. This has the potential to affect a large ethnohistoric village site and a large traditional use area. Consultation may result in mitigations that reduce adverse impacts.
Yosemite Village Day-use Parking Area		
2: Yosemite Valley	Local: Move Yosemite Village Day-use Parking Area north from the river to facilitate riparian restoration goals Formalize Yosemite Village Day-use Parking Area with 850 parking places Construct a pedestrian underpass and roundabout at the Village Drive/Northside Drive intersection to address traffic congestion and pedestrian/vehicle conflicts.	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources results in negligible impact *Intensity and type of impact:* If avoidance is not feasible, impacts would be minor, moderate, to major The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of the site. The Yosemite Village Day-use Parking Area is in the vicinity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts.

TABLE 9-218: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segment 2 - Actions: Manage Visitor Use and Facilities (cont.)		
Yosemite Lodge and Camp 4		
2: Yosemite Valley	Local: construction of new employee housing and lodge redesign at Yosemite Lodge	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of new walk-in, drive-in, and RV spaces adjacent to existing campgrounds and in areas of former campgrounds within the East Valley	As above There are known traditional-use plant areas and archeological sites in the vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of 20 RV parking sites within the vicinity of a known ethnographic site.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact.
2: Yosemite Valley	Local: The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.	*Duration of Impact*: short- to long-term *Intensity and type of impact:* adverse impacts due to a variety of traditional cultural resource concerns in the vicinity of the intersection *Intensity and type of impact:* Ground-disturbing activities to create a grade separation of pedestrian and vehicle passage has the potential to adversely impact the physical integrity of known sites as well as the character of the use and setting of the resource. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: construction of a shuttle stop at Camp 4 (Sunnyside Campground)	*Duration of Impact: short- to long-term* *Intensity and type of impact:* avoidance of resources and rerouting away from traditional cultural resources results in minor to moderate beneficial impact. *Intensity and type of impact:* Demolition and ground disturbing activities has the potential to adversely impact the physical integrity of known sites. If avoidance is not feasible, adverse impacts would be minor, moderate, to major. There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.
2: Yosemite Valley	Local: Construction of Bank three-way intersection and a roundabout at the intersection with Northside Drive	As above There are known ethnographic resources in this vicinity. Consultation may result in mitigations that reduce impacts.

TABLE 9-218: PROPOSED ACTIONS AND IMPACTS UNDER ACTIONS COMMON TO ALTERNATIVE 6

River Segment	Context of Proposed Actions and Impacts to Resources	Duration, Intensity, and Type of Impact
Segments 3 and 4 - Actions: Protect and Enhance River Values		
Biological Resource Actions		
4: El Portal	Local: restriction of parking and new building construction within a protection zone around a stand of valley oaks.	*Duration of Impact*: long-term *Intensity and type of impact*: minor to moderate beneficial impacts. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove. Restoration activities should be planned in consultation with traditionally associated American Indians.
Segments 3 and 4 - Actions: Manage Visitor Use and Facilities		
4: El Portal	Local: construction of replacement employee housing in the Abbieville/Trailer Village area.	*Duration of Impact:* short- to long-term *Intensity and type of impact:* avoidance of resources results in negligible to major beneficial impacts. Overall impact on traditional cultural resources under Alternative 2 could be beneficial, provided that physical impacts on archeological, ethnographic, and other sites valued as traditional cultural resources could be avoided during planned actions. Removal of some buildings may also redirect visitor activity away from known sites, or provide new opportunities for traditional plant use areas. *Intensity and type of impact:* If avoidance is not feasible, adverse impacts would be minor, moderate, to major. Construction and removal may result in disruption of ethnobotanical species' habitats, and may be an adverse impact. This area is in known proximity of archeological and ethnographic resources. Consultation may result in mitigations that reduce adverse impacts.
Segments 5, 6, 7, and 8 - Actions: Manage Visitor Use and Facilities		
7: South Fork Merced River	Segmentwide: removal and relocation of two stock campsites from Wawona Stock Camp to the Wawona Stables area would affect traditional cultural resources.	*Duration of Impact*: long-term *Type of impact*: Removal of the campsites would provide a minor to moderate benefit impact to this resource by eliminating a source of erosion and trampling. Restoration of the area would improve the integrity of the site setting. The campsites are currently located within a sensitive cultural area. Consultation may result in mitigations that reduce adverse impacts.

Segment 1: Merced River Above Nevada Fall

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, there would be no actions to protect and enhance river values in Segment 1 beyond those common to Alternatives 2–6.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Biological Resource Actions. Under Alternative 6, there would be no reduction in use at Little Yosemite Valley Campground, although bear boxes would be removed. Bear boxes and flush toilets would also be removed from Merced Lake Backpackers Campground, and the Merced Lake High Sierra Camp would be reduced to 60 beds. No ecosystem restoration would occur, and impacts on traditional cultural resources (both beneficial and adverse) would likely be minimal.

Segment 2: Yosemite Valley

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Proposed actions under Alternative 6 include: rerouting of trails, roads, and bicycle paths in Segment 2; redesign of Curry Orchard parking lot; restoration and campsite removal actions at East Valley campgrounds; actions to remove facilities from Housekeeping Camp. For these actions, impacts could occur on ethnographic resources, both beneficial and adverse. The proposed partial redesign of the Curry Orchard parking lot could have a slight beneficial impact on this resource by restoring some of the setting integrity. Traditionally associated American Indian tribes and groups should be consulted to plan appropriate areas for reroutes and nondamaging methods for removing abandoned segments of trails and campsites.

Under Alternative 6, actions for the Yosemite Lodge area include removal of buildings in the floodplain and recontouring/restoration, and a new parking lot would be added for lodging units. While removal of unused facilities and restoration of vegetation would ultimately provide a long-term benefit for the site by restoring some of its traditional setting, the proposed actions (specifically, recontouring the ground surface) has the potential to affect both the physical integrity of the site, if archeological remains are present, and the ethnographic value of the resource.

Hydrologic/Geologic Resource Actions. Under Alternative 6, both the Sugar Pine and Ahwahnee bridges would remain and the multiuse trail between these bridges would also stay in its current alignment.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

Actions specific to Alternative 6 include the construction of 250 overflow parking spaces at the West Valley Overflow Parking Area and a new Eagle Creek campground east of El Capitan Picnic Area with 79 car and recreational vehicle sites. The proposed actions (specifically, ground disturbance) have the potential to affect the physical integrity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts. Associated removal and repurposing of various facilities would potentially impact the ethnographic values of a large village site (with some related archeological remains).

Yosemite Village Day-use Parking Area. Moving the Yosemite Village Day-use Parking Area north from the river will facilitate riparian restoration goals. This action has a potentially beneficial impact. The Yosemite Village Day-use Parking Area will be formalized with 850 parking places. To address traffic congestion and pedestrian/vehicle conflicts, a pedestrian underpass and two roundabout will be constructed at the Village Drive/Northside Drive intersections. The proposed actions (specifically, ground disturbance and recontouring) have the potential to affect the physical integrity of known ethnohistoric village sites, traditional-use plant population areas, and/or archeological sites. Consultation may result in mitigations that reduce impacts. Associated removal and repurposing of various facilities would potentially impact the ethnographic values of a large village site (with some related archeological remains).

Yosemite Lodge and Camp 4. Actions at Yosemite Lodge include construction of two new concessioner housing areas and employee parking spaces. In addition, the lodge would be redesigned out of the floodplain, and a new three-story building would be constructed with 44 lodging units. This construction would have the potential to adversely impact known traditional cultural resources in the immediate vicinity of Yosemite Lodge.

A Camp 4 shuttle stop and Bank three-way intersection roundabout would be constructed under Alternative 6, and a roundabout would be constructed at the three-way intersection with Northside Drive. Because this roundabout would also be located in a sensitive ethnographic area, potential adverse impacts would be possible. Consultation may result in mitigations that reduce impacts.

Under Alternative 6, available parking and lodging for day use and overnight visitors would meet the current peak day demand and the projected demand for the next five years, allowing for 3% annual growth. Intensive visitor use affects the setting and feeling of resources of religious and cultural significance, and can impede access to these locations by cultural practitioners. Although visitor use can and does affect traditional-use plant population areas, impacts are much more dependent on localized use specific to areas that contain these resources. A change in the overall visitor numbers would not necessarily alter impacts on plant use sites. One of the most important aspects of traditional cultural association is access to park lands and resources. Under Alternative 6, American Indian access for traditional cultural events in Segment 2 must be guaranteed, and fee waiver passes for nonrecreational uses must be honored regardless of any progressive day use reservation system or visitor limits. Otherwise, implementation of these actions has the potential to adversely affect traditional cultural resources and would possibly be in conflict with the American Indian Religious Freedom Act.

The tiered NEPA / NHPA compliance effort (EA/Section 106 Determination) will evaluate a range of alternatives to address the pedestrian / vehicle conflicts on Northside Drive between the Yosemite Lodge Area and the Lower Yosemite Fall Area. This action will require a sizeable consultation effort with traditionally associated American Indian tribes and groups in order to address a number of traditional cultural resource concerns in the vicinity of this intersection. This action has the potential to result in local, long-term, major, adverse effects.

Yosemite Village and Housekeeping Camp. Under Alternative 6, most lodging units and all other facilities would remain at Housekeeping Camp. There would be negligible beneficial impacts over existing conditions, but minor, adverse impacts on traditional cultural resources related to continued high-intensity visitor use of the area would still occur. Under Alternative 6, some campsites would be removed from the East Valley campgrounds. Several areas would be proposed for the construction of new campgrounds. New walk-in, drive-in, and RV spaces would be added in areas adjacent to existing campgrounds and in areas of former campgrounds, as well as near Yosemite Lodge, but no campsites would be constructed at the Curry

Village stables. The proposed removal of campsites and asphalt and restoration of native vegetation within the campground areas would ultimately provide a long-term, minor beneficial impact on traditional cultural resources by increasing and enhancing the native flora. Access to traditional-use plant population areas should be kept open during restoration activities through consultation with traditionally associated American Indians, allow for continuous access to traditional-use plant population areas for seasonal uses, and promote cultural continuity of land management strategies. Impacts on the ethnographic values of nearby archeological sites valued as traditional cultural resources would also be discussed during consultation. Traditionally associated American Indian tribes and groups should be consulted to plan appropriate areas for new construction.

Segments 3 and 4: Merced River Gorge and El Portal

Impacts of Actions to Protect and Enhance River Values

Biological Resource Actions. Under Alternative 6, there would also be a proposed valley oak protection zone. Removing current facilities and imported fill, then decompacting soils and revegetating with native oak-compatible understory species would improve the health of this grove and allow it to grow and flourish.

Impacts of Actions to Manage User Capacities, Land Use, and Facilities

The proposed housing at the Abbieville/Trailer Village area in Segment 4 under Alternative 6 would include high-density units for 258 employees and remote parking for 200 vehicles. This area has archeological and other traditional cultural resources present, and new construction would likely result in adverse impacts on these resources. Consultation with traditionally associated American Indian tribes and groups would determine the best uses for the Abbieville/Trailer Village area.

Segments 5, 6, 7, and 8: South Fork Merced River

Impacts of Actions to Protect and Enhance River Values

Under Alternative 6, the Wawona Golf Course would remain open, and two stock campsites would be relocated from the Wawona stock camp to the Wawona stables. Because the campsites are currently located within a sensitive cultural area, the removal of the campsites would provide a benefit to this resource by eliminating a source of erosion and trampling, and restoration of the area would improve the integrity of the site setting.

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

Some of the management actions proposed under Alternative 6 would have the potential to result in minor to moderate adverse impacts on known American Indian traditional cultural resources through actions related to restoration, construction, and facilities removal. These could result in short-term or long-term changes in the setting of the site, destruction of native vegetation, changes in important views, or disruption through visitor use or lack of access. Consultation with representatives from traditionally associated American Indian tribes and groups to find design solutions for specific actions would avoid or reduce short-term and long-term impacts on traditional-use plant population areas, resources of religious and cultural significance, ethnographic village locations, and other significant sites. Actions in Segment 2B (West Valley)

predominantly include restoration, along with campground and parking construction actions that would result in impacts to known ethnographic village sites and traditional use areas. In the East Valley, impacts would include those to known ethnographic village sites, and traditional use areas of religious and cultural significance.

Some of the management actions associated with Alternative 6 would result in long-term beneficial impacts to known American Indian traditional cultural resources, either through restrictions on types or amounts of visitor use that can cause damage, restrict access, or influence the setting of traditional sites, or traditional-use plant population areas.

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

Cumulatively considerable projects that could affect American Indian traditional cultural resources are the same as those identified for Alternative 2, and include past, present, and reasonably foreseeable actions in the study area.

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

The combined past, present, and reasonably foreseeable future actions of the cumulative scenario would have a negligible or beneficial impact on traditional cultural resources after implementation of all associated mitigation and consultation, providing that impacts to traditional cultural resources are avoided. The proposed management actions associated with Alternatives 6, including actions common to Alternatives 2-6, may have reduced or negligible adverse impacts following consultation, or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings. Consultation with traditionally associated American Indian tribes or groups could result in mitigations that reduce cumulative impacts that may occur.

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GROWTH INDUCEMENT

Affected Environment

The purpose of this section is to disclose whether the alternatives of the *Merced River Plan/FEIS* are likely to foster additional growth, either directly or indirectly. The fact that a project may result in additional growth does not imply that such growth is either detrimental or beneficial. For example, actions that advance the purpose and need of the plan would likely be considered beneficial. Conversely, a project that fosters growth that would conflict with the goals and policies would likely be considered detrimental.

This section evaluates the potential growth inducement consequences of the management actions contained in each alternative and how the alternatives could affect the regional economy. As documented in the "Visitor Experience/Recreation" section of this chapter, there were 3.9 million annual visitors to Yosemite National Park in 2010 and 3.95 million in 2011, slightly fewer than the all-time record of 4.0 million in 1996. Yosemite visitors spend millions of dollars on entrance fees, campgrounds, hotel lodging, meals, transportation, and other goods and services both inside the park and in gateway communities outside the park. As a result, visitor spending is an important source of income and employment for the park, the primary park concessioner, and the gateway communities. In addition, the National Park Service (NPS) operating budget pays employees and contractors to perform duties and provide services within the park, which, like visitor spending, provides revenue to support the economy of the surrounding region.

The region affected by the park includes the four surrounding counties: Madera, Mariposa, Mono, and Tuolumne. As part of the socioeconomic analysis, economic and statistical profiles were developed for each county to assess the importance of tourism and NPS spending to the region. The profiles provide an economic baseline with detailed information on the size of each county's principal economic sectors in terms of economic output, employment, and other relevant economic indicators.

Regional Economy

The region evaluated in the socioeconomic analyses below includes all the gateway communities immediately adjacent to Yosemite National Park and the four counties that house them: Madera, Mariposa, Mono, and Tuolumne. The four main access roads to the park pass through the four gateway counties; Highway 41 passes through Madera and Mariposa counties, Highway 140 passes through Mariposa County, Highway 120 east passes through Mono County, and Highway 120 west passes through Tuolumne County.

Yosemite National Park is located primarily in Mariposa and Tuolumne counties, with a small southern portion in Madera County. The developed areas along the main river corridor and the South Fork Merced River, including Yosemite Valley, the El Portal Administrative Site, and Wawona are located within the jurisdiction of Mariposa County. Merced, Stanislaus, San Joaquin, and Fresno Counties were excluded from the affected region because, in these much more populous and urbanized counties, it is difficult to distinguish the portions of the tourist economies that are associated with Yosemite versus other tourist destinations. Also, tourism is a relatively small component of these counties' overall economies.

Regional Comparison

Population

In 2010 the population of the region of economic study was almost 240,000. The socioeconomic section of this chapter provides details of the historical growth rates for this region during the past 40 years. The region containing the gateway communities to Yosemite National Park has been growing much more rapidly than the state of California as a whole, though it is important to note that this regional growth percentage is relative to the small baseline of four counties that are largely rural in character.

As described in the Socieconomic section, substantial growth is projected to continue into the future, both in the region of impact and in the state as a whole. However, incomes in all four of the counties are less than the average for California as a whole. Per-capita incomes are lowest in Madera County, though household sizes tend to be larger; therefore, with more potential workers per household, household incomes in Madera are comparable to those in the neighboring counties. The poverty rate is also the highest in Madera County.

Employment

As further described in the Socioeconomics section of Chapter 9, the total employment was approximately 102,000 in the four-county area in 2010. Madera County, with the largest and most urbanized population, had the largest employment base in the region, accounting for approximately 57% of total employment. Mariposa County, which includes Yosemite Valley, El Portal, and Wawona, accounted for approximately 8% of total employment in the affected region. The Service sector, which includes most of the businesses most directly impacted by tourism and visitor spending, accounts for 45% of the total region, and 59% of Mariposa County, which includes Yosemite Valley.

According to the Local Area Unemployment Statistics program of the U.S. Bureau of Labor Statistics, in 2010 the total civilian labor force in the four-county region was 106,429, of which 90,509 were employed. The statewide unemployment rate in California at the time was 12.4%. Only Mariposa County was slightly better off with an unemployment rate of 12.1%. The other three counties were between 14.0% and 15.6% (with the highest in the most populous county, Madera). The region's average unemployment rate in 2010 was 14.8%.

Economic Output

Economic output is a measure of productivity. Measures of economic output vary, depending on the Industry sector. For the Agricultural and Trade sectors, output is measured by the value of products sold. In the Manufacturing sector, output is a measure of the value added by the manufacturer or the value of shipments. In the Service sector, output is measured as receipts in dollars. In 2010, the estimated total output of goods and services for the four-county region was approximately $12.5 billion. Madera and Tuolumne counties, which are more urbanized with cities such as Madera and Sonora, produce the majority of the region's economic output. The almost entirely rural counties of Mariposa and Mono contributed only 16% of the output. However, 57% of Mariposa's output was generated in the tourism-heavy services sector.

Madera County

According to the California Employment Development Department, almost a quarter of Madera County employment (23%) was on farms in 2010. When the Food Processing, Service, and Trade sectors of the economy are considered as well, agriculture's dominance in Madera County is obvious. The Leisure and Hospitality sector of the economy accounted for a little more than 6% of the jobs. Federal employment amounted to 300 jobs, or approximately 0.7% of county employment. In terms of fiscal resources, the transient occupancy tax only accounts for approximately 1% of Madera County's General Fund.

Madera County reaches from the crest of the Sierra Nevada range to the San Joaquin River on the Central Valley floor. The majority of the county's population and employment are concentrated along the Highway 99 corridor in the Central Valley. None of the developed parts of Yosemite National Park are in Madera County, but the county includes the headwaters of both the South Fork and the main stem of the Merced River in the high country at the southern end of the park. Because of its large geographic size and diversity of the economy of Madera County, tourism associated with the park is not particularly important to the county as a whole. On the other hand, the eastern communities in the county, specifically Oakhurst and Bass Lake, are much more dependent on Yosemite tourism.

Mariposa County

According to the Employment Development Department, tourism is Mariposa County's main industry and the area's largest employer, with more than a third (37%) of all jobs in the Leisure and Hospitality sector in 2010. The county's primary recreation area/tourist attraction is Yosemite National Park, much of which lies within the county, including the developed areas of Yosemite Valley, Wawona, and El Portal Administrative Site. Other major recreation areas in Mariposa County include Stanislaus National Forest and Sierra National Forest, as well as the U.S. Forest Service/Bureau of Land Management recreation areas along the Merced River. Other recreation resources in Mariposa County include Lake Don Pedro, Lake McSwain, and Lake McClure where camping is available.

Mariposa County's economy is very different than Madera County's. Less than 1% of Mariposa employment is on farms. In contrast, with the national park and forests, federal employment is much more important, accounting for approximately 800 jobs or 16% of county employment in 2010.

From a fiscal standpoint, Mariposa is the most dependent on tourism of the four counties. Almost a quarter of the $42 million Mariposa County General Fund is derived from the Transient Occupancy Tax (TOT), or approximately $10 million in the most recent fiscal year. The TOT is levied at the rate of 10% of the room rate and is collected from Bed and Breakfasts and transient rentals (e.g., Vacation Rentals by Owner), as well as from traditional hotels and motels. In addition, there is another 1% tax on transient rooms in the form of a Tourism Business Improvement District Assessment (TBID). All of the accommodations in Yosemite Valley, as well as those in Wawona, contribute to Mariposa's General Fund through the TOT and generate money for the TBID, as well.

Another way to look at it is Mariposa County collects 62% of the entire TOT generated within the four-county region.

Mono County

Mono County is one of the least populated counties in California and is the gateway county for visitors entering through the eastern park entrance. Park access via this entrance is limited in the winter because the entrance is typically closed from November to late May as a result of snowfall. Lodging, food, beverage, and other services are central to Mono County's economy, which is also bolstered by extensive natural resources and recreational opportunities.

According to Employment Development Department data for 2010, the Leisure and Hospitality sector accounted for almost half (49%) of all employment in Mono County. Federal employment constituted approximately 200 jobs or about 3% of all employment.

Mono County only collects about $2 million per year in Transient Occupancy Taxes, but because it is such a small county, that amount constitutes 7% of the county's General Fund.

Tuolumne County

The Tuolumne River watershed portion of Yosemite National Park is in the southeastern portion of Tuolumne County. The county also contains significant national forest lands and the Emigrant Wilderness, with recreation destinations scattered throughout. In addition to Yosemite, other recreational attractions in Tuolumne County include Columbia State Park, Stanislaus National Forest, Dodge Ridge Ski Area, and Pinecrest Lake.

The bulk of Tuolumne County's economy is clustered on private lands along Highways 49 and 108, as well as centered in the town of Sonora. According to the Employment Development Department, the Leisure and Hospitality sector accounted for about 12% of the jobs in Tuolumne County in 2010. Federal employment was approximately 400 jobs at that time, or about 3% of county jobs. The TOT in Tuolumne County generates about $2 million per year, representing approximately 4% of the General Fund.

Trends in Visitation to the Park

Visitation grew explosively at the beginning of the 20th century, only to crash along with the economy in the early 1930s. Then, growth began again, only to be halted by World War II. The post-war era showed strong, long-term growth, peaking in 1996. In 1987, when the Merced was designated a Wild and Scenic River, visitation to the park stood at 3.2 million. The effects of the flood in early 1997, which dramatically reduced the inventory of overnight accommodations in Yosemite Valley, can be seen over the subsequent decade. The strong growth trend observed prior to 1997 can be seen again in recent years.

Growth-Inducing Impacts

While not required under NEPA, the California Environmental Quality Act (CEQA), section 15126.2(d), requires a discussion of the potential for a proposed plan to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Specifically, Section 15126.2(d) requires that plans discuss "the ways in which the proposed project could foster economic development or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment … [and also] discuss the characteristics of some projects which may encourage and facilitate other activities that could substantially affect the environment, either individually or

cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment."

A growth-inducing project would directly or indirectly

- foster economic or population growth or additional housing
- remove obstacles to growth
- tax community services or facilities to such an extent that new services or facilities would be necessary
- encourage or facilitate other activities that cause significant environmental effects

Proposed management actions for Alternatives 2–6 are evaluated in terms of the context, intensity, and duration of socioeconomic impacts and whether impacts were considered beneficial or adverse to the socioeconomic environment.

- **Context**. The context of the impact considers whether the impact would be local or regional. Like the analysis under socioecoomics, the analysis of growth inducement differs from other resource areas in that even "local" impacts are not confined to any one river segment. For purposes of this analysis, local impacts would be those that occur parkwide within Yosemite National Park. Regional impacts would be impacts in the four-county area around the park (Tuolumne, Mono, Mariposa, and Madera), including all gateway communities. Growth Inducement will be discussed under the heading of "All River Segments."
- **Intensity**. The intensity of the impact considers whether effects would be negligible, minor, moderate, or major.
    - ***Negligible*** impacts are considered not detectable and are expected to have no discernible effect on growth.
    - ***Minor*** impacts are slightly detectable and are not expected to have an overall effect on the character of the social and economic environment and on local or regional growth.
    - ***Moderate*** impacts are detectable, without question, and could have an appreciable effect on the character of the social and economic environment and on local or regional growth.
    - ***Major*** impacts are considered to have a substantial, highly noticeable influence on the social and economic environment and local or regional growth altering the environment over the long run.

In addition, impacts are recognized as indeterminate if the intensity of their effects on the on local or regional growth could not be readily identified (especially when compared with the potential influence of other social and economic factors and/or when data limitations exist).

- **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 and would be associated with transitional types of activities. A long-term impact would have an ongoing effect on the socioeconomic environment.
- **Type of Impact.** While other impacts were evaluated in terms of whether they would be beneficial or adverse to the socioeconomic environment, it must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment

Environmental Consequences of Alternative 2: Self-reliant Visitor Experiences and Extensive Floodplain Restoration

All River Segments

Although the entire regional economy may shrink somewhat due to the actions proposed under Alternative 2, the potential shift of some visitor spending from inside the park to gateway communities could create some pressure for new growth in localized areas outside the park. Growth pressures for new visitor-serving commercial facilities would be strongest in communities offering convenient access to the park. To the extent that additional employment is added due to additional commercial business and/or growth in commercial facilities, there may be an indirect inducement for growth in housing stock to accommodate new workers. Residential growth pressures would be strongest in communities that offer an attractive residential environment within reasonable commute distance of jobs, which may be the same communities that receive the visitor-serving growth. New residents may add additional children to local school districts, increasing the load on the educational system but also provide additional average daily attendance reimbursement revenue from the state to the local districts. Additional resident household spending could further increase the need for grocery stores, gas stations, and other commercial facilities.

While the socioeconomic impacts of Alternative 2 are negligible from a regional standpoint, there is potential for long-term growth-inducing impacts on one or more gateway communities because these communities would likely respond to the potential need for additional accommodations and services no longer provided within Yosemite under this alternative.

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

All River Segments

Although the entire regional economy may shrink somewhat due to the actions under Alternative 3, the shift of some visitor spending from inside the park to gateway communities could create some pressure for new growth in localized areas outside the park. Growth pressures for new visitor-serving commercial facilities would be strongest in communities offering convenient access to the park. To the extent that additional employment is added due to additional commercial business and/or growth in commercial facilities, there may be an indirect inducement for growth in housing stock to accommodate new workers. Residential growth pressures would be strongest in communities that offer an attractive residential environment in reasonable commute distance of jobs, which may or may not be the same communities as those receiving the visitor-serving growth. New residents may add additional children to local school districts, increasing both the load on the educational system, but also providing additional average daily attendance reimbursement revenue from the state to the local districts. Additional resident household spending could further increase the need for grocery stores, gas stations, and other commercial facilities.

While the impacts of Alternative 3 are negligible from a regional standpoint, there is potential for long-term growth inducing impacts on one or more gateway communities as these communities would likely respond to the potential need for additional accommodations and services that are no longer provided within Yosemite under this alternative.

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

All River Segments

Although the entire regional economy may shrink somewhat due to the actions in Alternative 4, the shift of some visitor spending from inside the park to gateway communities could create some pressure for new growth in localized areas outside the park. Growth pressures for new visitor-serving commercial facilities would be strongest in communities offering convenient access to the park. To the extent that additional employment is added due to additional commercial business and/or growth in commercial facilities, there may be an indirect inducement for growth in housing stock to accommodate new workers. Residential growth pressures would be strongest in communities that offer an attractive residential environment in reasonable commute distance of jobs, which may or may not be the same communities as those receiving the visitor-serving growth. New residents may add additional children to local school districts, increasing both the load on the educational system, but also providing additional average daily attendance reimbursement revenue from the state to the local districts. Additional resident household spending could further increase the need for grocery stores, gas stations, and other commercial facilities.

While the impacts of Alternative 4 are negligible from a regional standpoint, there is potential for long-term growth-inducing impacts on one or more gateway communities as these communities would likely respond to the potential need for additional accommodations and services that are no longer provided within Yosemite under this alternative.

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

All River Segments

Although the entire regional economy would likely remain about the same as today due to the actions under Alternative 5, this alternative may result in a minor shift of some visitor spending from inside the park to gateway communities. In the long-term, growth-inducement impacts would therefore be similar to those of current conditions, with regional communities providing employment and services similar to current levels.

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

All River Segments

Given that accommodations for overnight stays in the park would increase under Alternative 6, and day use access would become slightly more constrained, more visitor service could be provided in the park and there would potentially be less demand pressure on facilities in gateway communities. Alternative 6 would not contribute to growth outside of the park.

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Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
1. Geology, Geohazards, and Soils					
Segment 1 *Soils*: Meadow recovery from former pack stock grazing would continue to have local, long-term, minor, beneficial impacts. On a segmentwide and local level there would be long-term, minor, adverse impacts to soil resources at the extensive network of social trails in Segment 1. Existing visitor use and facilities would continue to result in segment-wide, long-term, minor, adverse impacts.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils:* The removal of minor structures would have a local long-term, minor, beneficial impact on soil resources by resulting in a slight reduction in the stresses on soils from visitor uses, overnight camping, and presence of infrastructure.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils:* The removal of minor structures would have a local long-term, minor, beneficial impact on soil resources by resulting in a slight reduction in the stresses on soils from visitor uses, overnight camping, and presence of infrastructure.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils:* The removal of minor structures would have a local long-term, minor, beneficial impact on soil resources by resulting in a slight reduction in the stresses on soils from visitor uses, overnight camping, and presence of infrastructure.	Segment 1 Impacts of Actions to Manage User Capacity, Land Use, and Facilities *Soils:* Restoration actions and reductions in overnight accommodations would have a local, long-term, minor, beneficial impact on soil resources.	Segment 1 Impacts of Actions to Manage User Capacity, Land Use, and Facilities - *Soils*: The general level of visitor use would slightly increase and visitor impacts, such as soil compaction and informal trail use, would continue. Restoration actions, however, would reduce the stresses on soils. The overnight accommodation actions would thus result in long-term, local, minor, adverse impacts on soil resources.
Segments 2A and 2B *Soils*: Restoration projects in Segments 2A (East Valley) and 2B (West Valley) meadows and on the riverbanks would result in local, long-term, minor to moderate, beneficial impacts. Continued riverbank erosion and trampling from informal trails and a stock trail would result in local, long-term, minor to moderate, adverse impacts within Segments 2A (East Valley) and 2B (West Valley). The presence of disturbed ground, construction-related fills, and the general coverage and density of developed facilities would continue to result in a segmentwide, long-term, moderate, adverse impact on soil resources within Segments 2A (East Valley) and 2B (West Valley). *Geohazards:* Implementation of the 2012 Yosemite Valley Geologic Hazard Guidelines and associated visitor use and facilities actions would result in local, long-term, minor, beneficial impacts with respect to geohazards within the East and West Yosemite Valley areas.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* *Soils*: Removal of campsites, informal trails, and other restoration actions would result in local, long-term, moderate beneficial impacts with respect to soil resources. On a segmentwide level, impacts would be long-term, minor and beneficial within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Geohazards*: Reduced visitation and removal of lodging from the rockfall hazard areas would reduce exposure to geohazards, which is a segmentwide, long-term, moderate, beneficial impact within Segments 2A (East Valley) and 2B (West Valley). *Soils*: Within Segment 2B (West Valley) proposed actions, including those resulting in reduced visitation and removal of facilities, would have long-term, local, minor to moderate, beneficial impacts on soil resources. Permanent disturbance of soils resulting from new development for concessioner housing and parking would directly affect soils through compaction and paving, resulting in local, long-term, minor to moderate, adverse impacts within Segment 2A (East Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* *Soils*: Removal of campsites, informal trails, and other restoration actions would result in local, long-term, moderate, beneficial impacts with respect to soil resources. On a segmentwide level, impacts would be long-term, minor to moderate and beneficial within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Geohazards*: Reduced visitation and removal of lodging from the rockfall hazard areas would reduce exposure to geohazards, which is a segment-wide, long-term, moderate, beneficial impact within Segments 2A (East Valley) and 2B (West Valley). *Soils*: Permanent disturbance of soils due to new development at Curry Village, Yosemite Village, and Yosemite Lodge, would have a local, long-term, moderate, adverse impact on soil resources within Segment 2A (East Valley). Within Segment 2B (West Valley) proposed actions, including those resulting in reduced visitation and removal of facilities, would have a local, long-term, minor to moderate, beneficial impact on soil resources.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* *Soils*: Removal of campsites, informal trails, and other restoration actions would result in local, long-term, minor to moderate, beneficial impacts with respect to soil resources. On a segmentwide level, impacts would be long-term, minor to moderate and beneficial within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Geohazards*: Reduced visitation and removal of lodging from the rockfall hazard areas would reduce exposure to geohazards, which is a segment-wide, long-term, minor to moderate, beneficial impact within Segments 2A (East Valley) and 2B (West Valley). *Soils*: Permanent disturbance of soils due to new development at Curry Village, Yosemite Village, and Yosemite Lodge, would have a local, long-term, minor to moderate, adverse impact on soil resources within Segment 2A (East Valley). Within Segment 2B (West Valley), proposed actions, including those associated with reduced visitation and facilities removal, would have local, long-term, minor to moderate beneficial impacts on soil resources.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* *Soils*: Removal of campsites, informal trails, and other restoration actions would result in local, long-term, minor to moderate, beneficial impacts with respect to soil resources. On a segmentwide level, impacts would be long-term, minor and beneficial within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Geohazards*: Reduced visitation and removal of lodging from the rockfall hazard areas would reduce exposure to geohazards, which is a segmentwide, long-term, minor, beneficial impact within Segments 2A (East Valley) and 2B (West Valley). *Soils*: Permanent disturbance of soils due to new development at Curry Village, Yosemite Village, and Yosemite Lodge, would have a local, long-term, minor to moderate, adverse impact on soil resources within Segment 2A (East Valley). Within Segment 2B (West Valley), proposed actions associated with facilities removal and/or reconfiguration would have long-term, local, minor, beneficial impacts on soil resources.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* *Soils*: Removal of campsites, informal trails, and other restoration actions would result in local, long-term, moderate, beneficial impacts with respect to soil resources. On a segmentwide level, impacts would be long-term, minor to moderate and beneficial within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Geohazards*: Reduced visitation and removal of lodging from the rockfall hazard areas would reduce exposure to geohazards, which is a segmentwide, long-term, negligible, beneficial impact within Segments 2A (East Valley) and 2B (West Valley). *Soils*: Permanent disturbance of soils due to new development at Curry Village, Yosemite Village, and Yosemite Lodge, would have a local, long-term, moderate, adverse impact on soil resources within Segment 2A (East Valley). Within Segment 2B, (West Valley) proposed actions, mainly those concerning the construction of new facilities, would have a long-term, local, moderate to major, adverse impact on soils resources.
Segment 3 & 4 *Soils:* Vehicles and foot traffic would continue to affect soils near valley oak trees in El Portal which would be a local, long-term, minor, adverse impact on soils supporting valley oak trees.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Oak protection activities would result in long-term, local, moderate, beneficial impact on soils. In a segmentwide context, the actions would result in a minor, beneficial impact on soil resources. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: New housing facilities at Abbieville, El Portal Village Center, and Rancheria would disturb soil resources through installation, compaction, and paving, and would also lead to further compaction of soils and/or increased susceptibility to erosion through increased foot traffic. Therefore, these actions would result in a long-term, local, minor, adverse impact on soil resources.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Oak protection activities would result in long-term, local, moderate, beneficial impact on soils. In a segmentwide context, the actions would result in a minor, beneficial impact on soil resources. *Impacts of Actions to Manage Visitor Use and Facilities:* *Soils*: Facility actions would remove existing housing units at Abbieville and El Portal Trailer Court and restore the floodplain. These actions would result in long-term, minor beneficial impact at the local level. New housing development at El Portal Village Center and Rancheria Flatt would permanently disturb soil resources, resulting in a long-term, minor, adverse, impact.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Oak protection activities would result in long-term, local, moderate, beneficial impact on soils. In a segmentwide context, the actions would result in a minor, beneficial impact on soil resources. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Facility actions would remove existing housing units at Abbieville and El Portal Trailer Court and restore the floodplain. These actions would result in long-term, minor beneficial impact at the local level. New housing development at El Portal Village Center and Rancheria Flatt would permanently disturb soil resources, resulting in a long-term, minor, adverse, impact.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Oak protection activities would result in long-term, local, moderate, beneficial impact on soils. In a segmentwide context, the actions would result in a minor, beneficial impact on soil resources. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Facility actions would remove existing housing units at Abbieville and El Portal Trailer Village, construct new 300-vehicle overflow parking lot and RV campground, and restore the floodplain. These actions would result in long-term, minor adverse impact at the local level. New housing development at Rancheria Flat would permanently disturb soil resources, resulting in a long-term, minor, adverse, impact.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Oak protection activities would result in long-term, local, moderate, beneficial impact on soils. In a segmentwide context, the actions would result in a minor, beneficial impact on soil resources. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Facility actions would remove existing housing units at Abbieville restore the floodplain. These actions would result in long-term, minor beneficial impact at the local level. New housing development at Abbieville, El Portal Village Center, and Rancheria Flatt would permanently disturb soil resources, resulting in a long-term, minor, adverse, impact.

Segment 1 – Above Nevada Falls
Segment 2 - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
1. Geology, Geohazards, and Soils (cont.)					
Segment 5,6,7, & 8 *Soils*: Continued riverbank erosion and soil compaction at Wawona Store picnic area and Wawona Campground would result in local, long-term, minor, adverse impacts.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Actions include removal of the Wawona Golf Course, which would result in local, long-term, moderate beneficial impacts. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Soil stresses would be decreased due to the elimination of stable rides, the reduction in the number of visitors, and removal of campsites. These actions would have a local, long-term, minor to moderate, beneficial impact on soils in the Wawona area.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Actions include removal of the Wawona Golf Course, which would result in local, long-term, moderate, beneficial impacts. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Soil stresses would be reduced, resulting in local, long-term, minor to moderate, beneficial impacts.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Actions include removal of relocation of the stock use campsite, which would result in local, long-term, minor beneficial impacts. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Soil stresses would be reduced, resulting in local, long-term, minor, beneficial impacts.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Actions include relocation of the stock use campsite, which would result in local, long-term, minor beneficial impacts. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Soil stresses would be reduced, resulting in local, long-term, minor, beneficial impacts.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* *Soils*: Actions include relocation of the stock use campsite, which would result in local, long-term, minor beneficial impacts. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* *Soils*: Soil stresses would be reduced, resulting in local, long-term, minor, beneficial impacts.
Cumulative *Geohazards:* Past and present projects, combined with Alternative 1 expose visitor to risks from earthquakes and rock falls, which is a parkwide, long-term, moderate, adverse impact. Continued stabilization and rehabilitation work, and policy restrictions from development in rock-fall hazard zones in Segment 2, would provide some local, long-term, moderate, beneficial impacts. *Soils* – A combination of adverse impacts from and beneficial impacts from restoration activities on soil resources would likely result in an overall balance which is considered a parkwide, long-term, negligible, adverse, cumulative effect.	Cumulative *Geohazards* – At a parkwide level, Alternative 2, in combination with past, present, and reasonably foreseeable future projects, would result in a negligible, adverse, cumulative effect with respect to exposure of park visitors and facilities to geohazards. *Soils* – Cumulatively, a combination of adverse and beneficial impacts would occur. Beneficial impacts (e.g., meadow/riparian restoration, removal of informal trails, directing of visitors away from sensitive areas) would likely outweigh adverse impacts (which would generally be short term or highly localized). Combined with the generally positive impacts of past, present, and reasonably foreseeable future projects, Alternative 2 would result in a parkwide, minor to moderate, beneficial, cumulative impact.	Cumulative *Geohazards* – At a parkwide level, Alternative 3, in combination with past, present, and reasonably foreseeable future projects, would result in a negligible, adverse impact with respect to exposure of park visitors and facilities to geohazards. *Soils* – Cumulatively, a combination of adverse and beneficial impacts would occur. Beneficial impacts (e.g., meadow/riparian restoration, removal of informal trails, directing of visitors away from sensitive areas) would likely outweigh adverse impacts (which would generally be short term or highly localized). Combined with the generally positive impacts of past, present, and reasonably foreseeable future projects, Alternative 3 would result in a parkwide, minor to moderate, beneficial, cumulative impact.	Cumulative *Geohazards* – At a parkwide level, Alternative 4, in combination with past, present, and reasonably foreseeable future projects, would result in a negligible, adverse impact with respect to exposure of park visitors and facilities to geohazards. *Soils* – Cumulatively, a combination of adverse and beneficial impacts would occur. Beneficial impacts (e.g., meadow/riparian restoration, removal of informal trails, directing of visitors away from sensitive areas) would likely outweigh adverse impacts (which would generally be short term or highly localized). Combined with the generally positive impacts of past, present, and reasonably foreseeable future projects, Alternative 4 would result in a parkwide, minor, beneficial, cumulative impact.	Cumulative *Geohazards* – At a parkwide level, Alternative 5, in combination with past, present, and reasonably foreseeable future projects, would result in a negligible, adverse impact with respect to exposure of park visitors and facilities to geohazards. *Soils* – Cumulatively, a combination of adverse and beneficial impacts would occur. Beneficial impacts (e.g., meadow/riparian restoration, removal of informal trails, directing of visitors away from sensitive areas) would likely outweigh adverse impacts (which would generally be short term or highly localized). Combined with the generally positive impacts of past, present, and reasonably foreseeable future projects, Alternative 5 would result in a parkwide, minor, beneficial, cumulative impact.	Cumulative *Geohazards* – At a parkwide level, Alternative 6, in combination with past, present, and reasonably foreseeable future projects, would result in a negligible, adverse impact with respect to exposure of park visitors and facilities to geohazards. *Soils* – Cumulatively, a combination of adverse and beneficial impacts would occur. Beneficial impacts (e.g., meadow/riparian restoration, removal of informal trails, directing of visitors away from sensitive areas) would likely outweigh adverse impacts (which would generally be short term or highly localized). Combined with the generally positive impacts of past, present, and reasonably foreseeable future projects, Alternative 6 would result in a parkwide, negligible, beneficial, cumulative impact.
2. Hydrology, Floodplains and Water Quality					
Segment 1 The continued presence of the Nevada Fall Diversion Dam would slightly alter the natural processes of the Merced River, but would not have an overall affect on the character of the river. Water quality would be expected to remain high, with isolated instances of minor contamination, especially after storm events, but would not be expected to exceed water quality standards. These actions would have a local, long-term, negligible to minor, adverse impact on water quality	Segment 1 Hydrology. Overnight capacities for both Little Yosemite Valley and Merced Lake would be reduced promoting dispersed camping. Concentrated campgrounds would be removed and replaced with dispersed camping, reducing the potential for informal trails and vegetation trampling, leading to an increase in the ability of the soil to infiltrate runoff. This action would result in a local, long-term, negligible, beneficial impact on hydrology. Water Quality. These actions would reduce erosion and would result in a local, long-term, negligible, beneficial, impact on water quality.	Segment 1 Hydrology. Overnight capacities for both Little Yosemite Valley and Merced Lake would be reduced promoting dispersed camping. Concentrated campgrounds would be removed and replaced with dispersed camping, reducing the potential for informal trails and vegetation trampling, leading to an increase in the ability of the soil to infiltrate runoff. This action would result in a local, long-term, negligible, beneficial impact on hydrology. Water Quality. These actions would reduce erosion and would result in a local, long-term, negligible, beneficial, impact on water quality.	Segment 1 Hydrology. Overnight capacities for both Little Yosemite Valley and Merced Lake would be reduced promoting dispersed camping. Concentrated campgrounds would be removed and replaced with dispersed camping reducing the potential for informal trails and vegetation trampling. This action would result in a local, long-term, negligible, beneficial impact on hydrology. Water Quality. These actions would reduce erosion and would result in a local, long-term, negligible, beneficial, impact on water quality.	Segment 1 Hydrology. The reduction in capacity at Merced Lake High Sierra Camp would slightly reduce the amount of localized vegetation trampling, leading to an increase in the ability of the soil to infiltrate runoff. This action would result in a local, long-term, negligible, beneficial impact on hydrology. Water Quality. The reduction in capacity at Merced Lake High Sierra Camp would slightly reduce the amount of localized vegetation trampling, leading to a decrease in erosion. This action would result in a local, long-term, negligible, beneficial impact on water quality.	Segment 1 Hydrology. The continuation of current levels of visitor use and concentrated camping may increase informal trails and vegetation trampling, and would result in a local, long-term, negligible, adverse impact on hydrology. Water Quality. The continuation of current levels of visitor use and concentrated camping may increase informal trails and vegetation trampling, increasing the potential for erosion, resulting in a local, long-term, negligible, adverse impact on water quality.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
2. Hydrology, Floodplains and Water Quality (cont.)					
Segments 2A and 2B Hydrology. Bridges would continue to affect the geologic and hydrologic processes, exacerbate scour, and cause streambank erosion leading to continued impediments to the hydrology of the Merced River. This would cause corridorwide, long-term, moderate, adverse impacts on hydrology, primarily within Segment 2A (East Valley). Continued concentrated visitor use on riverbanks would adversely affect floodplains and would constitute a corridorwide, long-term, minor, adverse impact on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley) areas. Water quality in Segment 2A (East Valley) and Segment 2B (West Valley) would be expected to remain high, with isolated instances of minor contamination especially after storm events, but would not be expected to exceed water quality standards.	Segments 2A and 2B Hydrology. Removal of Stoneman, Sugar Pine, and Ahwahnee bridges, among other development from 100-year floodplain, and restoration and/or redevelopment of these areas would have local, long-term, minor to moderate, beneficial impact on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley). Water Quality. These actions would reduce polluted stormwater runoff, channel scour, and erosion, resulting in local, long-term, minor to moderate, beneficial impact on water quality within Segment 2A (East Valley) and Segment 2B (West Valley). Floodplains: These actions would also reduce water surface elevations during floods, thereby resulting in a local, long-term, minor, beneficial and adverse impact on floodplains within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B Hydrology. Removal of Stoneman, Sugar Pine, and Ahwahnee bridges, among other development from within 150 feet of the river, and restoration and/or reconfiguration of these areas would have local, long-term, minor to moderate, beneficial impact on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley). Water Quality. These actions would reduce polluted stormwater runoff, channel scour, and erosion, resulting in local, long-term, minor, beneficial impact on water quality within Segment 2A (East Valley) and Segment 2B (West Valley). Floodplains: These actions would also reduce water surface elevations during floods, thereby resulting in a local, long-term, minor, beneficial impact on floodplains within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B Hydrology. Removal of Sugar Pine and Ahwahnee bridges, among other development from within 150 feet of the river, and restoration and/or reconfiguration of these areas would have local, long-term, minor to moderate, beneficial impact on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley). Water Quality. These actions would reduce polluted stormwater runoff, channel scour, and erosion, resulting in local, long-term, minor, beneficial impact on water quality within Segment 2A (East Valley) and Segment 2B (West Valley). Floodplains: These actions would also reduce water surface elevations during floods, thereby resulting in a local, long-term, minor, beneficial impact on floodplains within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B Hydrology. Retention with increased riverbank management or removal of Sugar Pine Bridge, among other development from within 100 feet of the river, and restoration and/or reconfiguration of these areas would have local, long-term, minor, beneficial impact on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley). Water Quality. These actions would reduce polluted stormwater runoff, channel scour, and erosion, resulting in local, long-term, negligible to minor, beneficial impact on water quality within Segment 2A (East Valley) and Segment 2B (West Valley). Floodplains: These actions would also reduce water surface elevations during floods, thereby resulting in a local, long-term, negligible, beneficial impact on floodplains within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B Hydrology. Placement of large wood and constructed logjams along the bases of Sugar Pine, Ahwahnee, and Stoneman Bridges, removal of development from within 100 feet of the river, and development and redevelopment of areas beyond, would have a local, long-term, negligible to minor, beneficial impacts on hydrology within Segment 2A (East Valley) and Segment 2B (West Valley). Water Quality. These actions would reduce polluted stormwater runoff, channel scour, and erosion, resulting in local, long-term, negligible, beneficial impact on water quality within Segment 2A (East Valley) and Segment 2B (West Valley). Floodplains: These actions would also reduce water surface elevations during floods, thereby resulting in a local, long-term, negligible, beneficial impact on floodplains within Segment 2A (East Valley) and Segment 2B (West Valley).
Segments 3 and 4 Hydrology. Infrastructure along Highway 140; riprap along the river and abandoned infrastructure and imported fill remain, affecting natural river processes. Local, long-term, minor, adverse impact on hydrology. Water Quality. Off-street and roadside parking areas and fuel station would continue to be located underneath valley oaks having the potential to introduce hydrocarbons and sediment to the river, resulting in a long-term, negligible, adverse local, impact on water quality.	Segments 3 and 4 Hydrology. Oak protection, removal of fill, and decompaction would promote infiltration in the area, resulting in a local, long-term, negligible, beneficial impact on hydrology. Construction of new concessioner employee housing at Abbieville and Rancheria Flatt would involve vegetation removal, soils compaction, and increased areas of impervious surfaces, contributing to local, long-term, minor, adverse impacts on hydrology. Water Quality. Oak protection actions would have a long-term, negligible, beneficial impact on water quality. New housing development would have a local long-term, negligible, adverse impact on water quality.	Segments 3 and 4 Hydrology. Oak protection, removal of fill, and decompaction and parking restrictions would promote infiltration in the area, resulting in a local, long-term, negligible, beneficial impact on hydrology. Construction of new concessioner employee housing at Abbieville and Rancheria Flatt would involve vegetation removal, soils compaction, and increased areas of impervious surfaces, contributing to local, long-term, minor, adverse impacts on hydrology. Water Quality. These actions would also have a local long-term, negligible, adverse impact on water quality.	Segments 3 and 4 Hydrology. Oak protection, removal of fill, and decompaction and parking restrictions would promote infiltration in the area, resulting in a local, long-term, negligible, beneficial impact on hydrology. Construction of new concessioner employee housing at Abbieville and Rancheria Flatt would involve vegetation removal, soils compaction, and increased areas of impervious surfaces, contributing to local, long-term, minor, adverse impacts on hydrology. Water Quality. These actions would also have a local long-term, negligible, adverse impact on water quality.	Segments 3 and 4 Hydrology. Oak protection, removal of fill, and decompaction and parking restrictions would promote infiltration in the area, resulting in a local, long-term, negligible, beneficial impact on hydrology. Construction of new concessioner employee housing at Abbieville and Rancheria Flatt would involve vegetation removal, soils compaction, and increased areas of impervious surfaces, contributing to local, long-term, minor, adverse impacts on hydrology. Water Quality. These actions would also have a local long-term, negligible, adverse impact on water quality.	Segments 3 and 4 Hydrology. Oak protection, removal of fill, and decompaction and parking restrictions would promote infiltration in the area, resulting in a local, long-term, negligible, beneficial impact on hydrology. Construction of new concessioner employee housing at Abbieville and Rancheria Flatt would involve vegetation removal, soils compaction, and increased areas of impervious surfaces, contributing to local, long-term, minor, adverse impacts on hydrology. Water Quality. These actions would also have a local long-term, negligible, adverse impact on water quality.
Segments 5, 6, 7, and 8 Facilities such as the Wawona Store Picnic Area, the impoundment and surface water withdrawals from the South Fork would present a local, long-term, minor, adverse impact on hydrology	Segments 5, 6, 7, and 8 Hydrology. The removal and restoration of the Wawona Golf Course and campsites would result in a decrease of trampling and an increase in native vegetation and soil infiltration. Impervious surfaces would be reduced, thereby restoring the hydrologic regime resulting in a local, long-term minor, beneficial impact on hydrology. Water Quality, These actions would decrease trampling, established vegetation would be less likely to erode, which would reduce fine sediment loads resulting in a local, long-term, negligible, beneficial impact on water quality. Floodplain. These actions would also increase connectivity between the South Fork Merced River and its floodplain. This would result in a local, long-term, minor, beneficial impact on floodplains.	Segments 5, 6, 7, and 8 Hydrology. The removal and restoration of the Wawona Golf Course and campsites sites would result in a decrease of trampling and an increase in native vegetation and soil infiltration. Impervious surfaces would be reduced, thereby restoring the hydrologic regime resulting in a local, long-term minor, beneficial impact on hydrology. Water Quality, These actions would decrease trampling, established vegetation would be less likely to erode, which would reduce fine sediment loads resulting in a local, long-term, negligible, beneficial impact on water quality. Floodplain. These actions would also increase connectivity between the South Fork Merced River and its floodplain. This would result in a local, long-term, minor, beneficial impact on floodplains.	Segments 5, 6, 7, and 8 Hydrology. The removal and restoration of campsites sites would result in a decrease of trampling and an increase in soil infiltration. Impervious surfaces would be reduced, thereby restoring the hydrologic regime resulting in a local, long-term minor, beneficial impact on hydrology. Water Quality. These actions would decrease trampling, established vegetation would be less likely to erode, which would reduce fine sediment loads resulting in a local, long-term, negligible, beneficial impact on water quality. Floodplains. These actions would also increase connectivity between the South Fork Merced River and its floodplain. This would result in a local, long-term, minor, beneficial impact on floodplains.	Segments 5, 6, 7, and 8 Hydrology. The removal and restoration of campsites sites would result in a decrease of trampling and an increase in soil infiltration. Impervious surfaces would be reduced, thereby restoring the hydrologic regime resulting in a local, long-term minor, beneficial impact on hydrology. Water Quality. These actions would decrease trampling, established vegetation would be less likely to erode, which would reduce fine sediment loads resulting in a local, long-term, negligible, beneficial impact on water quality. Floodplains. These actions would also increase connectivity between the South Fork Merced River and its floodplain. This would result in a local, long-term, minor, beneficial impact on floodplains.	Segments 5, 6, 7, and 8 Hydrology. The removal and restoration of campsites sites would result in a decrease of trampling and an increase in soil infiltration. Impervious surfaces would be reduced, thereby restoring the hydrologic regime resulting in a local, long-term minor, beneficial impact on hydrology. Water Quality. These actions would decrease trampling, established vegetation would be less likely to erode, which would reduce fine sediment loads resulting in a local, long-term, negligible, beneficial impact on water quality. Floodplains. These actions would also increase connectivity between the South Fork Merced River and its floodplain. This would result in a local, long-term, minor, beneficial impact on floodplains.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
2. Hydrology, Floodplains and Water Quality (cont.)					
Cumulative Overall development and recreational uses within the Merced River watershed have resulted in local, long-term, moderate, adverse impacts on natural hydrology, water quality, and floodplains throughout the Yosemite region.	Cumulative The removal of riprap, removal of three bridges and unnecessary infrastructure, restoration of meadow hydrology, and improvements to wastewater collection would result in increased alluvial processes, reconnection of the Merced River to its floodplain, and enhanced water quality. This would contribute to local, long-term, moderate to major, beneficial cumulative impacts on hydrology, and floodplains, and a local, long-term, minor to moderate, beneficial cumulative impact on water quality.	Cumulative The removal of riprap, removal of three bridges and unnecessary infrastructure, restoration of meadow hydrology, and improvements to wastewater collection would result in increased alluvial processes, reconnection of the Merced River to its floodplain, and enhanced water quality. This would contribute to local, long-term, moderate to major, beneficial cumulative impacts on hydrology and floodplains, and a local, long-term, minor to moderate, beneficial cumulative impact on water quality	Cumulative The removal of riprap, removal of three bridges and unnecessary infrastructure, restoration of meadow hydrology, and improvements to wastewater collection would result in increased alluvial processes, reconnection of the Merced River to its floodplain, and enhanced water quality. This would contribute to local, long-term, moderate, beneficial cumulative impacts on hydrology and floodplains, and a local, long-term, minor to moderate, beneficial cumulative impact on water quality	Cumulative Under Alternative 5, removal of riprap, removal of one bridge and unnecessary infrastructure, installation of logjams and other hydrology-enhancing actions, restoration of meadow hydrology, and improvements to wastewater collection would result in increased alluvial processes, reconnection of the Merced River to its floodplain, and enhanced water quality. This would contribute to local, long-term, moderate, beneficial cumulative impacts on hydrology and floodplains, and local, long-term, minor to moderate, beneficial cumulative impacts on water quality.	Cumulative Removal of riprap and unnecessary infrastructure, restoration of meadow hydrology, installation of logjams and other hydrologic would result in increased alluvial processes, reconnection of the Merced River to its floodplain, and enhanced water quality. This would contribute to local, long-term, minor, beneficial cumulative impacts on hydrology, floodplains, and water quality.
3. Vegetation and Wetlands					
Segment 1 Impacts on vegetation and wetland resources in Segment 1 under the No-action Alternative would be local, long-term, and minor adverse.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in a local, long-term, moderate, beneficial impact on plant communities and wetlands in Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in a local, long-term, moderate, beneficial impact on plant communities and wetlands in Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in a local, long-term, minor, beneficial impact on plant communities and wetlands in Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in a local, long-term, negligible, beneficial impact on plant communities and wetlands in Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in continued local, long-term, minor, adverse impacts on vegetation and wetlands within Segment 1.
Segments 2A and 2B Impacts on vegetation and wetland resources in Segment 2 through implementation of the No-action Alternative are considered to be local, long-term, and moderate adverse within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 2 would result in the restoration of approximately 271 acres of vegetation and 46.8 acres of wetland, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of vegetation, primarily located near previously developed areas, resulting in a long-term, local, minor to moderate, and adverse impacts to the affected plant communities and jurisdictional wetlands within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage visitor use and facilities would result in the loss of jurisdictional wetlands, resulting in local, long-term, minor and adverse impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and 2B (West Valley) under Alternative 3 would result in the restoration of approximately 230 acres of vegetation and 45.78 acres of wetland, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of vegetation primarily located near previously developed areas, resulting in long-term, local, minor to moderate, adverse impacts these communities within Segment 2A (East Valley) and Segment 2B (West Valley). Actions to manage visitor use and facilities would result in the loss of jurisdictional wetlands, resulting in local, long-term, minor and adverse impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and 2B (West Valley) under Alternative 4 would result in the restoration of 195.74 acres of vegetation and 43.65 acres of wetland, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of vegetation primarily located near previously developed areas, resulting in long-term, local, minor to moderate, adverse impacts to these communities and jurisdictional wetlands within Segment 2A (East Valley) and 2B (West Valley). Actions to manage visitor use and facilities would result in the permanent loss of jurisdictional wetlands, resulting in local, long-term, minor and adverse impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and 2B (West Valley) under Alternative 5 would result in the restoration of 173.46 acres of vegetation and 37.75 acres of wetland, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of vegetation primarily located near previously developed areas, resulting in long-term, local, minor to moderate, adverse impacts to these communities within Segment 2A (East Valley) and 2B (West Valley). Actions to manage visitor use and facilities would result in the permanent loss of jurisdictional wetlands, resulting in local, long-term, minor and adverse impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and 2B (West Valley) under Alternative 6 would result in the restoration of 160.58 acres of vegetation and 37.6 acres of wetland, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of vegetation primarily located near previously developed areas, resulting in long-term, local, minor to moderate, adverse impacts to these communities within Segment 2A (East Valley) and 2B (West Valley). Actions to manage visitor use and facilities would result in the loss of jurisdictional wetlands, resulting in local, long-term, minor and adverse impacts.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 **No Action**	**Alternative 2** **Self-Reliant Visitor Experiences and Extensive Floodplain Restoration**	**Alternative 3** **Dispersed Visitor Experiences and Extensive Riverbank Restoration**	**Alternative 4** **Resource-Based Visitor Experiences and Targeted Riverbank Restoration**	**Alternative 5** **Enhanced Visitor Experience and Essential River Bank Restoration**	**Alternative 6** **Diversified Visitor Experiences and Selective Riverbank Restoration**
3. Vegetation and Wetlands (cont.)					
Segment 3 & 4 The impacts on valley oaks in Segment 4 (the El Portal area) are considered local, long-term, and moderate adverse. Impacts on wetlands and aquatic resources in Segments 3 and 4 under the No-action Alternative are considered to be local, long-term, and minor adverse.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 2 would result in the restoration of 13 acres of vegetation and 0.23 acres of wetland, resulting in long-term, local, moderate, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to vegetation and wetlands.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 would result in the restoration of 13 acres of vegetation and 0.23 acres of wetland, resulting in long-term, local, moderate, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to vegetation and wetlands.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 would result in the restoration of 11.09 acres of vegetation and 0.23 acres of wetland, resulting in long-term, local, moderate, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to vegetation and wetlands.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 would result in the restoration of 11.09 acres of vegetation and 0.23 acres of wetland, resulting in long-term, local, moderate, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to vegetation and wetlands.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 would result in the restoration of 11.09 acres of vegetation and 0.23 acres of wetland, resulting in long-term, local, moderate, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to vegetation and wetlands.
Segment 5, & 8 Impacts on vegetation and wetland resources in Segments 5 and 8, under the No-action Alternative, are considered to be local, long-term, and negligible adverse. Segment 6 & 7 Impacts on wetland and riparian resources in Segment 7, under the No-action Alternative, would be local, long-term, and moderate adverse. Impacts to habitat due to visitor use and existing infrastructure would result in local, long-term, minor, and adverse.	Segment 5, 6, 7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 2 would result in the restoration of 52 acres of vegetation, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to vegetation and wetlands.	Segment 5,6, 7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 3 would result in the restoration of 48 acres of vegetation, resulting in long-term, segmentwide, major, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to vegetation and wetlands.	Segment 5, 6, 7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 4 would result in the restoration of 3.67 acres of vegetation, resulting in long-term, segmentwide, minor, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to vegetation and wetlands.	Segment 5, 6, 7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 5 would result in the restoration of 1.89 acres of vegetation, resulting in long-term, segmentwide, minor, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to vegetation and wetlands.	Segment 5, 6, 7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 6 would result in the restoration of 1.89 acres of vegetation, resulting in long-term, segmentwide, minor, beneficial impacts on vegetation and wetlands. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to vegetation and wetlands.
Cumulative Past, present, and future effects, in conjunction with the local, long-term, minor, adverse impacts of Alternative 1, would result in long-term, minor, adverse, impacts on wetlands.	Cumulative While Alternative 2 would not contribute toward adverse cumulative effects, the cumulative trend of other actions would result in long-term, minor adverse effects on regional vegetation patterns.	Cumulative While Alternative 3 would not contribute toward adverse cumulative effects, the cumulative trend of other actions would result in long-term, minor, adverse effects on regional vegetation patterns	Cumulative While Alternative 4 would not contribute toward adverse cumulative effects, the cumulative trend of other actions would result in long-term, minor, adverse effects on regional vegetation patterns.	Cumulative While Alternative 5 would not contribute toward adverse cumulative effects, the cumulative trend of other actions would result in long-term, minor, adverse effects on regional vegetation patterns.	Cumulative While Alternative 6 would not contribute toward adverse cumulative effects, the cumulative trend of other actions would result in long-term, minor, adverse effects on regional vegetation patterns
4. Wildlife					
Segment 1 Overall, wildlife habitat in the Yosemite Wilderness would remain undisturbed under Alternative 1, with site-specific exceptions associated with trail corridors. Impacts would be local, minor, and long term adverse. Continuation of current wilderness policies, including protection of natural processes, visitor education with an emphasis on Leave-No-Trace practices, use of the wilderness trailhead quota system, and restrictions on amounts and locations of overnight use, would protect intact natural habitats, including the distribution, numbers, population composition, and interaction of native species. In general, adverse impacts on wildlife resources in Segment 1 under Alternative 1 would be local, minor, and long term.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* The removal of pack stock grazing at Merced Lake East Meadow would have long-term, local, minor beneficial impacts to fish and wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The reduction in overnight facilities and overnight visitors represents a reduction in human presence, human-related pressures on wildlife, and reduced future impacts on wildlife habitat in localized areas of Segment 1. Collectively, actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts on wildlife.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* Adaptive management of grazing in Merced Lake East Meadow would result in long-term, local, minor beneficial impacts to fish and wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Alternative 3 would reduce the amount of infrastructure and visitor use in Segment 1, resulting in a local, long-term, minor, beneficial impact on wildlife.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* The removal of the Merced Lake High Sierra Camp would have long-term, local, minor beneficial impacts to fish and wildlife *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Alternative 4 would reduce the amount of infrastructure in Segment 1 of the Merced River corridor through the removal of the Merced Lake High Sierra Camp and associated infrastructure. Collectively, actions to manage visitor use and facilities under Alternative 4 would result in local, long-term, minor, beneficial impacts on wildlife in Segment 1.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* Adaptive management of grazing in Merced Lake East Meadow would result in long-term, local, minor beneficial impacts to fish and wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Alternative 5 would accommodate the same kinds and amounts of use that exist today in Segment 1, with a slight reduction in overnight visitors. Collectively, actions to manage visitor use and facilities would result in local, long-term, negligible, beneficial impacts on wildlife. The removal and conversion of existing improvements would result in local, short-term, adverse impacts on wildlife. Adhering to proposed mitigation measures in Appendix C would reduce these short-term impacts to minor and adverse.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* Adaptive management of grazing in Merced Lake East Meadow would result in long-term, local, minor beneficial impacts to fish and wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Collectively, actions to maintain similar kinds and levels of use as current levels would result in impacts similar to that described for Alternative 1 (No Action): continued local, long-term, minor, adverse impacts on wildlife in Segment 1.

Segment 1 – Above Nevada Falls
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Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
4. Wildlife (cont.)					
Segments 2A and 2B Continuation of current practices would result in long-term, minor, adverse impacts on aquatic and terrestrial wildlife associated with riverine habitat (including meadows and riparian habitat adjacent to the river) within Segment 2A (East Valley) and 2B (West Valley). Streambank destabilization in the vicinity of wood removal would continue, causing a local, long-term, minor, adverse impact on aquatic habitat for fisheries and wildlife. By allowing the former Upper River and Lower River Campgrounds to passively revert to natural conditions, Alternative 1 would result in long-term, local, minor, beneficial impact on wildlife within the Segment 2A (East Valley). Continued conifer encroachment would result in local, long term, minor, and adverse impacts within Segment 2A (East Valley) and Segment 2B (West Valley). Existing improvements and visitor use would continue to affect the size, structure, productivity, and continuity (within habitat and between habitats) of wildlife habitats. Overall, adverse impacts on wildlife resources would be segmentwide, moderate, and long term within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 2 would result in the restoration of approximately 271 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of wildlife habitat primarily located near previously developed areas, resulting in a long-term, local, minor, adverse impact to wildlife within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 2 would result in the restoration of 230 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of wildlife habitats primarily located near previously developed areas, resulting in long-term, local, minor, adverse impacts wildlife within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and 2B (West Valley) under Alternative 4 would result in the restoration of 195.74 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of wildlife habitats, resulting in long-term, local, minor, adverse impacts to wildlife within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 5 would result in the restoration of 173.46 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of wildlife habitats, resulting in long-term, local, minor, adverse impacts to wildlife within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 6 would result in the restoration of 160.58 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in the loss of wildlife habitats and additional use over existing conditions, resulting in long-term, segmentwide, minor, adverse impacts to wildlife within Segment 2A (East Valley) and Segment 2B (West Valley).
Segment 3 & 4 Current conditions would continue to result in long-term, local, minor, adverse impacts on channel free-flow, water quality, riparian habitat development, and aquatic and terrestrial wildlife that inhabit these habitats. Current practices would result in long-term, local, minor, adverse impacts on valley oak habitat, thereby affecting wildlife species that depend on this habitat type. Visitor pass-through use would continue to be the majority of use. Impacts from current actions to manage visitor use and facilities would result in continued long-term, local, minor adverse impacts on wildlife habitat and wildlife species in these segments.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 2 would result in the restoration of 13 acres of wildlife habitats, resulting in long-term, local, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to wildlife.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 3 would result in the restoration of 13 acres of wildlife habitats, resulting in long-term, local, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to wildlife.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 4 would result in the restoration of 11.09 acres of wildlife habitats, resulting in long-term, local, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to wildlife.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 5 would result in the restoration of 11.09 acres of wildlife habitats, resulting in long-term, local, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to wildlife.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 3 and 4 under Alternative 6 would result in the restoration of 11.09 acres of wildlife habitats, resulting in long-term, local, moderate, beneficial impacts on wildlife. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in short-term, local, minor, adverse impacts to wildlife.
Segment 5,6,7, & 8 Continuation of current wilderness policies, including protection of natural processes, visitor education with an emphasis on Leave-No-Trace practices, and restrictions on amounts and locations of overnight use, would protect intact natural habitats, including the distribution, numbers, population composition, and interaction of native species. Overall, adverse impacts on	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 2 would result in the restoration of 52 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 3 would result in the restoration of 48 acres of wildlife habitats, resulting in long-term, segmentwide, moderate, beneficial impacts on wildlife.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 4 would result in the restoration of 3.67 acres of wildlife habitats, resulting in long-term, segmentwide, minor, beneficial impacts on wildlife.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 5 would result in the restoration of 1.89 acres of wildlife habitats, resulting in long-term, segmentwide, minor, beneficial impacts on wildlife.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segments 5, 6, 7 and 8 under Alternative 6 would result in the restoration of 1.89 acres of wildlife habitats, resulting in long-term, segmentwide, minor, beneficial impacts on wildlife.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 **No Action**	**Alternative 2** **Self-Reliant Visitor Experiences and Extensive Floodplain Restoration**	**Alternative 3** **Dispersed Visitor Experiences and Extensive Riverbank Restoration**	**Alternative 4** **Resource-Based Visitor Experiences and Targeted Riverbank Restoration**	**Alternative 5** **Enhanced Visitor Experience and Essential River Bank Restoration**	**Alternative 6** **Diversified Visitor Experiences and Selective Riverbank Restoration**
4. Wildlife (cont.)					
Segment 5,6,7, & 8 (cont.) Wildlife resources are local, long-term, and negligible. There is less pressure by anglers on the South Fork Merced River fisheries than on the main stem because of the difficult access and terrain. There would therefore be short-term, local, negligible, adverse impacts on fisheries under Alternative 1. Visitor use in Segments 5 and 6 would remain very low. There are no overnight lodging accommodations in Segment 8. For the coniferous and deciduous forests adjacent to Wawona (Segment 7), habitat fragmentation caused by existing development and use would continue to affect wildlife, and would result in long-term, minor, adverse impacts on wildlife. Planned habitat restoration would mitigate for some of these adverse impacts, resulting in long-term, negligible, adverse impacts on wildlife.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to wildlife.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to wildlife.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to wildlife.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to wildlife.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage visitor use and facilities would result in long-term, local, minor, beneficial impacts to wildlife.
Cumulative Although general effects associated with Alternative 1 would be negligible, the overall cumulative effect of other past, present, and reasonably foreseeable actions, in combination with this alternative would be regional, moderate, adverse, and long term.	Cumulative Because the actions proposed for Alternative 2 would further increase the habitat value of the Merced River corridor, it would contribute towards a long-term, cumulative, beneficial impact on fish and wildlife and may, in some cases, reverse local population declines for some species. Songbirds, reptiles, and amphibians in particular would benefit cumulatively from Alternative 2 because the quantity of preferred habitat (meadows and riparian) would see a net increase.	Cumulative Because the actions proposed for Alternative 3 would further increase the habitat value of the Merced River corridor, this alternative would contribute toward a long-term, cumulative, beneficial impact on fish and wildlife and may, in some cases, offset or reverse local population declines for some species. Songbirds, reptiles, and amphibians in particular would benefit cumulatively from Alternative 3 because there would be a net increase in quantity of preferred habitat (meadows and riparian) compared to existing amounts.	Cumulative While Alternative 4 would cumulatively contribute beneficial impacts, the overall cumulative impact of other past, present, and reasonably foreseeable actions, in combination with this alternative would be long term, minor, and beneficial.	Cumulative Although general effects associated with Alternative 5 would be beneficial, the overall cumulative impact of other past, present, and reasonably foreseeable actions, in combination with this alternative, would be long term and negligible.	Cumulative While the cumulative contribution associated with Alternative 6 would be minor and adverse, the overall cumulative impact of other past, present, and reasonably foreseeable actions, in combination with this alternative, would also be long term, minor, and adverse.
5. Special-Status Species					
Segment 1 Currently, special-status species or their habitats are affected by trampling, human disturbance, grazing and stock use. Impacts from habitat loss and competition for resources also affect these species through nonnative species encroachment. These adverse impacts would continue under Alternative 1 and be local, minor, and long-term.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* In the long-term, restoration actions would have a local, long-term, minor, beneficial impact on special-status wildlife and plant species in the upper Merced watershed.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* In the long-term, restoration actions would have a local, long-term, minor, beneficial impact on special-status wildlife and plant species in the upper Merced watershed. Beneficial impacts would be somewhat less than those described for Alternative 2.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Management actions would have a local, long-term, minor, beneficial impact on special-status plant and wildlife species that use coniferous forests in the upper Merced River watershed.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* In the long-term, programmatic management actions would have a local, long-term, minor, beneficial impact on special-status wildlife species that use coniferous forests in the upper Merced watershed. Beneficial effects would be less pronounced than Alternatives 2 and 3.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Alternative 6 would maintain the current level of use within Segment 1. Collectively, actions to maintain similar kinds and levels of use as current levels would result in continued local, long-term, minor, adverse impacts on special-status species within Segment 1.
Segments 2A and 2B In general, when combined with existing habitat management programs, the ongoing adverse effects on habitat combined with continued visitor use and the foreseeable increase in visitors under Alternative 1 would result in local, long-term, minor, adverse effects on rare, threatened, and endangered species within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* A total of 271 acres of riparian, floodplain meadow, woodland, and forest habitat would be restored in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 2, resulting in direct benefits to fish and wildlife that use these habitat types. Thus, over time these management actions would have long-term, moderate, beneficial impacts on species of special-status plants and wildlife that use the Merced River and adjacent meadows and riparian habitats in Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* A total of 230 acres of riparian, floodplain, meadow, woodland, and forest habitat would be restored in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 3, resulting in direct benefits to fish and wildlife that use these habitat types. Thus, over time these management actions would have long-term, moderate, beneficial impacts on species of special-status plants and wildlife that use the Merced River and adjacent meadows and riparian habitats in Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* A total of 195.74 acres of floodplain, riparian, meadow, woodland, and forest habitat would be restored in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 4, resulting in direct benefits to fish and wildlife that use these habitat types. Thus, over time these management actions would have long-term, moderate, beneficial impacts on species of special-status plants and wildlife that use the Merced River and adjacent meadows and riparian habitats in Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* A total of 173.46 acres of floodplain, riparian, meadow, woodland, and forest habitat would be restored in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 5, resulting in direct benefits to fish and wildlife that use these habitat types. Thus, over time these habitat restoration management actions would have long-term, moderate, beneficial impacts on species of special-status plants and wildlife that use the Merced River and adjacent meadows and riparian habitats in Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* A total of 160.58 acres of floodplain, riparian, meadow, woodland, and forest habitat would be restored in Segment 2A (East Valley) and Segment 2B (West Valley) under Alternative 6, resulting in direct benefits to fish and wildlife that use these habitat types. Over time, these management actions would have long-term, moderate, beneficial impacts on special-status plants and wildlife species that use the Merced River and adjacent meadows and riparian habitats in Segment 2A (East Valley) and Segment 2B (West Valley).

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
5. Special-Status Species (cont.)					
Segments 2A and 2B (cont.)	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Vegetation removed under Alternative 2 would not substantially fragment existing native vegetation communities, reduce species diversity, or substantially reduce the overall size or quality of native plant communities in Segment 2A (East Valley) and Segment 2B (West Valley) because new construction would primarily occur in or adjacent to previously disturbed locations or in more resilient, upland habitat. Overall, these actions would result in local, long-term, minor, beneficial impacts on special-status plant and animals in Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Vegetation removed under Alternative 2 would not substantially fragment existing native vegetation communities, reduce species diversity, or substantially reduce the overall size or quality of native plant communities in Segment 2 because new construction would primarily occur in or adjacent to previously disturbed locations or in more resilient, upland habitat. Overall, these actions would result in local, long-term, minor, beneficial impacts on special-status plant and animals in Segment 2A (East Valley) and Segment 2B (West Valley), although somewhat less so than Alternative 2.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Restoring habitat following the removal of facilities and parking lots would increase the extent and contiguity of habitat for special-status species; limiting day use activities and roadside parking would reduce impacts to sensitive habitats such as riparian woodland and wet meadows. These actions would result in local, long-term, minor, beneficial impacts on special-status plant and animals in Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maintaining and constructing new overnight camping and lodging facilities would maintain dense levels of the built environment within the Valley, resulting in long-term, minor, adverse impacts on wildlife in Segment 2A (East Valley) and Segment 2B (West Valley) from human presence and human-related pressures (noise, human food, vegetation trampling, etc.).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Constructing new overnight camping and lodging facilities would maintain and intensify dense levels of the built environment within Segment 2A (East Valley) and Segment 2B (West Valley), resulting in segmentwide, long-term, minor, beneficial impacts on wildlife from human presence and human-related pressures (such as noise, human food, and vegetation trampling).
Segments 3 & 4 Adverse impacts on special-status species in Segments 3 and 4 associated with Alternative 1 would continue and be local, long term, and minor. Special-status wildlife species that may be affected by the continuation of these actions over the long term include valley elderberry longhorn beetle, hardhead, golden eagle, long-eared owl, yellow warbler, bald eagle, harlequin duck, pallid bat, and Townsend's big-eared bat.	Segments 3 & 4 Restoration and facilities/visitor management actions in Segments 3 and 4 under Alternative 2 would result in local, long-term, minor, beneficial impacts on most special-status species. Actions in Segments 3 and 4 under Alternative 2 would have no effect on the following federally listed and candidate species: Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Pacific fisher, Sierra Nevada bighorn sheep, and whitebark pine. It is the determination of the NPS that the actions proposed in Segment 4 under Alternative 2 may affect, and are likely to adversely affect, the valley elderberry longhorn beetle.	Segments 3 & 4 Restoration and facilities/visitor management actions in Segments 3 and 4 under Alternative 3 would result in local, long-term, minor, beneficial impacts on most special-status species. Actions in Segments 3 and 4 under Alternative 3 would have no effect on the following federally listed and candidate species: Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Pacific fisher, Sierra Nevada bighorn sheep, and whitebark pine. It is the determination of the NPS that the actions proposed in Segment 4under Alternative 3 may affect, and are likely to adversely affect, the valley elderberry longhorn beetle.	Segments 3 & 4 Restoration and facilities/visitor management actions in Segments 3 and 4 under Alternative 4 would result in local, long-term, minor, beneficial impacts on most special-status species. Actions in Segments 3 and 4 under Alternative 4 would have no effect on the following federally listed and candidate species: Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Pacific fisher, Sierra Nevada bighorn sheep, and whitebark pine. It is the determination of the NPS that the actions proposed in Segment 4under Alternative 4 may affect, and are likely to adversely affect, the valley elderberry longhorn beetle.	Segments 3 & 4 Restoration and facilities/visitor management actions in Segments 3 and 4 under Alternative 5 would result in local, long-term, minor, beneficial impacts on most special-status species. Actions in Segments 3 and 4 under Alternative 5 would have no effect on the following federally listed and candidate species: Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Pacific fisher, Sierra Nevada bighorn sheep, and whitebark pine. It is the determination of the NPS that the actions proposed in Segment 4 under Alternative 5 may affect, and are likely to adversely affect, the valley elderberry longhorn beetle.	Segments 3 & 4 Restoration and facilities/visitor management actions in Segments 3 and 4 under Alternative 6 would result in local, long-term, minor, beneficial impacts on most special-status species. Actions in Segments 3 and 4 under Alternative 6 would have no effect on the following federally listed and candidate species: Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Pacific fisher, Sierra Nevada bighorn sheep, and whitebark pine. It is the determination of the NPS that the actions proposed in Segment 4under Alternative 6 may affect, and are likely to adversely affect, the valley elderberry longhorn beetle.
Segments 5 – 8 Adverse impacts on special-status species in Segments 5– 8 associated with Alternative 1 (No Action) would continue and be local, long term, and minor. Special-status wildlife species that may be affected by these actions over the long term include Yosemite toad, Mount Lyell salamander, Sierra Nevada yellow-legged frog, northern goshawk, golden eagle, long-eared owl, Vaux's swift, northern harrier, olive-sided flycatcher, yellow warbler, willow flycatcher, bald eagle, harlequin duck, great gray owl, California spotted owl, pallid bat, Sierra Nevada mountain beaver, Townsend's big-eared bat, spotted bat, western mastiff bat, Sierra Nevada showshoe hare, western white-tailed jackrabbit, Pacific fisher, Sierra Nevada red fox, and American badger.	Segments 5 – 8 Restoration and facilities/visitor management actions in Segments 5-8 under Alternative 2 would result in segmentwide, long-term, minor to moderate, beneficial impacts on special-status species. Actions in Segments 5-8 under Alternative 2 would have no effect on the following federally listed and candidate species: valley elderberry longhorn beetle, Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Sierra Nevada bighorn sheep, and whitebark pine. Actions in Segments 5-8 under Alternative 2 may affect, but would not be likely to adversely affect, the following federally listed and candidate species: Pacific fisher.	Segments 5 – 8 Restoration and facilities/visitor management actions in Segments 5-8 under Alternative 3 would result in segmentwide, long-term, minor to moderate, beneficial impacts on special-status species. Actions in Segments 5-8 under Alternative 3 would have no effect on the following federally listed and candidate species: valley elderberry longhorn beetle, Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Sierra Nevada bighorn sheep, and whitebark pine. Actions in Segments 5-8 under Alternative 3 may affect, but would not be likely to adversely affect, the following federally listed and candidate species: Pacific fisher.	Segments 5 – 8 Restoration and facilities/visitor management actions in Segments 5-8 under Alternative 4 would result in segmentwide, long-term, minor to moderate, beneficial impacts on special-status species. Actions in Segments 5-8 under Alternative 4 would have no effect on the following federally listed and candidate species: valley elderberry longhorn beetle, Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Sierra Nevada bighorn sheep, and whitebark pine. Actions in Segments 5-8 under Alternative 4 may affect, but would not be likely to adversely affect, the following federally listed and candidate species: Pacific fisher.	Segments 5 – 8 Restoration and facilities/visitor management actions in Segments 5-8 under Alternative 5 would result in segmentwide, long-term, minor to moderate, beneficial impacts on special-status species. Actions in Segments 5-8 under Alternative 5 would have no effect on the following federally listed and candidate species: valley elderberry longhorn beetle, Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Sierra Nevada bighorn sheep, and whitebark pine. Actions in Segments 5-8 under Alternative 5 may affect, but would not be likely to adversely affect, the following federally listed and candidate species: Pacific fisher.	Segments 5 – 8 Restoration and facilities/visitor management actions in Segments 5-8 under Alternative 6 would result in local, long-term, minor to moderate, beneficial impacts on special-status species. Actions in Segments 5-8 under Alternative 6 would have no effect on the following federally listed and candidate species: valley elderberry longhorn beetle, Yosemite toad, Sierra Nevada yellow-legged frog, California wolverine, Sierra Nevada bighorn sheep, and whitebark pine. Actions in Segments 5-8 under Alternative 6 may affect, but would not be likely to adversely affect, the following federally listed and candidate species: Pacific fisher.

Segment 1 – Above Nevada Falls
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Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
5. Special-Status Species (cont.)					
Cumulative Cumulatively considerable restoration projects would have a long-term, beneficial cumulative effect on rare, threatened, and endangered species within the Merced River corridor and beyond. Cumulatively considerable projects related to development and growth, including climate change, would have long-term, moderate to major (depending on species-specific impacts), adverse cumulative on these species regionally. While these affects would be lessened by restoration projects, they would not fully compensate the adverse effects discussed above. These cumulative actions in combination with Alternative 1 (No Action) would therefore have a net long-term, minor, adverse effect on regional rare, threatened, and endangered species.	Cumulative Alternative 2 actions would have long-term, beneficial effects on special-status species in the Merced River corridor. However, in relation to past, present, and reasonably foreseeable future actions throughout the Sierra Nevada and larger region, (e.g., introduction and spread of nonnative species, direct displacement of habitat) the actions under Alternative 2 would have a minimal beneficial effect. Overall, in conjunction with actions proposed in Alternative 2, cumulative actions on special-status species would result in long-term, adverse effects on special-status species.	Cumulative Alternative 3 actions would have long-term, beneficial effects on special-status species in the Merced River corridor. However, in relation to past, present, and reasonably foreseeable future actions throughout the Sierra Nevada and larger region, (e.g., introduction and spread of nonnative species, direct displacement of habitat) the actions under Alternative 3 would have a minimal beneficial effect. Overall, in conjunction with actions proposed in Alternative 3, cumulative actions on special-status species would result in long-term, adverse effects on special-status species.	Cumulative Alternative 4 actions would have long-term, beneficial effects on special-status species in the Merced River corridor. However, in relation to past, present, and reasonably foreseeable future actions throughout the Sierra Nevada and larger region, (e.g., introduction and spread of nonnative species, direct displacement of habitat) the actions under Alternative 4 would have a minimal beneficial effect. Overall, in conjunction with actions proposed in Alternative 4, cumulative actions on special-status species would result in long-term, adverse effects on special-status species.	Cumulative Alternative 5 actions would have long-term, beneficial effects on special-status species in the Merced River corridor. However, in relation to past, present, and reasonably foreseeable future actions throughout the Sierra Nevada and larger region, (e.g., introduction and spread of nonnative species, direct displacement of habitat) the actions under Alternative 5 would have a minimal beneficial effect. Overall, in conjunction with actions proposed in Alternative 5, cumulative actions on special-status species would result in long-term, adverse effects on special-status species.	Cumulative Alternative 6 actions would have long-term, beneficial effects on special-status species in the Merced River corridor. However, in relation to past, present, and reasonably foreseeable future actions throughout the Sierra Nevada and larger region, (e.g., introduction and spread of nonnative species, direct displacement of habitat) the actions under Alternative 6 would have a minimal beneficial effect. Overall, in conjunction with actions proposed in Alternative 6, cumulative actions on special-status species would result in long-term, adverse effects on special-status species.
6. Lightscapes					
Segment 1, 5 & 8 There are no actions proposed under Alternative 1 that would explicitly affect lighting, and impacts would be local, negligible to minor, and adverse.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Reduced visitation and modifications to existing campgrounds would reduce nighttime lighting, and removal of the Merced Lake High Sierra Camp would eliminate sources of nighttime lighting in the vicinity of the camp. The associated impact on Segment 1 would be local, long-term, minor, and beneficial.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Reduced visitation and modifications to existing campgrounds would reduce nighttime lighting, and removal of the Merced Lake High Sierra Camp would eliminate sources of nighttime lighting in the vicinity of the camp. The associated impact on Segment 1 would be local, long-term, minor, and beneficial.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Reduced visitation could improve the lightscape environment within Segment 1. With a slight reduction in designated camping only and retention of several campground facilities, sources of artificial lighting would remain concentrated within these areas. However, the removal and conversion of the Merced Lake High Sierra Camp would eliminate nighttime lighting in the vicinity of the camp. The resulting impact on the park's lightscape environment would be local, long-term, minor, and beneficial.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation, wilderness access quotas, and designated camping would not be expected to change, while modifications to overnight accommodations would be nominal within Segment 1. As such, potential sources of artificial night lighting would continue. Reduction in units at the Merced Lake High Sierra Camp would reduce slightly the amount of artificial lighting in the vicinity of the camp. The resulting long-term impact would be local, negligible, and beneficial.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation and wilderness access quotas would remain the same, as well as operation of the Merced Lake High Sierra Camp at capacity, and modifications to overnight accommodations would be nominal. As such, potential sources of artificial night lighting would continue. The resulting impact on the environment would be local, long-term, negligible to minor, and adverse.
Segment 3 & 6 Increased visitation could result in a relatively minor increase in transient night lighting from greater numbers of cars traveling through Segment 3, or from exterior safety lighting in Wawona, adjacent to Segment 6. As a result, impacts are considered to have a local, long-term, negligible, adverse effect.	Segment 3 & 6 No impact.	Segment 3, 5, 6 & 8 No impact.	Segment 3, 5, 6 & 8 No impact.	Segment 3 & 6 No impact.	Segment 3, 5, 6 & 8 No impact.
Segments 2A and 2B, 4 & 7 Lighting would continue to be most intense around those existing developed areas, but no new substantial sources of night lighting are anticipated. However, with increased visitation, potential sources of additional lighting could include those associated with increased nighttime traffic and greater numbers of overnight campground visitors during nonpeak seasons. Long-term implications would be local, negligible to minor, and adverse within Segment 2A (East Valley) and Segment 2B (West Valley), 4, and 7.	Segments 2A and 2B, 4 & 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* A substantial number of lodging and residential units and campsites would be removed or relocated within Segment 2A (East Valley). These actions would increase sources of nighttime lighting in some areas, but decrease lightscape impacts overall. The resulting impact on lightscapes within Segment 2A (East Valley) and 7 would be local, long-term, beneficial, and ranging from negligible to moderate. These actions would not be expected to have an appreciable effect on lightscapes within Segment 2B (West Valley).	Segments 2A and 2B, 4 & 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* A substantial number of lodging and residential units would be removed or relocated, and number of campsites slightly increased within Segment 2A (East Valley). These actions would increase sources of nighttime lighting in some areas, but decrease lightscape impacts overall. The resulting impact on lightscapes within Segments 2A (East Valley), 4, and 7 would be local, long-term, beneficial, and minor to moderate. These actions would not have an appreciable effect on lightscapes within Segment 2B (West Valley).	Segments 2A and 2B, 4 & 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* A considerable number of lodging and residential units would be removed or relocated, and number of campsites substantially increased within Segment 2A (East Valley). These actions would increase sources of nighttime lighting in some areas, but decrease lightscape impacts overall. The resulting impact on lightscapes within Segments 2A (East Valley) would be local, long-term, beneficial, and negligible to minor. These actions would not be expected to have an effect on lightscapes within Segment 2B (West Valley).	Segments 2A and 2B, 4 & 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* A considerable number of residential units would be removed, while lodging and campsite capacities would increase within Segment 2A (East Valley). These actions would increase sources of nighttime lighting in several areas, and decrease lightscape impacts in others. The resulting impact on lightscapes within Segments 2A (East Valley) would be local, long-term, negligible, and adverse. These actions would not be expected to have an appreciable effect on lightscapes within Segment 2B (West Valley).	Segments 2A and 2B, 4 & 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* A considerable number of residential units would be removed, while lodging and campsite capacities would increase substantially within Segment 2A (East Valley) and Segment 2B (West Valley). These actions would increase sources of nighttime lighting throughout the developed areas of the valley. The resulting impact on lightscapes within Segments 2A (East Valley) and Segment 2B (West Valley) would be local, long-term, minor, and adverse.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
6. Lightscapes (cont.)					
Segments 2A and 2B, 4 & 7 (cont.)	The park would construct new employee housing within the Old El Portal, Abbieville and Rancheria areas of Segment 4, contributing to area lightscape impacts. However, with mitigation, the long-term impact associated with the project would be local, moderate, and adverse. Within Segment 7, the Wawona stables would be removed and 32 campsites eliminated which would reduce lightscape impacts, and the long-term effect would be local, negligible, and beneficial.	The park would construct new concessioner employee housing within the Rancheria area and remove housing from the El Portal Village and Abbieville areas of Segment 4, contributing to area lightscape impacts. However, with mitigation, the long-term impact associated with the project would be local, minor, and beneficial. Within Segment 7, the Wawona stables would be removed and 27 campsites eliminated, which would reduce lightscape impacts. The long-term effect would be local, negligible, and beneficial.	The park would construct new concessioner employee housing within the Rancheria, remove housing from El Portal Village and Abbieville, and develop a new 200-vehicle day-use parking area at the Abbieville/Trailer Village of Segment 4, contributing to area lightscape impacts. However, with mitigation, the long-term impact associated with the project would be local, minor, and adverse. Within Segment 7, the Wawona stables would be removed and 27 campsites eliminated, which would reduce lightscape impacts. The long-term effect would be local, negligible, and beneficial.	The park would construct new concessioner employee housing within the Rancheria and El Portal Village, remove housing from Abbieville, and develop a new 300-vehicle day-use parking and RV campsite area at the Abbieville/Trailer Village area of Segment 4, contributing to area lightscape impacts. However, with mitigation, the long-term impact associated with the project would be local, minor to moderate, and adverse. Within Segment 7, the park would remove 13 campsites from the Wawona Campground, reducing overnight visitation and lightscape impacts. The effect would be long-term, local, negligible, and beneficial.	The park would construct new concessioner employee housing within the Abbieville, El Portal, and Rancheria, and develop new employee housing and a new 200-vehicle day-use parking area in the Abbieville/Trailer Village within areas of Segment 4, contributing to area lightscape impacts. However, with mitigation, the long-term impact associated with the project would be local, moderate, and adverse. Within Segment 7, the Wawona stables would be removed and 13 campsites eliminated from the Wawona Campground, reducing overnight visitation and lightscape impacts. The effect would be long-term, local, negligible, and beneficial.
Cumulative A long-term, park-wide, negligible to minor, adverse	Cumulative Past actions, specifically the construction of housing for employees previously residing in hazard prone areas within Yosemite Valley, have slightly increased the amount of artificial lighting within the park. Present actions may result in regional increases in night-sky impacts, and the introduction of a few new individual sources of lighting within the park, but a continued overall reduction in the impacts associated with in-park lighting. As a result, cumulative effects would be local, long-term, minor to moderate, and beneficial.	Cumulative There are no anticipated development projects outside of those described that would contribute to light pollution within the park. Combined impacts of past and present actions, including those originating from outside the park, the cumulative effect of actions would be local, long-term, minor to moderate, and beneficial.	Cumulative There are no anticipated development projects outside of those described that would contribute to light pollution within the park. Combined impacts of past, present, and reasonably foreseeable actions, including those originating from outside the park, the cumulative long-term effect of actions would be local minor, and beneficial.	Cumulative There are no anticipated development projects outside of those described that would contribute to light pollution within the park. Combined impacts of past, present, and reasonably foreseeable actions, including those originating from outside the park, the cumulative effect of would be local, long-term, negligible, and adverse.	Cumulative There are no anticipated development projects outside of those described that would contribute to light pollution within the park. Combined impacts of past, present, and reasonably foreseeable actions, including those originating from outside the park, the cumulative effect of would be local, long-term, minor, and adverse.
7. Soundscapes					
Segment 1 Under this alternative a gradual increase in annual visitation over the next five years would occur, and a rise in human-related sounds would contribute to a long-term, negligible to minor, adverse impact on the soundscape environment within Segment 2A (East Valley) and Segment 2B (West Valley).	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions related to visitor use and facilities would require construction efforts which would yield construction noise. Where these operations are near sensitive receivers, and short-term, moderate, adverse impacts on soundscapes would occur. Changes to the trailhead quota system and removal of campsites would reduce long-term noise exposure in these areas, having an overall long-term, negligible to minor, beneficial impact on soundscapes.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions related to visitor use and facilities would require construction efforts which would yield construction noise. Where these operations are near sensitive receivers, and short-term, moderate, adverse impacts on soundscapes would occur. Changes to the trailhead quota system and removal of campsites would reduce long-term noise exposure in these areas, having an overall long-term, negligible to minor, beneficial impact on soundscapes.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* This alternative would require construction efforts that would yield construction noise that is short-term. Where these operations are near sensitive receivers, they would be expected to have short-term, moderate, adverse impacts. Changes to the trailhead quota system and removal of the Merced Lake High Sierra Camp would reduce noise exposure having an overall long-term, negligible to minor, beneficial impact on the soundscape environment.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Removal of certain facilities and infrastructure would yield short-term construction noise. Where these operations are near sensitive receivers, they would be expected to have short-term, moderate, adverse impacts. Reductions in the number of Merced Lake High Sierra Camp overnight visitors would reduce noise exposure having an overall long-term, negligible, beneficial impact.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Removal and replacement of certain facilities and infrastructure would yield short-term construction noise. Where these operations are near sensitive receivers, they would be expected to have short-term, minor to moderate, adverse impacts on soundscapes in the vicinity.
Segments 2A and 2B Crowding and congestion would contribute to an increase of unnatural sounds. The continuation of present visitation trends would, therefore, contribute to a long-term, negligible to minor, adverse impact on the soundscape.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Impacts on the natural soundscape environment within areas where removal of buildings, rerouting and revegetating the Valley Loop Trail, and restorative actions would be short-term, minor to moderate, and adverse, primarily within Segment 2A (East Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Impacts on the natural soundscape environment within areas where removal of buildings, rerouting and revegetating the Valley Loop Trail, and restorative actions would be short-term, minor to moderate, and adverse primarily within Segment 2A (East Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Noise from demolition/construction work related to restoration activities would have short-term, minor, adverse impacts, primarily within Segment 2A (East Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Projects involve rerouting, revegetating, and constructing a boardwalk along a portion of the Valley Loop Trail, as well as other restoration activities and removal of a bridge, would result in a short-term, minor to moderate, adverse impact, primarily within Segment 2A (East Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Projects proposed involve removing buildings, restoration activities, as well as rerouting, revegetating, and constructing a boardwalk along a portion of the Valley Loop Trail. The resulting impacts would be short-term, minor to moderate, and adverse to the soundscapes, primarily within Segment 2A (East Valley).

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
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Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
7. Soundscapes (cont.)					
Segments 2A and 2B (cont.)	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Construction noise and associated traffic would have a short-term, moderate, adverse impact, primarily within Segment 2A (East Valley). The reduction in lodging, campsites, and overall visitation would combine to reduce noise within these areas of Yosemite Valley, resulting in a long-term, minor to moderate, beneficial impact on the soundscape environment across Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New camping and parking facilities would result in construction noise that have a short-term, moderate, adverse impact. In the long-term, minor impacts to soundscapes while the removal of lodging, campsites and parking would result in long-term, minor to moderate, beneficial impacts within Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New camping and parking facilities would result in construction noise that have a short-term, moderate, adverse impact. In the long-term, minor impacts to soundscapes while the overall decrease in lodging and residential units, along with total visitation, would result in long-term, minor, beneficial impacts within Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Removal of residential units, construction of new campgrounds and lodging, and parking improvements would have a short-term, moderate, adverse impact. New camping, lodging, and parking facilities would result in long-term, minor, adverse impacts to soundscapes. Overall, reduced visitation and employee housing within the valley would contribute to long-term, negligible to minor, beneficial impacts on the soundscape environment across Segment 2A (East Valley) and Segment 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Parking improvements, construction of a roundabout and underpass, new lodging and campsite development at several locations, which would result in short-term, moderate, adverse noise impacts. New camping, lodging, and parking facilities, along with overall increased visitation, would result in long-term, negligible, adverse impacts on the Soundscape environment across Segment 2A (East Valley) and Segment 2B (West Valley).
Segment 3 & 4 Higher noise levels caused by vehicular use near roadways would persist, and the frequency and duration of transitory sound sources would increase with park visitation. The continued trends in visitor-related noise would result in a long-term, negligible to minor, adverse impact.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Proposed actions to protect and restore areas around valley oaks would result in short-term, moderate, adverse impacts on soundscapes in the project vicinity. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Noise from demolition/ construction work would be expected to have a short-term, moderate, adverse impact on noise-sensitive uses in the vicinity. New employee housing would contribute to increased noise associated with housing occupation in Abbieville and Rancheria, and impacts would be long-term, minor, and adverse.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Proposed actions to protect and restore areas around valley oaks would result in short-term, moderate, adverse impacts on soundscapes in the project vicinity. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Noise from demolition/ construction work would be expected to have a short-term, moderate, adverse impact on noise-sensitive uses in the vicinity. The construction of new employee housing would contribute to increased noise associated with housing occupation in Rancheria. The expected impact on soundscapes would be long-term, negligible to minor, and adverse.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Proposed actions to protect and restore areas around valley oaks would result in short-term, moderate, adverse impacts on soundscapes in the project vicinity. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Noise from demolition/ construction work would be expected to have a short-term, moderate, adverse impact on noise-sensitive uses in the vicinity. The construction of new employee housing would contribute to increased noise associated with housing occupation in Rancheria. The expected impact on soundscapes would be long-term, minor, and adverse.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Proposed actions to protect and restore areas around valley oaks would result in short-term, moderate, adverse impacts on soundscapes in the project vicinity. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Noise from demolition/ construction work would be expected to have a short-term, moderate, adverse impact on noise-sensitive uses in the vicinity. The construction of new employee housing would contribute to increased noise associated with housing occupation in Rancheria. The expected impact on soundscapes would be long-term, minor, and adverse.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Proposed actions to protect and restore areas around valley oaks would result in short-term, moderate, adverse impacts on soundscapes in the project vicinity. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Noise from demolition/ construction work would be expected to have a short-term, moderate, adverse impact on noise-sensitive uses in the vicinity. The construction of new employee housing would contribute to increased noise associated with housing occupation in Abbieville and Rancheria. The expected impact on soundscapes would be long-term, minor, and adverse.
Segment 5,6,7, & 8 The increase in visitor-related noise exposure in Segments 5, 6, and 8 is speculative due to continued limited accessibility to these areas. Therefore, it is not known whether visitation to these areas would increase relative to existing conditions. Noise levels caused by visitor crowding and congestion would continue in Segment 7, contributing to a long-term, negligible to minor, adverse impact.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Restoration activities would increase construction-related noise and project vehicles would add to the existing traffic noise production from nearby roadways, resulting in short-term, moderate, adverse impacts. In the long-term the removal of the golf course would result in minor, beneficial impacts as maintenance- and visitor-related sources of noise in this area would be eliminated. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Closure of the concessioner stable, campsite removal and relocation, and restroom improvements at Wawona would result in short-term, moderate, adverse impacts from construction noise. The removal of campsites from culturally sensitive areas would reduce noise exposure in these areas, having an overall long-term, negligible, beneficial impact.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Restoration activities would increase construction-related noise and project vehicles would add to the existing traffic noise production from nearby roadways, resulting in short-term, moderate, adverse impacts. In the long-term the removal of the golf course would result in minor, beneficial impacts as maintenance- and visitor-related sources of noise in this area would be eliminated. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Closure of the concessioner stable, campsite removal and relocation, and restroom improvements at Wawona would result in short-term, moderate, adverse impacts on soundscapes in the vicinity from construction noise. The removal of campsites from culturally sensitive areas would reduce noise exposure in these areas, having an overall long-term, negligible, beneficial impact.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Restoration activities involve heavy equipment which would have a short-term, moderate, adverse impact in the vicinity of the action. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Closure of the concessioner stable, campsite removal and relocation, and restroom improvements at Wawona would result in short-term, moderate, adverse impacts on soundscapes in the vicinity from construction noise. The removal of campsites from culturally sensitive areas would reduce noise exposure in these areas, having an overall long-term, negligible, beneficial impact.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Restoration activities involve heavy equipment which would have a short-term, moderate, adverse impact in the vicinity of the action. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Campsite removal and relocation, and restroom improvements at Wawona, would require construction efforts that would result in short-term, moderate, adverse impacts. The removal of campsites from culturally sensitive areas would reduce noise exposure in these areas, having an overall long-term, negligible, beneficial impact on soundscapes.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Restoration activities involve heavy equipment which would have a short-term, moderate, adverse impact in the vicinity of the action. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The removal of campsites, changes to visitor and administrative facilities, and various visitor access and transportation improvements would result in short-term, moderate, adverse impacts. The removal of campsites from culturally sensitive areas would reduce noise exposure in these areas, having an overall long-term, negligible, beneficial impact on soundscapes

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
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7. Soundscapes (cont.)					
Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts, primarily in non-wilderness areas. Increasing numbers of visitors could result in long-term, negligible to minor impacts.	Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts. The construction of new facilities would contribute to long-term, minor, adverse noise impacts. However, these long-term increases would be offset by long-term, minor to moderate, beneficial impacts from removal of housing and facilities in other areas of the Merced River corridor.	Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts. The construction of new facilities would contribute to long-term, minor, adverse noise impacts. However, these long-term increases would be offset by long-term, minor, beneficial impacts from removal of housing and facilities in other areas of the Merced River corridor.	Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts. The construction of new facilities would contribute to long-term, minor, adverse noise impacts. However, these long-term increases would be offset by long-term, minor, beneficial impacts from removal of housing and facilities in other areas of the Merced River corridor.	Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts. The construction of new facilities would contribute to long-term, minor, adverse noise impacts. However, these long-term increases would be offset by long-term, negligible to minor, beneficial impacts from removal of housing and facilities in other areas of the Merced River corridor.	Cumulative Rehabilitation and restoration activities have and would continue to result in short-term, moderate, adverse impacts. Increased visitation, in combination with new facilities construction and operation would contribute to long-term, minor, adverse noise impacts to soundscapes in the vicinity of these facilities.
8. Air Quality					
Segment 1, 5, 6, & 8 There are no transportation facilities in these segments and none are proposed under this alternative, incidental future increases in traffic would affect these segments by pollutant drift. The overall effect on regional air pollution conditions would be long term, minor, and adverse.	Segment 1, 5, 6, & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and associated campfires would be less than under Alternative 1. With fewer on-road vehicles in the vicinity, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 1, 5, 6, & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and associated campfires would be less than under Alternative 1. With fewer on-road vehicles in the vicinity under Alternative 3, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 1, 5, 6, & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and associated campfires would be less than under Alternative 1. With fewer on-road vehicles in the vicinity under Alternative 4, the overall effect on air pollution conditions would be long term, minor, and beneficial.	Segment 1, 5, 6, & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and associated campfires would be only slightly less than under Alternative 1. With fewer on-road vehicles in the vicinity under Alternative 5, the overall effect on air pollution conditions would be long term, minor, and beneficial.	Segment 1, 5, 6, & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation would not change from that of Alternative 1. With more vehicles on park roads and in the vicinity of wilderness, the overall effect on local, air pollution conditions would be long term, minor, and beneficial.
Segments 2A and 2B There would likely continue to be segmentwide, minor, long-term, adverse air quality impacts associated with traffic congestion and delays that would continue to occur at busy intersections. Future increase in visitors would also increase usage of campfires and vehicle emissions, resulting in greater impacts to air quality within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and total daily use levels would be 26% and 33% less, respectively, than under Alternative 1. With fewer on-road vehicles and potential for campfire smoke, the overall effect on local air pollution conditions would be long term, minor, and beneficial within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and total daily use levels would be 23% and 37% less, respectively, than under Alternative 1. With fewer on-road vehicles, the effect on local air pollution conditions would be long term, minor, and beneficial within Segment 2A and Segment 2B (West Valley). Slightly more campsites would occur under this alternative, resulting in local, long-term, moderate, adverse impact on sensitive receptors within Segment 2A and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation would be 7% greater and total daily use levels would be 19% less than under Alternative 1. With fewer on-road vehicles under this alternative, the overall effect on local air pollution conditions along roadways would be long term, minor, and beneficial within Segment 2A (East Valley) and Segment 2B (West Valley). The expected increase in the usage of campfires would have a potentially local, long-term, moderate, adverse impact on sensitive receivers within Segment 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation would be 16% greater and total daily use levels would be 5% less than under Alternative 1. With fewer on-road vehicles, the overall effect on local air pollution conditions would be long term, minor, and beneficial within Segment 2A (East Valley) and Segment 2B (West Valley). The expected increase in the usage of campfires would have a potentially local, long-term, moderate, adverse impact on sensitive receivers within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Maximum overnight visitation and total daily use levels would be 33% and 6% greater, respectively, than under Alternative 1. With more on-road vehicles, the overall effect on local air pollution conditions along roadways would be long term, minor, and beneficial within Segment 2A (East Valley) and Segment 2B (West Valley). With the expected increase in the usage of campfires, a potentially local, long-term, moderate, adverse impact on sensitive receptors would occur within Segment 2A (East Valley)and Segment 2B (West Valley).
Segment 3 & 4 There are no NPS overnight accommodations, and thus few campfires or other visitor-related evening sources of smoke. With increases to visitation, road dust would be expected to increase associated with traffic congestion, which would result in long-term, local, minor, adverse impacts.	Segment 3 & 4 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* There are no NPS overnight accommodations and thus few campfires or other visitor-related evening sources of smoke. Total daily use levels would be less than under Alternative 1. With fewer on-road vehicles, despite increased housing, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 3 & 4 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* There are no NPS overnight accommodations and thus few campfires or other visitor-related evening sources of smoke. Total daily use levels would be less than under Alternative 1. With fewer on-road vehicles, despite increased housing, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 3 & 4 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* There are no NPS overnight accommodations and thus few campfires or other visitor-related evening sources of smoke. Total daily use levels would be less than under Alternative 1. With fewer on-road vehicles, despite increased housing, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 3 & 4 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* There are no NPS overnight accommodations and thus few campfires or other visitor-related evening sources of smoke. Total daily use levels would be less than under Alternative 1. With fewer on-road vehicles, despite increased housing, the overall effect on local air pollution conditions would be long term, minor, and beneficial.	Segment 3 & 4 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* There are no NPS overnight accommodations and thus few campfires or other visitor-related evening sources of smoke. Total daily use levels would be greater than under Alternative 1. With more on-road vehicles, the overall effect on local air pollution conditions would be regional and local, long term, negligible, and adverse.
Segment 7 Segmentwide, long-term, minor, adverse air quality impacts associated with traffic congestion and delays that would continue to occur, and possibly increase should visitation levels increase in the future. It is expected that the usage of campfires would increase and have a potentially long-term, local, major, adverse impact on sensitive receptors.	Segment 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Thirty-two campsites, or 33% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, local, minor, beneficial impact on air quality due to reduced overnight visitation and campfire emissions.	Segment 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Thirty-two campsites, or 28% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, local, minor, beneficial impact on air quality due to reduced overnight visitation and campfire emissions.	Segment 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Thirty-two campsites, or 28% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, local, minor, beneficial impact on air quality due to reduced overnight visitation and campfire emissions.	Segment 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Thirty-two campsites, or 13% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, local, minor, beneficial impact on air quality due to reduced overnight visitation and campfire emissions.	Segment 7 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Thirty-two campsites, or 33% of all campsites within Wawona, would be removed from the floodplain. This would result in a long-term, local, minor, beneficial impact on air quality due to reduced overnight visitation and campfire emissions.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
8. Air Quality (cont.)					
Cumulative If visitation levels, VMT within the corridor, or usage of campfires were to increase, a local, long-term, minor to major, adverse impact on air pollution would occur, contributing to cumulative impacts.	Cumulative With reduced visitor capacity and campsites, this alternative would result in a long-term, cumulatively beneficial impact on air quality from reduced VMT and campfire usage. The continued management of traffic and encouragement of alternative forms of transportation would have regional and local, long-term, negligible to minor, beneficial impacts on air quality.	Cumulative With reduced visitor capacity, this alternative would result in a long-term, cumulatively beneficial impact on air quality from reduced VMT. The number of campsites would increase which would result in a local, long-term, moderate adverse impact. The continued management of traffic and encouragement of alternative forms of transportation would have regional and local, long-term, negligible to minor beneficial impacts on air quality.	Cumulative With reduced overall visitor capacity, this alternative would result in a regional and local, long-term, minor cumulatively beneficial impact on air quality from reduced VMT. However, increased campsites could result in a local, moderate, adverse impact from increased campfire usage. The continued management of traffic and encouragement of alternative forms of transportation would have regional and local, long-term, negligible to minor beneficial impacts on air quality.	Cumulative With reduced overall visitor capacity, would result in a regional and local, long-term, minor, beneficial impact for ROG emissions. However, with the increased bus operations under this alternative, NOx emissions would be a regional and local, long-term, negligible adverse impact. Increased campsites could result in a local moderate, adverse impact from increased campfire usage. The continued management of traffic and encouragement of alternative forms of transportation would have regional and local, long-term, negligible to minor beneficial impacts on air quality.	Cumulative With increased overall visitor capacity, this alternative would result in a regional and local, long-term, negligible to minor cumulatively adverse impact on air quality from increased VMT and increased campfire usage. The continued management of traffic and encouragement of alternative forms of transportation would have regional and local, long-term, negligible to minor beneficial impacts on air quality.
9. Scenic Resources					
Segment 1 Under this alternative, existing scenic resource impacts affecting natural resource areas and scenic views would occur. With increased park visitation under this alternative, ongoing visitor use impacts on natural resources would continue. Local, long-term, minor, adverse impacts would occur.	Segment 1 Removal of structures, restoration of camping areas, expansion disbursed camping areas, and reduction in visitors would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources.	Segment 1 Removal of structures, restoration of camping areas, expansion disbursed camping areas, and reduction in visitors would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources.	Segment 1 Removal of structures, restoration of camping areas, expansion disbursed camping areas, and reduction in visitors would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources.	Segment 1 Retention of the Merced Lake High Sierra Camp, albeit reduced in capacity, and maintaining existing use levels within wilderness areas, along with various restoration measures, would result in conditions slightly improved from those of Alternative 1 (No Action). The resulting impact would be local, long-term, negligible, and adverse.	Segment 1 The Merced Lake High Sierra Camp and designated camping areas, among other human-made structures would be retained resulting in less restoration activities being implemented, and the existing wilderness permit numbers would be maintained. As such, local, long-term, negligible, beneficial impacts would occur.
Segments 2A and 2B Local, long-term, minor to moderate, adverse impacts would occur to scenic resources because ongoing visitor use impacts on natural resources would continue and vegetation management actions would not be implemented. Also, there would be the continued presence of visual intrusions, and increased visitation. Restoration projects and invasive species removal would improve scenic quality and the visibility of a number of scenic viewpoints within Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in: removal of areas of resource damage that detract from the scenic quality of the river corridor; vegetation restoration. Long-term moderate to major, beneficial impacts on scenic resources within Segment 2A (East Valley) and 2B (West) would occur. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation, overnight lodging and camping, and concessioner housing, would have local, long-term, minor, beneficial impacts on the scenic resources of Segment 2A (East Valley), and result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river would result in: removal areas of resource damage that detract from the scenic quality of the river corridor, and involve restoration of vegetation. Local, long-term moderate to major, beneficial impacts on scenic resources within Segments 2A (East Valley) and 2B (West Valley) would occur. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation, overnight lodging and camping, and concessioner housing, would have local, long-term, minor, beneficial impacts on the scenic resources of Segment 2A (East Valley), and result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in: removal of areas of resource damage that detract from the scenic quality of the river corridor; and vegetation restoration. Meadow and riverbank restoration approaches are proposed, and various road and trail removal/relocation projects would occur. Local, long-term, minor to moderate, beneficial impacts on the scenic resources within Segment 2A (East Valley) and 2B (West Valley) would occur. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities, including reductions in total daily visitation and removal of concessioner housing, would also have local, long-term, negligible to minor, beneficial impacts on the scenic resources of Segment 2A. Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in: vegetation restoration and scenic vista points in some campground areas would not be improved. Local, long-term, minor to moderate, beneficial impacts would occur within Segment 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities, including reduced total daily visitation and concessioner employee housing, and increased lodging and camping, would also have local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 2B (West Valley), namely through the reduction in visitor-related impacts.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, minor, beneficial impacts on scenic resources within Segment 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities, including increased total daily visitation, overnight lodging and camping, and reduced employee housing would have local, long-term, negligible to minor, adverse impacts on the scenic resources of Segment 2A (East Valley). Actions to manage user capacities, land use, and facilities would result in local, long-term, negligible, adverse impacts on the scenic resources of Segment 2B (West Valley), namely through the introduction of new facilities and increase in visitor-related impacts.
Segment 3 & 4 Ongoing visitor use impacts on natural and scenic resources would continue and vegetation management actions would not be implemented. The continued presence of human-made structures would remain and increased visitation could result in impacts on the scenic quality. Local, long-term, minor, adverse impacts on the scenic resources would occur.	Segment 3 & 4 Establishment of the oak tree recruitment zone would have a long-term, minor, beneficial impact on Segment 4. New housing developments in Abbieville and Rancheria would increase in man-made structures, although primarily developed areas. Thus, local, long-term, negligible to minor, adverse impacts on the scenic resources would occur.	Segment 3 & 4 Establishment of the oak tree recruitment zone would have a long-term, minor, beneficial impact on Segment 4. New housing developments in Rancheria would increase in man-made structures, although primarily developed areas. Thus, local, long-term, minor, adverse impacts on the scenic resources would occur.	Segment 3 & 4 Establishment of the oak tree recruitment zone would have a long-term, minor, beneficial impact on Segment 4. New housing developments in Rancheria would increase in man-made structures, although primarily developed areas. Thus, local, long-term, minor, adverse impacts on the scenic resources would occur.	Segment 3 & 4 Establishment of the oak tree recruitment zone would have a long-term, minor, beneficial impact on Segment 4. New housing developments in Rancheria would increase in man-made structures, although primarily developed areas. Thus, local, long-term, minor, adverse impacts on the scenic resources would occur.	Segment 3 & 4 Establishment of the oak tree recruitment zone would have a long-term, minor, beneficial impact on Segment 4. New housing developments in Abbieville and Rancheria would increase in man-made structures, although primarily developed areas. Thus, local, long-term, minor, adverse impacts on the scenic resources would occur.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
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Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
9. Scenic Resources (cont.)					
Segment 5,6,7, & 8 Under this alternative, existing structures and facilities would remain in viewsheds, affected natural resource areas in scenic views would remain, and vegetative management actions to improve scenic view quality would not occur. Increased visitation could result in impacts on the scenic quality of the segments. Local, long-term, minor, adverse impacts on the scenic resources would occur.	*Segment 5, 6, 7 & 8* Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1.The Wawona Golf Course and campsites at the Wawona Campground would be removed. These actions would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segment 7.	Segment 5,6,7& 8 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1.The Wawona Golf Course and campsites at the Wawona Campground would be removed. These actions would result in local, long-term, minor to moderate, beneficial impacts on the scenic resources of Segment 7.	Segment 5,6,7 & 8 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1.The Wawona Golf Course would be retained. Campsites at the Wawona Campground would be removed. These actions would result in local, long-term, minor, beneficial impacts on the scenic resources of Segment 7.	Segment 5,6,7 & 8 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1.The Wawona Golf Course would be retained. Campsites at the Wawona Campground would be removed. These actions would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 7.	Segment 5,6,7 & 8 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1.The Wawona Golf Course would be retained. Campsites at the Wawona Campground would be removed. These actions would result in local, long-term, negligible, beneficial impacts on the scenic resources of Segment 7.
Cumulative This alternative would contribute to worsening localized, adverse conditions in areas with concentrated visitor use and through the continued presence of facilities and infrastructure that are visible within scenic views, and presence of vegetation that is blocking scenic views. Cumulatively, the scenic resources impacts would be local, long term, minor to moderate, and adverse.	Cumulative Impacts of cumulative projects would remain adverse, while this alternative would result in primarily beneficial impacts. Cumulatively, the impact on scenic resources would be local, long term, moderate, and beneficial.	Cumulative Impacts of cumulative projects would remain adverse, while this alternative would result in primarily beneficial impacts. Cumulatively, the impact on scenic resources would be local, long term, moderate, and beneficial.	Cumulative Impacts of cumulative projects would remain adverse, while this alternative would result in primarily beneficial impacts. Cumulatively, the impact on scenic resources would be local, long term, minor to moderate, and beneficial.	Cumulative Impacts of cumulative projects would remain adverse, while this alternative would result in primarily beneficial impacts. Cumulatively, the impact on scenic resources would be local, long term, minor to moderate, and beneficial.	Cumulative Impacts of cumulative projects would remain adverse, while this alternative would result in primarily beneficial impacts. Cumulatively, the impact on scenic resources would be local, long term, minor, and beneficial
10. Visitor Experience/Recreation					
Segment 1 Under this alternative, natural areas will be restored and all campgrounds will be retained to allow for a positive visitor experience. There will be wilderness zone capacities and limited wilderness permits, which could help in visitor perception of crowding. This would result in a segment-side, minor, long-term beneficial impact.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 1 would a have local, long-term, moderate, adverse impacts on visitor experience and recreation within Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 1would a have local, long-term, moderate, adverse impacts on visitor experience and recreation within Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 1would a have local, long-term, moderate, adverse impacts on visitor experience and recreation within Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 1would a have local, long-term, minor, adverse impacts on visitor experience and recreation within Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 1would a have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segment 1.
Segments 2A and 2B Recreation activities and services would continue to operate as they do today and continue to exceed their intended visitor use capacity. Lodging, parking, and public transit would not be expanded under this alternative, which would not meet demand for these services. As such, segment-wide, major, long-term adverse impacts would occur in Segment 2A (East Valley) and Segment 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access, would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access once inside East Yosemite Valley would also have minor beneficial impacts on park and river-related visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, negligible, beneficial impacts on park and river-related visitor experience and recreation.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values within Segment 2A (East Valley), including restoring habitat would result local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in local, long-term, minor to moderate, beneficial impacts on visitor experience and recreation. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities within Segment 2A (East Valley), including improving visitor access would also have minor beneficial impacts on visitor experience and recreation. Within Segment 2B (West Valley), such management actions would result in minor beneficial impacts on visitor experience and recreation.

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10. Visitor Experience/Recreation (cont.)					
Segment 3 & 4 Under Alternative 1, human-made features and activities would continue to affect natural resources and water quality, but would not have a significant effect on the visitor experience due to the small number of visitors to Segment 4. Due to the projected growth, activities and recreation areas may become slightly more crowded as visitors choose to recreate in this area. These activities would continue to provide scenery, uncrowded conditions, and a variety of water-based recreation opportunities. As such, segment-wide, negligible, long-term, beneficial impacts would occur.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 & 4.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 & 4.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 & 4.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 & 4	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would result in local, long-term, negligible, beneficial impacts on visitor experience and recreation within Segment 4. *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible, adverse impacts on visitor experience and recreation within Segments 3 & 4.
Segment 5,6,7 & 8 Existing facilities would continue to operate under this alternative as they do today. As such, crowding in areas like Wawona would occur, as well as a shortage of parking and lodging. Segment-wide, moderate, long-term, adverse impacts would occur.	Segment 5,6,7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.	Segment 5,6,7& 8 *Impacts of Actions to Protect and Enhance River Values* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.	Segment 5,6,7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.	Segment 5,6,7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.	Segment 5,6,7 & 8 *Impacts of Actions to Protect and Enhance River Values* Actions to manage user capacities, land use, and facilities would have local, long-term, negligible to minor, beneficial impacts on visitor experience and recreation within Segments 5-8.
Cumulative Impacts Alternative 1 would contribute to the cumulative effect of allowing localized impacts on the river environment where visitor concentration is high, and contribute to the shortage in overnight lodging and parking. The cumulative impact6 would be regional, long-term, moderate, and adverse.	Cumulative Impacts Visitor services improvements and upgrades would enhance visitor experience and reduce the existing stress on visitor facilities. Changes to visitor-serving accommodations, transportation, parking, and other facilities would be designed to protect the river corridor, while maintaining many of the recreational opportunities that directly facilitate visitors' ability to experience the park and the river. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans. The cumulative impact would be parkwide, long term, moderate, and beneficial.	Cumulative Impacts Visitor services improvements and upgrades would enhance visitor experience and reduce the existing stress on visitor facilities. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans The cumulative impact would be parkwide, long term, minor to moderate, and beneficial.	Cumulative Impacts Visitor services improvements and upgrades would enhance visitor experience and reduce the existing stress on visitor facilities. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans The cumulative impact would be parkwide, long term, minor to moderate, and beneficial.	Cumulative Impacts Visitor services improvements and upgrades would enhance visitor experience and reduce the existing stress on visitor facilities. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans The cumulative impact would be parkwide, long term, minor to moderate, and beneficial.	Cumulative Impacts Visitor services improvements and upgrades would enhance visitor experience and reduce the existing stress on visitor facilities. Visitors would also benefit from past and present habitat and riverbank restoration and resource management projects and plans The cumulative impact would be parkwide, long term, minor to moderate, and beneficial.
11. Wilderness Character					
Segment 1 Current activities and actions that exhibit human control and manipulation of the landscape to repair visitor impacts would continue. As such, local, minor, long-term, and adverse impacts to untrammeled quality of wilderness character would occur. Current management activities would continue and serve to improve the natural conditions. The impact of these activities on the natural character would be local, minor, long-term and beneficial. The greatest impacts on the wilderness character would be from the infrastructure and visitor use associated with the Merced Lake High Sierra Camp and from improvements to and concentrated visitor use of the three campgrounds in this segment—Little Yosemite Valley, Moraine Dome, and Merced Lake. In addition, under this alternative, the agency requirement for wilderness permits detracts from the character of unconfined recreation. A local, minor, long-term, adverse impact on wilderness character would occur.	Segment 1 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* The park would eliminate most of the facilities, infrastructure, and activities that diminish wilderness character; reduce the number of overnight visitors to the Yosemite Wilderness; eliminate overnight stock trips; and designate the Merced Lake High Sierra Camp area as wilderness. Together, these actions would have a local, long-term, moderate, beneficial impact on wilderness character in Segment 1.	Segment 1 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* The park would eliminate most of the facilities, infrastructure, and activities that affect wilderness character, reduce by 50% the number of wilderness permits, reduce overnight stock trips, and designate the Merced Lake High Sierra Camp area as wilderness while providing a temporary pack camp. Together, these actions would have a local, long-term, moderate, beneficial impact on wilderness character.	Segment 1 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* The park would eliminate most of the facilities, infrastructure, and activities that affect wilderness character, reduce by 50% the number of wilderness permits in the Little Yosemite Valley zone, eliminate overnight stock trips, and designate the Merced Lake High Sierra Camp area as wilderness. Together, these actions would have a local, long-term, minor, beneficial impact on wilderness character.	Segment 1 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* This alternative would include actions that together would have a local, long-term, minor, beneficial impact on the untrammeled, natural, and undeveloped character of the wilderness and opportunities for wilderness solitude and primitive recreation. This alternative would maintain approximately the current number of visitors, retain all three backpackers campgrounds at their current size and configuration, and reduce the capacity of the Merced Lake High Sierra Camp. Current wilderness permits and trail quotas for this zone would remain.	Segment 1 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* The wilderness character would remain much the same as it is today. The number of wilderness permits issued would remain the same; the number of visitors to Yosemite Valley would remain close to existing numbers; and pack stock would continue to access the wilderness. Therefore, this alternative would improve wilderness character slightly. Local, long-term, negligible, beneficial impacts on wilderness character would occur.

Segment 1 – Above Nevada Falls
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Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
11. Wilderness Character (cont.)					
Segments 2A and 2B-4 & 6-8 No impact.	Segments 2A and 2B-4 & 6-8 No impact.	Segments 2A and 2B-4 & 6-8 No impact.	Segments 2A and 2B-4 & 6-8 No impact.	Segments 2A and 2B-4 & 6-8 No impact.	Segments 2A and 2B-4 & 6-8 No impact.
Segment 5 There are no man-made alterations to the biophysical environment, and the ecosystem would continue to function with limited human interference due to the near absence of facilities in this segment. No development would occur under this alternative; thus, the impact would be negligible.	Segment 5 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* No development would occur under this alternative; thus, the impact would be negligible.	Segment 5 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* No development would occur under this alternative; thus, the impact would be negligible.	Segment 5 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* No development would occur under this alternative; thus, the impact would be negligible.	Segment 5 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* No development would occur under this alternative; thus, the impact would be negligible	Segment 5 *Impacts of Actions to Manage User Capacities, Land Use, and Facilities* No development would occur under this alternative; thus, the impact would be negligible
Cumulative Impacts Cumulative impacts would result in improved protection and enhancement of wilderness resources; continued limits on overnight use; and retention of manmade structures and facilities. Impacts would be local, minor, long term and adverse.	Cumulative Impacts Cumulative impacts would improve wilderness management and limit access to protect wilderness character. The cumulative impact would be segmentwide (in Segments 1 and 5), long term, moderate, and beneficial.	Cumulative Impacts Cumulative impacts would improve wilderness management and reduce the number of wilderness visitors. The cumulative impact of the wilderness management measures would be segmentwide (in Segments 1 and 5), long term, moderate, and beneficial.	Cumulative Impacts Cumulative impacts would improve wilderness management and reduce the number of wilderness visitors. The cumulative impact of the wilderness management measures would be segmentwide (in Segments 1 and 5), long term, minor, and beneficial.	Cumulative Impacts Cumulative impacts would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures would be segmentwide (in Segments 1 and 5), long term, minor, and beneficial. Displacement of visitors or commercial operators would not be appreciable.	Cumulative Impacts Cumulative impacts would improve wilderness stewardship and limit access to protect wilderness character. The cumulative impact of the wilderness management measures would be segmentwide (in Segments 1 and 5), long term, negligible, and beneficial.
12. Park Operations and Facilities					
Segment 1, 5 & 8 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. The continuing impact on park operations would continue to be long-term, negligible, and adverse. The number of designated campsites within the Merced River corridor's wilderness would remain as under present conditions. The park would continue to experience a long-term, negligible, adverse operational impact from these activities.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation within Segment 1 would be reduced. The resulting decline would reduce the park's operational burden associated with visitation-related wilderness restoration. The long-term impact would be minor and beneficial. There would be a 100% reduction in the Merced River corridor's wilderness lodging units. These actions would have long-term, minor, beneficial impacts on concessioner operations. Removal of the Merced Lake High Sierra Camp and the associated visitor services would require a temporary commitment of park staff time, resources, and equipment. The short-term impact on park operations would be minor and adverse. However, the operational burden would be reduced with their conversion and removal. The long-term impact on park operations would be minor and beneficial.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation within Segment 1 would be reduced. The resulting decline would reduce the park's operational burden associated with visitation-related wilderness restoration. The long-term impact would be minor and beneficial. There would be a 100% reduction in the Merced River corridor's wilderness lodging units. These actions would have a long-term, negligible to minor, beneficial impact on concessioner operations. Removal of the Merced Lake High Sierra Camp, and the associated visitor services, would require a temporary commitment of park staff time, resources, and equipment. The short-term impact on park operations would be minor and adverse. The long-term impact on park operations would be negligible to minor and beneficial.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation within Segment 1 would be reduced. The resulting decline would reduce the park's operational burden associated with visitation-related wilderness restoration. The long-term impact would be minor and beneficial. There would be a 100% reduction in the Merced River corridor's wilderness lodging units. These actions would have long-term, minor, beneficial impacts on concessioner operations. Removal of the Merced Lake High Sierra Camp, and the associated visitor services, would require a temporary commitment of park staff time, resources, and equipment. The short-term impact on park operations would be minor and adverse. The long-term impact on park operations would be negligible to minor and beneficial.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation within Segment 1 would not be expected to change appreciably. 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. NPS and primary park concessioner staff would continue to experience a long-term, negligible, adverse impact associated with staffing, supplying, and maintaining the Merced Lake High Sierra Camp operations. The removal of infrastructure and restoration of these camps would require a temporary commitment of park staff time, resources, and equipment. The short-term impact on park operations would be negligible to minor and adverse. The long-term impact on park operations would be negligible and adverse.	Segment 1, 5 & 8 *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Visitation within Segment 1 would not be expected to change appreciably. 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. NPS and primary park concessioner staff would continue to experience a long-term, negligible, adverse impact associated with staffing, supplying, and maintaining the Merced Lake High Sierra Camp operations. The removal of infrastructure and restoration of these camps would require a temporary commitment of park staff time, resources, and equipment. The short-term impact on park operations would be negligible to minor and adverse. The long-term impact on park operations would be negligible and adverse.
Segments 2A and 2B Protecting river values under these conditions would necessitate ongoing maintenance and restoration activities, the impact on park operations would continue to be parkwide, long-term, minor, and adverse. 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 parkwide, long-term, minor, and adverse.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Restoration projects would require a considerable amount of park staff time and resources. These actions would benefit parkwide operations because they would lessen the need for future restoration. However, they would also increase the need for ongoing monitoring and maintenance of the restoration areas. The overall impact on park operations would be long-term, negligible, and adverse within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Value:* Restoration projects would require a considerable amount of park staff time and resources. These actions would benefit parkwide operations because they would lessen the need for future restoration. However, they would also increase the need for ongoing monitoring and maintenance of the restoration areas. The overall impact on park operations would be long-term, negligible, and adverse within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Restoration projects would require a considerable amount of park staff time and resources. These actions would benefit parkwide operations because they would lessen the need for future restoration. However, they would also increase the need for ongoing monitoring and maintenance of the restoration areas. The overall impact on park operations would be long-term, negligible, and adverse within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Restoration projects would require a considerable amount of park staff time and resources. These actions would benefit parkwide operations because they would lessen the need for future restoration. However, they would also increase the need for ongoing monitoring and maintenance of the restoration areas. The overall impact on park operations would be long-term, negligible, and adverse within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Restoration projects would require a considerable amount of park staff time and resources. These actions would benefit parkwide operations because they would lessen the need for future restoration. However, they would also increase the need for ongoing monitoring and maintenance of the restoration areas. The overall impact on park operations would be long-term, negligible to minor, and adverse within Segments 2A (East Valley) and 2B (West Valley).

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12. Park Operations and Facilities (cont.)					
Segments 2A and 2B (cont.) Overnight lodging facilities would remain in operation and continue to receive guests at present levels. The management and maintenance requirements of these facilities would continue to have a parkwide, long-term, negligible to minor, adverse impact on park operations. The number of campsites within the valley would remain as under current conditions. 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 parkwide, long-term, negligible to minor, adverse operational impact. Concessioner operations within the valley would stay in their present locations and conditions. Under these conditions, operational impact would continue to be parkwide, negligible to minor, and adverse.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Changes in visitation, overnight accommodations, employee housing, and transportation infrastructure and management would have a parkwide, long-term, minor to moderate, beneficial impacts on park operations and facilities within Segments 2A (East Valley) and 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Changes in visitation, overnight accommodations, employee housing, and transportation infrastructure and management would have a parkwide, long-term, minor to moderate, beneficial impacts on park operations and facilities within Segments 2A (East Valley) and 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Changes in visitation, overnight accommodations, employee housing, and transportation infrastructure and management would have a parkwide, long-term, minor, beneficial impacts on park operations and facilities within Segments 2A (East Valley) and 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Changes in visitation, overnight accommodations, employee housing, and transportation infrastructure and management would have a parkwide, long-term, negligible to minor, beneficial impacts on park operations and facilities within Segments 2A (East Valley) and 2B (West Valley).	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Changes in visitation, overnight accommodations, employee housing, and transportation infrastructure and management would have a parkwide, long-term, negligible to minor, adverse impacts on park operations and facilities within Segments 2A (East Valley) and 2B (West Valley).
Segment 3 & 4 Park staff would continue to incur a long-term, negligible to minor, adverse impact associated with the incremental management of the impacts stemming from existing developments. There would continue to be no concessioner-operated lodging or campgrounds within these segments and thus a long-term, negligible adverse impact would result.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Development and implementation of oak tree protective measures would have a short-term, negligible, adverse effect on staff operations. The consequent long-term impact on park operations would be negligible and adverse. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New high-density concessioner housing would be constructed in Abbieville and Rancheria. New housing would also be constructed in El Portal Village Center. The park would experience a short-term, moderate, adverse operational impact associated with the planning, design, relocation, and construction of new projects. 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 increase in residential occupants.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Development and implementation of oak tree protective measures would have a short-term, negligible, adverse effect on staff operations. The consequent long-term impact on park operations would be negligible and adverse. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New high-density concessioner housing would be constructed in Rancheria. New housing would also be constructed in Rancheria and El Portal Village Center. The park would experience a short-term, minor, adverse operational impact associated with the planning, design, relocation, and construction of new projects. 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 increase in residential occupants.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Development and implementation of oak tree protective measures would have a short-term, negligible, adverse effect on staff operations. The consequent long-term impact on park operations would be negligible and adverse. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New high-density concessioner housing would be constructed in Rancheria. New housing would also be constructed in Rancheria and El Portal Village Center. The park would experience a short-term, minor to moderate, adverse operational impact associated with the planning, design, relocation, and construction of new projects. 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 increase in residential occupants.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Development and implementation of oak tree protective measures would have a short-term, negligible, adverse effect on staff operations. The consequent long-term impact on park operations would be negligible and adverse. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New high-density concessioner housing would be constructed in Rancheria. New housing would also be constructed in Rancheria and El Portal Village Center. The park would experience a short-term, minor to moderate, adverse operational impact associated with the planning, design, relocation, and construction of new projects. 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 increase in residential occupants.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Development and implementation of oak tree protective measures would have a short-term, negligible, adverse effect on staff operations. The consequent long-term impact on park operations would be negligible and adverse. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* New high-density concessioner housing would be constructed in Rancheria and Abbieville. New housing would also be constructed in Rancheria and El Portal Village Center. The park would experience a short-term, moderate, adverse operational impact associated with the planning, design, relocation, and construction of new projects. 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 increase in residential occupants.

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12. Park Operations and Facilities (cont.)					
Segment 6 & 7 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. Long-term management of impacts associated with development near the channel would continue to impose a negligible, adverse operational burden on the park.	Segment 6 & 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values include removal of the Wawona Golf Course would noticeably but temporarily disrupt the work of park staff. The undertaking would have a short-term, minor, adverse impact on park operations. Park staff would still incur a long-term, negligible to minor, adverse operational burden associated with monitoring and maintenance of these restoration areas. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The park would experience a short-term, minor, adverse operational impact associated with the planning and execution of new projects. These actions would result in a long-term, minor, adverse impact on park operations associated with restoration monitoring and maintenance. Reduction in size of the Wawona Campground would result in a long-term, parkwide, minor, beneficial impact on park operations required to manage and maintain these facilities.	Segment 6 & 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values include removal of the Wawona Golf Course would noticeably but temporarily disrupt the work of park staff. The undertaking would have a short-term, minor, adverse impact on park operations. Park staff would still incur a long-term, negligible, adverse operational burden associated with monitoring and maintenance of these restoration areas. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The park would experience a short-term, minor, adverse operational impact associated with the planning and execution of new projects. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance. Reduction in size of the Wawona Campground would result in a long-term, parkwide, negligible to minor, beneficial impact on park operations required to manage and maintain these facilities.	Segment 6 & 7 *Impacts of Actions to Protect and Enhance River Values* Specific projects include the relocation of stock use campsites. 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* The park would experience a short-term, negligible to minor, adverse operational impact associated with the planning and execution of new projects. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance. Reduction in size of the Wawona Campground would result in a long-term, parkwide, negligible to minor, beneficial impact on park operations required to manage and maintain these facilities.	Segment 6 & 7 *Impacts of Actions to Protect and Enhance River Values* Specific projects include the relocation of stock use campsites. 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* The park would experience a short-term, negligible to minor, adverse operational impact associated with the planning and execution of new projects. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance. Reduction in size of the Wawona Campground would result in a long-term, parkwide, negligible, beneficial impact on park operations required to manage and maintain these facilities.	Segment 6 & 7 *Impacts of Actions to Protect and Enhance River Values* Specific projects include the relocation of stock use campsites. 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* The park would experience a short-term, negligible to minor, adverse operational impact associated with the planning and execution of new projects. These actions would result in a long-term, negligible, adverse impact on park operations associated with restoration monitoring and maintenance. Reduction in size of the Wawona Campground would result in a long-term, parkwide, negligible, beneficial impact on park operations required to manage and maintain these facilities.
Cumulative Impacts The cumulative effect would be long-term, negligible, and beneficial.	Cumulative Impacts The cumulative impact of Alternative 2, in light of past, present, and reasonably foreseeable future projects, would be long-term, moderate, and beneficial.	Cumulative Impacts The cumulative impact of Alternative 3, in light of past, present, and reasonably foreseeable future projects, would be long-term, moderate, and beneficial.	Cumulative Impacts The cumulative impact of Alternative 4, in light of past, present, and reasonably foreseeable future projects, would be long-term, minor to moderate, and beneficial.	Cumulative Impacts The cumulative impact of Alternative 5, in light of past, present, and reasonably foreseeable future projects, would be long-term, minor, and beneficial.	Cumulative Impacts The cumulative impact of Alternative 6, in light of past, present, and reasonably foreseeable future projects, would be long-term, negligible, and beneficial.
13. Transportation					
Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.	Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.	Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.	Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.	Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.	Segment 1, 5, 6 & 8 No impact as there are no transportation facilities in these segments.
Segments 2A and 2B There could be segmentwide (East and West Yosemite Valley), long-term, minor to moderate, adverse impacts on transportation conditions from the continuation of current transportation management actions to address increases in park visitation, increases in traffic volumes on the park roadways, and increased parking demand that exceeds the parking supply (i.e., a larger parking deficit).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Under this alternative, traffic flow and circulation would be improved and an at-grade pedestrian crossing to alleviate pedestrian/vehicle conflicts would be constructed. Actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation effects associated with restoration construction activities within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Transportation and circulation would be improved due to the day use permit parking system, and the resulting substantially lower use levels, approximately 33% decrease from existing peak-day conditions. These actions would have segmentwide, moderate, long-term, beneficial impacts within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Under this alternative, traffic flow and circulation would be improved and an at-grade pedestrian crossing to alleviate pedestrian/vehicle conflicts would be constructed. Actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation effects associated with restoration construction activities within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Transportation and circulation would be improved due to the day use reservation system with substantially lower use levels, approximately 37% decrease from existing peak-day conditions. These actions would have segmentwide, moderate, long-term, beneficial impacts within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Under this alternative, traffic flow and circulation would be enhanced with roadway improvements and construction of a pedestrian underpass. Actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Transportation and circulation would be improved due to the day use reservation system with substantially lower use levels, approximately 19% decrease from existing peak-day conditions, as well as expansion of regional bus service and the Valley shuttle. These actions would have segmentwide, moderate, long-term, beneficial impacts within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would primarily have local, short-term, minor, adverse transportation impacts associated with restoration construction activities within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Implementation of the day use capacity management system, additional parking spaces, and transportation system improvements would lessen traffic jams, and improve the chance that visitors entering Yosemite have a place to park. These actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would primarily have segmentwide, short-term, minor, adverse transportation effects associated with restoration construction activities within Segments 2A (East Valley) and 2B (West Valley). *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although the total number of daily visitors to Yosemite Valley would be slightly higher than existing peak-day numbers, the implementation of the day use capacity management system, additional parking spaces, and transportation system improvements would lessen traffic jams, and ensure that visitors entering the park have a place to park (thus eliminating unnecessary circling). These management actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions within Segments 2A (East Valley) and 2B (West Valley).

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
13. Transportation (cont.)					
Segment 3 & 4 There would be local, long-term, minor, adverse impacts associated with continuation of transportation conditions (traffic flow and parking for automobiles and charter buses) in Segments 3 and 4	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The total number of daily visitors would not change from existing peak-day conditions, and public transit would be expanded. As such, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The total number of daily visitors would not change from existing peak-day conditions, and public transit would be expanded. As such, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.	Segment 3 & 4 Impacts of Actions to Protect and Enhance River Values Actions to protect and enhance river values would have segmentwide , short-term, minor, adverse transportation impacts associated with restoration construction activities. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The total number of daily visitors would not change from existing peak-day conditions, public transit would be expanded, and a new remote, 200-space visitor day parking area would be provided. Combined, these actions would have segmentwide, minor, long-term, beneficial impacts on transportation conditions.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, minor, adverse short-term transportation effects associated with restoration construction activities. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* The total number of daily visitors would not change from existing peak-day conditions, public transit would be expanded, and a new remote, 200-space visitor day parking area would be provided. Combined, these actions would have segmentwide, moderate, long-term, beneficial impacts on transportation conditions.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities. Impacts of Actions to Manage User Capacity, Land Use, and Facilities The total number of daily visitors would not change from existing peak-day conditions, public transit would be expanded, and a new remote, 200-space visitor day parking area would be provided. These management actions would havesegmentwide, moderate, long-term, beneficial impacts on transportation conditions.
Segment 7 Continuation of current transportation management actions to address increases in park visitation, traffic volumes on the park roadways, and parking demand that exceeds the parking supply would occur. As such, there could be segmentwide, long-term, minor, adverse impacts.	Segment 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although there would be no significant changes to the kinds and amounts of use are proposed, one round trip regional transit run would be added through Wawona, and result in segmentwide, long-term, minor, beneficial impacts on transportation.	Segment 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although there would be no significant changes to the kinds and amounts of use are proposed, one round trip regional transit run would be added through Wawona, and result in segmentwide, long-term, minor, beneficial impacts on transportation.	Segment 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation effects associated with restoration construction activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although there would be no significant changes to the kinds and amounts of use are proposed, four round trip regional transit runs would be added through Wawona, and result in segmentwide, long-term, minor, beneficial impacts on transportation.	Segment 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although there would be no significant changes to the kinds and amounts of use are proposed, twelve round trip regional transit runs would be added through Wawona, and result in segmentwide, long-term, minor, beneficial impacts on transportation.	Segment 7 *Impacts of Actions to Protect and Enhance River Values* Actions to protect and enhance river values would have segmentwide, short-term, minor, adverse transportation impacts associated with restoration construction activities, but would have no long-term impacts because increased traffic would cease with completion of the construction work. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Although there would be no significant changes to the kinds and amounts of use are proposed, twelve round trip regional transit runs would be added through Wawona, and result in segmentwide, long-term, minor, beneficial impacts on transportation.
Cumulative Impacts Cumulative projects are not anticipated to affect transportation conditions on Segments 1, 5, 6, and 8, and therefore, no cumulative impacts would occur. For segments 2, 3, 4 and 7, camping, lodging, parking, and circulation facilities are assumed to remain in their current locations, in their current conditions, and at their current capacities. Consequently, traffic congestion and delays would continue to occur at busy intersections resulting in segment-wide, long-term, minor, adverse impacts on transportation conditions.	Cumulative Impacts Cumulative projects would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, improvements realized through cumulative projects would further enhance the moderate, long-term, beneficial impacts.	Cumulative Impacts Cumulative projects would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through cumulative projects would further enhance the moderate, long-term, beneficial impacts on transportation.	Cumulative Impacts Cumulative projects would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through cumulative projects would further enhance the moderate, long-term, beneficial impacts on transportation.	Cumulative Impacts Cumulative projects would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through cumulative projects would further enhance the moderate, long-term, beneficial impacts on transportation.	Cumulative Impacts Cumulative projects would result in a local, short-term, minor, adverse impact on transportation during construction periods. However, the improvements realized through cumulative projects would further enhance the moderate, long-term, beneficial impacts on transportation.
14. Energy Consumption and Climate Change					
Segment 1, 5, 6 & 8 No new buildings or facilities would be constructed as part of Alternative 1, so no substantial new sources of energy consumption or emissions would be introduced. Although park visitation would be expected to increase, these segments do not have transportation facilities and are relatively inaccessible, so visitor use in these areas would not likely increase at the same rate. Therefore, this is a long-term and negligible impact.	Segment 1, 5, 6 & 8 No new buildings and facilities would be constructed, so no substantial new sources of energy consumption or emissions would be introduced. Maximum overnight capacity and total daily use levels would be less than under Alternative 1. With fewer on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial	Segment 1, 5, 6 & 8 No new buildings and facilities would be constructed so no substantial new sources of energy consumption or emissions would be introduced. Maximum overnight capacity and total daily use levels would be less than under Alternative 1. With fewer on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial.	Segment 1, 5, 6 & 8 No new buildings and facilities would be constructed so no substantial new sources of energy consumption or emissions would be introduced. Maximum overnight capacity and total daily use levels would be less than under Alternative 1. With fewer on-road vehicles in the vicinity, the overall effect on energy would be long term, negligible to minor, and beneficial.	Segment 1, 5, 6 & 8 No new buildings and facilities would be constructed within these segments so no substantial new sources of energy consumption or emissions would be introduced. Maximum overnight capacity and total daily use levels would be less than under Alternative 1. With fewer on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs would be long term, negligible, and beneficial.	Segment 1, 5, 6 & 8 No new buildings and facilities would be constructed so no substantial new sources of energy consumption or emissions would be introduced. With more on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs would be long term, negligible, and adverse

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
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Segment 7 - Wawona
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Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
14. Energy Consumption and Climate Change (cont.)					
Segments 2A and 2B, 3 & 4, and 7 There would be long-term, moderate beneficial impacts associated with the continuation of NPS climate-action-plan sustainability strategies; however, because mobile sources generate the vast majority of all GHGs in the park, and visitation is projected to increase, an overall long-term, minor, adverse impact related to energy and GHGs would occur across Segments 2A (East Valley) and 2B (West Valley), 3, 4, and 7.	Segments 2A and 2B Maximum overnight visitation and total daily use levels would be 26% and 33% less, respectively, than under Alternative 1. Reduced housing or lodging would result in a proportional reduction in area GHG emissions sources and facility energy usage. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions. With fewer on-road vehicles and potential area sources, the overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B Maximum overnight visitation and total daily use levels would be 23% and 37% less, respectively, than under Alternative 1. Reduced housing and lodging would result in a proportional reduction in area GHG emissions sources in facility energy usage. Since campsites would be increased along this segment, there would also be a proportional increase in campfires, which would result in a long-term, negligible, adverse impact for GHG emissions. However, with fewer on-road vehicles and potential area sources under Alternative 3, the overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B Maximum overnight visitation would be 7% greater and total daily use levels would be 19% less than under Alternative 1. Since campsites would be increased along this segment, there would also be a proportional increase in campfire GHG emissions, which would be a long-term, negligible to minor, adverse impact. Reduced housing and lodging would result in a proportional reduction in area GHG emissions sources and in facility energy usage. Overall, with fewer on-road vehicles and potential area sources, the effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B Maximum overnight visitation would be 16% greater and total daily use levels would be 5% less than under Alternative 1. Since campsites would be increased along this segment, which would have a long-term, negligible to minor, adverse impact. With fewer on-road vehicles, despite increased lodging, energy consumption and related GHG emissions would be long term, negligible to minor, and beneficial within Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B Maximum overnight capacity and total daily use levels would be 33% and 6% greater, respectively, than under Alternative 1. Since campsites would be increased along this segment, a long-term, negligible to minor, adverse impact would occur. Reduced housing would result in a proportional reduction, while increased lodging would contribute to a proportional increase in area GHG emissions sources and in facility energy usage. With more on-road vehicles and potential area sources, the overall effect on energy consumption and GHGs would be long term, negligible, and adverse within Segments 2A (East Valley) and 2B (West Valley).
	Segments 3 & 4 Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. Reduced visitation would have the opposite effect due to fewer vehicles on the road. The overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial.	Segments 3 & 4 Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. Reduced visitation would have the opposite effect due to fewer vehicles on the road. The overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial.	Segments 3 & 4 Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. Reduced visitation would have the opposite effect due to fewer vehicles on the road. The overall effect on energy consumption and GHGs would be long term, negligible to minor, and beneficial.	Segments 3 & 4 Increased housing would result in a proportional increase in area GHG emissions sources (such as maintenance/landscaping, natural gas combustion for heating/cooling) and in facility energy usage. Reduced visitation would have the opposite effect due to fewer vehicles on the road. The overall effect on energy consumption and GHGs would be long term, negligible, and beneficial.	Segments 3 & 4 No new buildings and facilities would be constructed so no substantial new sources of energy consumption or emissions would be introduced. With more on-road vehicles in the vicinity, the overall effect on energy consumption and GHGs would be long term, negligible, and adverse.
	Segment 7 Total daily use levels would not change and overnight visitation would be less than under Alternative 1. The removal of the golf course for ecological restoration and the removal of the Wawona stables would have a beneficial effect. Energy consumption and GHGs associated with these facilities would be reduced, which would result in a long-term, negligible to minor, beneficial impact. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact.	Segment 7 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1. The removal of the golf course for ecological restoration would have a beneficial effect. Energy consumption and GHGs associated with this facility would be reduced, which would have a long-term, negligible to minor, beneficial impact. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact.	Segment 7 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact.	Segment 7 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact.	Segment 7 Total daily use levels would not change and maximum overnight visitation would be less than under Alternative 1. Since campsites would be reduced along this segment, there would also be a proportional reduction in campfire GHG emissions, which would have a long-term, negligible, beneficial impact.
Cumulative Impacts Long-term, minor, adverse	Cumulative Impacts With reduced daytime and nighttime visitor capacity and continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies proposed management actions would also result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and facility energy usage.	Cumulative Impacts With reduced daytime and nighttime visitor capacity and continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, proposed management actions would result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and facility energy usage.	Cumulative Impacts With reduced overall daily visitor capacity and continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, Alternative 4 would result in a long-term, cumulatively beneficial energy and climate change impact from reduced VMT and associated fuel usage and GHG emissions. However, an increased number of campsites could result in an adverse impact.	Cumulative Impacts With reduced overall visitor capacity and continued management of traffic and encouragement of alternative forms of transportation, as well as continuation of NPS climate-action-plan sustainability strategies, Alternative 5 would result in a long-term, cumulatively beneficial effect on energy and climate change from reduced VMT and associated fuel usage and GHG emissions. However, an increased number of lodging units and campsites would result in an adverse impact from increased area source GHG emissions.	Cumulative Impacts With increased overall visitor capacity, number of campsites, and number of lodging units, Alternative 6 would result in a long-term, cumulatively adverse impact on energy and climate change from increased VMT, associated fuel usage and GHG emissions.

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Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 **No Action**	**Alternative 2** **Self-Reliant Visitor Experiences and Extensive Floodplain Restoration**	**Alternative 3** **Dispersed Visitor Experiences and Extensive Riverbank Restoration**	**Alternative 4** **Resource-Based Visitor Experiences and Targeted Riverbank Restoration**	**Alternative 5** **Enhanced Visitor Experience and Essential River Bank Restoration**	**Alternative 6** **Diversified Visitor Experiences and Selective Riverbank Restoration**
15. Socioeconomics					
All Segments Current trends would be expected to continue, and include full occupancy of lodging and day parking in the park during peak use periods, which implies there is additional unmet demand for visits to the park. Some of that unmet demand may increase the demand for visitor services in gateway communities. This impact would result in a regional, long term, negligible and beneficial effect.	All Segments This alternative would support 517 fewer jobs than Alternative 1, and because it would be less than 2.5% fewer jobs the impact would be regional, long term, negligible, and adverse.	All Segments Under a capacity-constrained scenario, this alternative would support 544 fewer jobs than Alternative 1, resulting in a long-term, adverse, and negligible impact.	All Segments Under a capacity-constrained scenario, this alternative would support 110 fewer jobs than Alternative 1, resulting in a long-term, adverse, and negligible impact.	All Segments This alternative would support four fewer jobs, resulting in long-term, regional, negligible, and adverse impacts.	All Segments This alternative would support approximately 356 more jobs than Alternative 1, resulting in long-term, regional, negligible, and beneficial impacts.
Cumulative Impacts The overall cumulative effect would be that visitation is likely to continue to grow at an average rate of approximately 3% per year, and current total annual visitation would remain near the historic high experienced over the last decade. Therefore, the cumulative economic impact would be regional, long term, negligible, and beneficial.	Cumulative Impacts If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may result in private interests expanding the supply in surrounding areas. Additional demand may be satisfied by increasing hours and seasons of operations, and adding additional staff to expand capacities. The cumulative impact would be regional, long term, negligible, and adverse.	Cumulative Impacts If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may result in private interests expanding the supply in surrounding areas. Additional demand may be satisfied by increasing hours and seasons of operations, and adding additional staff to expand capacities. The cumulative impact would be regional, long term, negligible, and adverse.	Cumulative Impacts If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may result in private interests expanding the supply in surrounding areas. Additional demand may be satisfied by increasing hours and seasons of operations, and adding additional staff to expand capacities. The cumulative impact would be regional, long term, negligible, and adverse.	Cumulative Impacts If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may result in private interests expanding the supply in surrounding areas. Additional demand may be satisfied by increasing hours and seasons of operations, and adding additional staff to expand capacities. The cumulative impact would be regional, long term, negligible, and adverse.	Cumulative Impacts If public management actions reduce the supply of lodging and other commercial amenities within the park, demand pressures may result in private interests expanding the supply in surrounding areas. Additional demand may be satisfied by increasing hours and seasons of operations, and adding additional staff to expand capacities. The cumulative impact would be regional, long term, negligible, and beneficial.
16. Historic Buildings, Structures, and Cultural Landscapes					
Segment 1 Under this alternative, impacts on these resources would be negligible under NEPA criteria as management of resources and structures would remain the same.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* No impact to historic resources *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* No impact to historic resources *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* No impact to historic resources *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Long-term, major, adverse impact to the Merced Lake High Sierra Camp Historic District.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* No impact to historic resources *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Long-term, moderate, adverse impact to the Merced Lake High Sierra Camp Historic District.	Segment 1 *Impacts of Actions to Protect and Enhance River Values* No impact to historic resources *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* No impact to the Merced Lake High Sierra Camp Historic District.
Segments 2A and 2B Under this Alternative, impacts on the majority of resources would be negligible under NEPA criteria, although there would be minor, segment-wide, adverse impacts to the Yosemite Valley and Yosemite Village Historic Districts, including continued encroachment of conifers into historic meadows (impacting contributors to the Yosemite Valley Historic District), and continuing flood and water damage to the Superintendent's House (contributor to the Yosemite Valley and Yosemite Village Historic Districts).	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the removal of a substantial number of contributing resources (Ahwahnee Row and Tecoya housing) would result in a long-term, moderate, adverse impact to both the Yosemite Valley and Yosemite Village Historic Districts. Removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact. Restoration of historic views and vistas would result in long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact. Removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact. Scenic resource actions such as the restoration of historic views and vistas would result in long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact. Removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, removal of the historic Stoneman, Ahwahnee, and Sugar Pine Bridges would result in a long-term, moderate, adverse impact. Restoration of historic views and vistas would result in long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact. Removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conducting further studies and identify mitigation measures for success would result in no impact. Restoration of historic views and vistas would result in long-term, beneficial impacts to contributing resource.	Segments 2A and 2B *Impacts of Actions to Protect and Enhance River Values* Removal and/or realignment of contributing resources (tennis courts, historic ditches, and the Valley Loop Trail) would result in long-term, negligible, adverse impacts; however, restoration of contributing resources (meadows) would result in a long-term, beneficial impact. Additionally, the restoration of the contributing resource (El Capitan Meadow) would result in a long-term, beneficial impact. Removal of the former historic Happy Isles footbridge historic and Gauging Station at Pohono Bridge would result in long-term, negligible, adverse impacts. Actions to restore highly impacted riverbanks between Clark's and Sentinel Bridges would have no impacts on contributing resources. Additionally, actions to address localized hydrologic impacts through engineered log jams and riverbank restoration and conducting further studies and identify mitigation measures for success would result in no impact. Restoration of historic views and vistas would result in long-term, beneficial impacts to contributing resource and cultural resource actions to rehabilitate a contributing resource (Residence 1) would result in a long-term, beneficial impact.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
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Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
16. Historic Buildings, Structures, and Cultural Landscapes (cont.)					
Segments 2A and 2B (cont.)	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Curry Village – Removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging and 16 dormitories at Huff House area) within the historic district would result in long-term, moderate to major, adverse impacts. Restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district. Yosemite Village and Housekeeping Camp – Demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts. Yosemite Lodge and Camp 4 Campgrounds – New infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Elimination of the Yosemite Lodge Historic District would result in a long-term, major adverse impact and would likely result in ineligibility of the historic district and the construction of a new parking area within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Curry Village – Removal of a substantial number of contributing resources and construction of substantial new infrastructure (16 dormitories at Huff House area) within the historic district would result in long-term, negligible to moderate, adverse impacts. Restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district. Yosemite Village and Housekeeping Camp – Demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Elimination of the Housekeeping Camp Historic District would result in a long-term, major, adverse impact to the district and result in it no longer being eligible for listing on the National Register. The removal of non-contributing resources would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts. Yosemite Lodge and Camp 4 Campgrounds – Minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Removal of a substantial amount of contributing resources within the Yosemite Lodge Historic District and would result in long-term, moderate, adverse impacts to the districts and may affect the eligibility of the Yosemite Lodge Historic District and the construction of new infrastructure (employee housing and West of Lodge Parking Area) within the historic districts would result in long-term, minor to moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Curry Village – Removal of a substantial number of contributing resources (Boys Town canvas tents) and construction of new minimal and substantial infrastructure (campground and 16 new dormitories at Huff House area) within the historic district would result in long-term, negligible to moderate, adverse impacts. Restoration of Stoneman Meadow would result in long-term, beneficial impacts to the district. Yosemite Village and Housekeeping Camp – Demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Removal of a substantial number of contributing resources at Housekeeping Camp would result in a long-term, moderate, adverse impact and may affect the eligibility of the district. The removal of non-contributing resources (temporary housing) would result in no impacts, and the relocation of a contributing resource (Residence 1) and redesign of the non-contributing Yosemite Village Day-use Parking Area would result in a long-term, negligible to minor, adverse impacts. Yosemite Lodge and Camp 4 Campgrounds – Minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, retaining the current number of lodging units would have no impact and the construction of a new parking area and employee housing within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Curry Village – Removal of a portion of contributing resources coupled with substantial new infrastructure (lodging at Boys Town and redesigned parking area at Huff House), and redesign of a contributing resource (Curry Orchard) would result in long-term, negligible to moderate, adverse impacts. Yosemite Village and Housekeeping Camp – Demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Removal of a minimal number of contributing resources at Housekeeping Camp and Residence 1 would result in long-term, minor, adverse impacts. The removal of non-contributing resources (temporary housing) would result in no impacts, and redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and minimal new infrastructure (traffic circle) within the historic district would result in a long-term, minor, adverse impact. Yosemite Lodge and Camp 4 Campgrounds – Minimal new infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, retaining the current number of lodging units would have no impact and the construction of a new parking area and employee housing within the Yosemite Valley Historic District would result in long-term, minor to moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Curry Village – Removal of a substantial number of contributing resources, coupled with substantial new infrastructure (Boys Town lodging units and employee dormitory at Huff House), and redesign of a contributing resource (Curry Orchard) within the historic district and would result in long-term, moderate to major, adverse impacts. Yosemite Village and Housekeeping Camp – Demolition of the Ahwahnee tennis courts, redesign and formalization of parking at the Ahwahnee Hotel, removal of non-contributing temporary employee housing, removal of the Concessioner Headquarters and Concessioner Garage, and repurposing of the Yosemite Valley Group Utility Building (Fort Yosemite). Individually, many of these actions would result in long-term, negligible to minor adverse impacts to the historic districts due to the removal or repurposing of contributing resources. Removal of a minimal number of contributing resources at Housekeeping Camp would result in long-term, minor, adverse impacts. The retention and rehabilitation of Residence 1 would result in no impact. Removal of non-contributing resources (temporary housing) would result in no impacts and the construction of a new infrastructure (employee housing at Lost Arrow) would result in long-term, moderate, adverse impacts. Redesign of the non-historic parking area, realignment of a section of a contributing resource (Northside Drive) and substantial new infrastructure (roundabout and pedestrian underpass) within the historic district would result in a long-term, moderate, adverse impact. Yosemite Lodge and Camp 4 Campgrounds –New infrastructure in the vicinity of the Camp 4 Historic Site and within the Yosemite Valley Historic District would result in a long-term, minor, adverse impact. Removal of employee housing, both non-contributing and contributing, would result in a long-term, negligible, adverse impact. Additionally, the construction of new infrastructure (employee housing, additional lodging units, and West of Lodge Parking Area) within the historic districts would result in long-term, moderate, adverse impacts.
Segment 3 & 4 Under this alternative, impacts on these resources would be negligible under NEPA criteria as management of resources and structures would remain the same. Overall actions in Segments 3-4 would result in a long term, local, negligible adverse impacts on historic resources.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.	Segment 3 & 4. *Impacts of Actions to Protect and Enhance River Values* Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.	Segment 3 & 4 *Impacts of Actions to Protect and Enhance River Values* Actions to improve riparian and floodplain areas in Segment 4 include the removal of non-historic and historic resources resulting in either no impacts or long-term, negligible, adverse impacts.

Segment 1 – Above Nevada Falls
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Segment 3 & 4 (cont.)	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* El Portal – Infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Construction of high-density employee housing for 405 employees and a group administrative campground in the Abbieville / Trailer Village area and would result in long-term, negligible to moderate, adverse impacts to historic properties.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* El Portal – Infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additional actions to manage visitor use and facilities values in Segments 3 and 4 under Alternative 3 would result in no impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* El Portal – Infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additionally, construction of an El Portal remote Parking Area in the Abbieville / Trailer Village area would result in long-term, moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* El Portal – Infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Additionally, construction of an El Portal remote Parking Area in the Abbieville / Trailer Village area would result in long-term, moderate, adverse impacts.	*Impacts of Actions to Manage User Capacity, Land Use, and Facilities* El Portal – Infill employee housing in El Portal within existing residential and community areas would involve the construction of substantial new infrastructure adjacent to historic properties or within a historic district and would result in long-term, moderate, adverse impacts. Construction of an El Portal Remote Parking Area and new high-density employee housing in the Abbieville / Trailer Village area and would result in long-term, moderate, adverse impacts.
16. Historic Buildings, Structures, and Cultural Landscapes (cont.)					
Segment 5,6,7, & 8 Potential impacts under this alternative would include ongoing degradation of resources from visitor and operational use; however, ongoing maintenance and rehabilitation would result in negligible impacts under NEPA criteria. Overall actions in Segments 5-8 would result in a long term, local, negligible adverse impacts on historic resources.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Wawona – Relocation of the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts. Construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction. Rehabilitation of the historic properties would result in long-term, beneficial impacts. Elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Wawona – Relocation of the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts. Construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction. Rehabilitation of the historic properties would result in long-term, beneficial impacts. Elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Wawona – Relocation of the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts. Construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction. Rehabilitation of the historic properties would result in long-term, beneficial impacts. Elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Wawona – Relocation of the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts; and, construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction. Rehabilitation of the historic properties would result in long-term, beneficial impacts. Additionally, the retention of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to the NPS Maintenance Area would result no impact to the Pioneer Yosemite History Center Historic District.	Segment 5,6,7, & 8 *Impacts of Actions to Protect and Enhance River Values* Actions improve the condition of the Wawona Historic Resources river value would result in a long-term beneficial impact. *Impacts of Actions to Manage User Capacity, Land Use, and Facilities* Wawona – Relocation of the RV dump station and connect the Wawona Campground to the existing Wastewater Treatment Plant would result in a long-term, minor, adverse impacts. Construction of the new Wawona Wildland Fire Station and rehabilitation of historic properties within the NPS Maintenance Area would result in a long-term, minor, adverse impact from new construction. Rehabilitation of the historic properties would result in long-term, beneficial impacts. Elimination of commercial day-rides at the Wawona Stables and the relocation of the public stock campground to this location and would result in the retention of a contributing resource, but elimination of the service, therefore no impact to the Pioneer Yosemite History Center Historic District would result.
Cumulative Impacts There would be no change in the treatment and management of historic buildings, structures, and cultural landscape resources. Any site-specific planning and compliance actions would be accomplished in accordance with stipulations in the park's 1999 programmatic agreement. The results of the benign neglect would contribute towards a moderate adverse cumulative effect.	Cumulative Impacts Segment 1 – The Merced Lake High Sierra Camp Historic District would no longer convey its significance. Segments 2A and 2B – The Yosemite Valley, Yosemite Village, and Camp Curry Historic Districts' significance would be retained. The Yosemite Lodge, Housekeeping Camp, and Yosemite Valley Historic Bridges Historic Districts' would no longer convey their significance. The Ahwahnee Hotel NHL would still convey its significance as one of the most significant park hotels in the United States because of its monumental rustic architectural design. Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed and other individual historic properties within El Portal and the Merced River Gorge would retain their integrity.	Cumulative Impacts Segment 1 – The Merced Lake High Sierra Camp Historic District would no longer convey its significance. Segments 2A and 2B – The Yosemite Valley, Yosemite Village, Yosemite Lodge, and Camp Curry Historic Districts' significance would be retained. The Ahwahnee Hotel NHL would still convey its significance. The Housekeeping Camp and Yosemite Valley Historic Bridges Historic Districts' would no longer convey their significance. Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed and other individual historic properties within El Portal and the Merced River Gorge would retain their integrity.	Cumulative Impacts Segment 1 – The Merced Lake High Sierra Camp Historic District would no longer convey its significance. Segments 2A and 2B – The Yosemite Valley, Yosemite Village, Yosemite Lodge, Housekeeping Camp, and Camp Curry Historic Districts' significance would be retained. The Ahwahnee Hotel NHL would still convey its significance. The Yosemite Valley Historic Bridges District would no longer convey its significance. Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed and other individual historic properties within El Portal and the Merced River Gorge would retain their integrity.	Cumulative Impacts Segment 1 – The Merced Lake High Sierra Camp Historic District would convey its significance. Segments 2A and 2B – The Yosemite Valley, Yosemite Village, Yosemite Lodge, Housekeeping Camp, Yosemite Valley Historic Bridges and Camp Curry Historic Districts' significance would be retained. The Ahwahnee Hotel NHL would still convey its significance. Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed and other individual historic properties within El Portal and the Merced River Gorge would retain their integrity.	Cumulative Impacts Segment 1 – The Merced Lake High Sierra Camp Historic District would convey its significance. Segments 2A and 2B – The Yosemite Valley, Yosemite Village, Yosemite Lodge, Housekeeping Camp, Yosemite Valley Historic Bridges and Camp Curry Historic Districts' significance would be retained. The Ahwahnee Hotel NHL would still convey its significance. Segments 3 and 4 – The significance of the Rancheria Flat Mission 66-Era Employee Housing and Infrastructure Constructed Historic District would still be conveyed and other individual historic properties within El Portal and the Merced River Gorge would retain their integrity.

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16. Historic Buildings, Structures, and Cultural Landscapes (cont.)					
Cumulative Impacts (cont.)	Segments 5, 6, 7 and 8 – No impacts would occur to the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and their significance would still be conveyed, as would the significance of the Pioneer Yosemite History Center.	Segments 5, 6, 7 and 8 – No impacts would occur to the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and their significance would still be conveyed, as would the significance of the Pioneer Yosemite History Center.	Segments 5, 6, 7 and 8 – No impacts would occur to the Wawona Hotel and Thomas Hill Studio, NHL nor the Wawona Hotel and Pavilion Historic District and their significance would still be conveyed, as would the significance of the Pioneer Yosemite History Center.	Segments 5, 6, 7 and 8 – No impacts would occur to the Wawona Hotel and Thomas Hill Studio, NHL nor to the Wawona Hotel and Pavilion Historic District and their significance would still be conveyed, as would the significance of the Pioneer Yosemite History Center.	Segments 5, 6, 7 and 8 – No impacts would occur to the Wawona Hotel and Thomas Hill Studio, NHL nor to the Wawona Hotel and Pavilion Historic District and their significance would still be conveyed, as would the significance of the Pioneer Yosemite History Center.
17. Archeological Resources					
Segment 1 Ongoing impacts would be site-specific, negligible to minor, but potentially adverse impacts. Duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, ongoing effects expected to be negligible to no adverse impact.	Segment 1 Established trails are not known to be near known archeological sites. Corresponding impacts are expected to be negligible or non-existent. In the case of newly discovered archeological sites, found during ground disturbing activities trails may affect a small percentage of a site's surface. Impacts would be correspondingly site-specific, negligible to minor, but potentially adverse impacts. Effects to specific sites are localized, and duration and type of impacts vary, depending on if the site can be avoided.	Segment 1 Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological sites Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible.	Segment 1 Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological sites Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible.	Segment 1 Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological sites Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible.	Segment 1 Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological sites Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible.
Segments 2A and 2B Under this alternative, impacts would be ongoing, site-specific and local, minor to moderate, and likely adverse across Segments 2A (East Valley) and 2B (West Valley).	Segments 2A and 2B Within Segment 2A (East Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impact may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on the known archeological sites found within the campgrounds. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impact. Ground disturbance and rerouting of the Valley Loop Trail would result in a long-term major adverse impact as this trail is itself an historic property. Removing the northern abutment of Sugar Pine Bridge would potentially result in a long-term major adverse impact to the known archeological site. General reduction in focused visitor use at areas on or near known archeological resources would potentially result in site-specific, long-term beneficial impacts. Overall reduced visitor numbers would have a negligible effect on archeological sites. Within Segment 2B, if archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on known archeological sites. Ground disturbing activities associated with removal of infrastructure and construction of a new campground and parking area may result in site-specific, short-term, minor, adverse impacts.	Segments 2A and 2B Within Segment 2A (East Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological site. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible. Within Segment 2B (West Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on known archeological sites. Ground disturbing activities associated with removal of infrastructure and construction of a new campground and parking area may result in site-specific, short-term, minor, adverse impacts.	Segments 2A and 2B Within Segment 2A (East Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed reduction of camping and limiting numbers of hikers in Segment and associated removal of infrastructure would potentially result in site-specific, long-term beneficial impacts on known archeological site. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts on known archeological sites, in cases where avoidance is not possible. Within Segment 2B (West Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on known archeological sites. Ground disturbing activities associated with removal of infrastructure and construction of a new campground and parking area may result in site-specific, short-term, minor, adverse impacts.	Segments 2A and 2B Within Segment 2A (East Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on the known archeological sites found within the campgrounds. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts. Ground disturbance and rerouting of the Valley Loop Trail would result in a long-term major adverse impact, as this trail is itself an historic property. Within Segment 2B (West Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on known archeological sites. Ground disturbing activities associated with removal of infrastructure and construction of a new campground and parking area may result in site-specific, short-term, minor, adverse impacts.	Segments 2A and 2B Within Segment 2A (East Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on the known archeological sites found within the campgrounds. Ground disturbing activities associated with removal of infrastructure and restoration of former camping areas may result in site-specific, short-term, minor, adverse impacts. Ground disturbance and rerouting of the Valley Loop Trail would result in a long-term major adverse impact, as this trail is itself an historic property. Within Segment 2B (West Valley), if previously unknown archeological sites are discovered during associated ground disturbing activities, site-specific, short-term, minor, adverse impacts may result, in cases where avoidance is not possible. Proposed removal of campsites and associated infrastructure would potentially result in localized, long-term beneficial effect on known archeological sites. Ground disturbing activities associated with removal of infrastructure and construction of a new campground and parking area may result in site-specific, short-term, minor, adverse impacts.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
Segment 3 – Merced Gorge
Segment 4 – El Portal
Segment 5 – South Fork of Merced Above Wawona
Segment 6 – Wawona Impoundment
Segment 7 - Wawona
Segment 8 – South Fork Merced River

Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
17. Archeological Resources (cont.)					
Segment 3 & 4 Ongoing impacts would be site-specific, negligible to minor, but potentially adverse impacts. Duration and type of impacts vary. For areas where proposed actions do not occur on or near known archeological sites, ongoing effects expected to be negligible to no adverse impact.	Segment 3 & 4 Removal of informal trails and infrastructure from their locations within archeological sites would result in a long-term, beneficial effect. Potential site-specific, minor to moderate, adverse impacts from the relocation of housing units and removal of conifers could result from ground-disturbing activities and concentration of uses in areas sensitive for archeological sites.	Segment 3 & 4 Removal of informal trails, abandoned infrastructure, asphalt, imported fill, and a gravel road from their locations within archeological sites would ultimately result in a long-term, beneficial impact Other ground disturbing activities in or near known archeological sites would be correspondingly site-specific, negligible to minor, but potentially adverse, if the site cannot be avoided. Impacts to specific sites are localized, and duration and type of impacts vary.	Segment 3 & 4 Removal of informal trails, abandoned infrastructure, asphalt, imported fill, and a gravel road from their locations within archeological sites would ultimately result in a long-term, beneficial impact Other ground disturbing activities in or near known archeological sites would be correspondingly site-specific, negligible to minor, but potentially adverse, if the site cannot be avoided. Impacts to specific sites are localized, and duration and type of impacts vary.	Segment 3 & 4 Removal of informal trails, abandoned infrastructure, asphalt, imported fill, and a gravel road from their locations within archeological sites would ultimately result in a long-term, beneficial impact Other ground disturbing activities in or near known archeological sites would be correspondingly site-specific, negligible to minor, but potentially adverse, if the site cannot be avoided. Impacts to specific sites are localized, and duration and type of impacts vary.	Segment 3 & 4 Removal of informal trails, abandoned infrastructure, asphalt, imported fill, and a gravel road from their locations within archeological sites would ultimately result in a long-term, beneficial impact Other ground disturbing activities in or near known archeological sites would be correspondingly site-specific, negligible to minor, but potentially adverse, if the site cannot be avoided. Impacts to specific sites are localized, and duration and type of impacts vary.
Segment 5,6,7, & 8 Impacts would be ongoing, site-specific and local, minor to moderate, and likely adverse impacts, especially within the known archeological areas, including the Wawona Archeological District, as well as several sites that are not contributors to the district.	Segment 5,6,7, & 8 Ground disturbing activities may occur in or near known archeological sites. Impacts would be site-specific, negligible to major, and potentially adverse. Impacts to specific sites are localized, and duration and type of impacts vary, in cases where avoidance is not possible. Actions to remove two stock campsites from near known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features.	Segment 5,6,7, & 8 Elimination of stables, relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. During ground disturbing activities, impacts would be site-specific, minor to moderate, and potentially adverse. Impacts to specific sites are localized, and duration and type of impacts vary, in cases where avoidance is not possible.	Segment 5,6,7, & 8 Continued use of golf course will occur in or near known archeological sites; impacts would likely be negligible as golf course fill covers the site. Elimination of stables, relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. During ground disturbing activities, impacts would be site-specific, minor to moderate, and potentially adverse. Impacts to specific sites are localized, and duration and type of impacts vary, in cases where avoidance is not possible.	Segment 5,6,7, & 8 Relocation of stock campsites and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. During ground disturbing activities, impacts would be site-specific, minor to moderate, and potentially adverse. Impacts to specific sites are localized, and duration and type of impacts vary, in cases where avoidance is not possible.	Segment 5,6,7, & 8 Elimination of stables, relocation of stock campsites, and removal of sites within the Wawona Campground may have a long-term, beneficial impact on archeological sites within and near these areas. During ground disturbing activities, impacts would be site-specific, minor to moderate, and potentially adverse. Impacts to specific sites are localized, and duration and type of impacts vary, in cases where avoidance is not possible.
Cumulative Impacts There are a number of archeological resource sites in the Merced River corridor at, or adjacent to trails, structures, utility systems, and other facilities and are subject to ongoing disturbances such as trampling, surface collection, and ground disturbance associated with facility maintenance. Any present projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.	Cumulative Impacts Actions to remove facilities near, or reroute visitors from known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features. Ground disturbance associated with projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.	Cumulative Impacts Actions to remove facilities near, or reroute visitors from known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features. Ground disturbance associated with projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.	Cumulative Impacts Actions to remove facilities near, or reroute visitors from known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features. Ground disturbance associated with projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.	Cumulative Impacts Actions to remove facilities near, or reroute visitors from known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features. Ground disturbance associated with projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.	Cumulative Impacts Actions to remove facilities near, or reroute visitors from known archeological sites would result in localized long-term, beneficial impacts by stabilizing elements of archeological features. Ground disturbance associated with projects that would result in ground disturbance and/or excavation (trail/road improvements, new facility or infrastructure development, restoration) have the potential to result in site-specific, long-term adverse impacts on known or unknown archaeological resources, when avoidance is not possible.
18. American Indian Traditional Cultural Resources					
Segment 1 Under this alternative, impacts on traditional cultural resources would be negligible. There would be no planned changes in the treatment of traditional cultural resources. Impacts on these resources would occur as a result of ongoing park operations and programs, such as facilities maintenance and repair, as well as visitor use.	Segment 1 These actions may have either a beneficial or adverse impact on traditional cultural resources, particularly areas of traditional plant use. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. If avoidance is possible, impacts will be negligible, but if avoidance is not possible, impacts may be moderate to major.	Segment 1 These actions may have either a beneficial or adverse impact on traditional cultural resources, particularly areas of traditional plant use. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. If avoidance is possible, impacts will be negligible, but if avoidance is not possible, impacts may be moderate to major.	Segment 1 These actions may have either a beneficial or adverse impact on traditional cultural resources, particularly areas of traditional plant use. As an example, construction may result in disruption of ethnobotanical species' habitats, and may be an adverse impact, while removal of informal trails may have a beneficial impact on the same plant use area. If avoidance is possible, impacts will be negligible, but if avoidance is not possible, impacts may be moderate to major.	Segment 1 No ecosystem restoration would occur in Segment 1 under this alternative, and impacts on traditional cultural resources (both beneficial and adverse) would likely be negligible.	Segment 1 No ecosystem restoration would occur in Segment 1 under this alternative, and impacts on traditional cultural resources (both beneficial and adverse) would likely be negligible.

Segment 1 – Above Nevada Falls
Segments 2A and 2B - Yosemite Valley
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Segment 7 - Wawona
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Table 9-219: Merced Wild and Scenic River Plan Alternative Summary Comparison Table

Alternative 1 No Action	Alternative 2 Self-Reliant Visitor Experiences and Extensive Floodplain Restoration	Alternative 3 Dispersed Visitor Experiences and Extensive Riverbank Restoration	Alternative 4 Resource-Based Visitor Experiences and Targeted Riverbank Restoration	Alternative 5 Enhanced Visitor Experience and Essential River Bank Restoration	Alternative 6 Diversified Visitor Experiences and Selective Riverbank Restoration
18. American Indian Traditional Cultural Resources (cont.)					
Segments 2A and 2B Under this alternative, impacts to traditional cultural resources within East and West Yosemite Valley areas would be adverse, as restoration of ethnobotanical resources would not occur, but also beneficial, as potential for adverse impacts associated with physical disturbance and access to resources during restoration activities would not occur.	Segments 2A and 2B Within Segments 2A (East Valley) and 2B (West Valley), site specific restoration actions may have long-term, beneficial impacts on meadows. Within Segment 2A (East Valley) construction activities in general, specifically at Yosemite Lodge, Yosemite Village, and Housekeeping camp may result in long term, adverse impacts to ethnohistoric sites at these locations.	Segments 2A and 2B Within Segments 2A (East Valley) and 2B (West Valley), site specific restoration actions may have long-term, beneficial impacts on meadows. Within Segment 2A (East Valley) construction activities in general, specifically at Yosemite Lodge and Housekeeping camp may result in long term, adverse impacts to ethnohistoric sites at these locations.	Segments 2A and 2B Within Segments 2A (East Valley) and 2B (West Valley), site specific restoration actions may have long-term, beneficial impacts on meadows. Within Segment 2A (East Valley), construction activities in general, specifically at Yosemite Lodge and Housekeeping camp may result in long term, adverse impacts to ethnohistoric sites at these locations.	Segments 2A and 2B Within Segments 2A (East Valley) and 2B (West Valley), site specific restoration actions may have long-term, beneficial impacts on meadows, Within Segment 2A(East Valley), construction activities in general, specifically at Yosemite Lodge and Upper Pines, may result in long term, adverse impacts to ethnohistoric sites at these locations.	Segments 2A and 2B Within Segments 2A (East Valley) and 2B (West Valley), site specific restoration actions may have long-term, beneficial impacts on meadows. Within Segment 2A(East Valley), construction activities in general, specifically at Yosemite Lodge and Housekeeping camp may result in long term, adverse impacts to ethnohistoric sites at these locations.
Segment 2 (cont.)					Within Segment 2B (West Valley), construction for the new Eagle Creek Campground and West Yosemite Valley Parking Area may result in long term, adverse impacts to ethnohistoric sites at these locations.
Segment 4 Under this alternative, impacts to traditional cultural resources would be adverse, as restoration of ethnobotanical resources would not occur, as well as beneficial, as potential for adverse impacts associated with physical disturbance and access to resources during restoration activities would not occur.	Segment 3 & 4 Site specific Actions to protect valley oaks would have a long term, beneficial impact on resources, while the construction of employee housing and administrative camping may have a long term, adverse impact.	Segment 3 & 4 Site specific Actions to protect valley oaks would have a long term, beneficial impact on resources, while the construction of employee housing may have a long term, adverse impact.	Segment 3 & 4 Site specific Actions to protect valley oaks would have a long term, beneficial impact on resources, while the construction of employee housing may have a long term, adverse impact.	Segment 3 & 4 Site specific Actions to protect valley oaks would have a long term, beneficial impact on resources, while the construction of employee housing may have a long term, adverse impact.	Segment 3 & 4 Site specific Actions to protect valley oaks would have a long term, beneficial impact on resources, while the construction of employee housing may have a long term, adverse impact.
Segment 5,6,7, & 8 No opportunities for limiting access to sensitive areas would occur in Segment 7.	Segment 5,6,7, & 8 Relocation and construction actions in the Wawona area have the potential to have a long term, adverse impact on traditional cultural resources.	Segment 5,6,7, & 8 Relocation and construction actions in the Wawona area have the potential to have a long term, adverse impact on traditional cultural resources.	Segment 5,6,7, & 8 Relocation and removal of campgrounds in the Wawona area have the potential to have a long term, adverse impact on traditional cultural resources.	Segment 5,6,7, & 8 Relocation and removal of campgrounds in the Wawona area have the potential to have a long term, adverse impact on traditional cultural resources.	Segment 5,6,7, & 8 Relocation and removal of campgrounds in the Wawona area have the potential to have a long term, adverse impact on traditional cultural resources.
Cumulative Impacts Cumulative impacts would be negligible.	Cumulative Impacts The proposed management actions associated with Alternatives 2 may have reduced or negligible impacts following consultation or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings.	Cumulative Impacts The proposed management actions associated with Alternatives 3 may have reduced or negligible impacts following consultation or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings.	Cumulative Impacts The proposed management actions associated with Alternatives 4 may have reduced or negligible impacts following consultation or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings.	Cumulative Impacts The proposed management actions associated with Alternatives 5 may have reduced or negligible impacts following consultation or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings.	Cumulative Impacts The proposed management actions associated with Alternatives 6 may have reduced or negligible impacts following consultation or beneficial impacts resulting from enhanced communities of traditionally used plants, restrictions on some kinds and amounts of visitor use, or protection or enhancement of site settings.

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10. CONSULTATION AND COORDINATION

This chapter summarizes the consultation and coordination efforts undertaken for the *Final Merced River Plan/EIS*. This plan was developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and the implementing regulations developed by the Council on Environmental Quality (CEQ), which require diligence in involving any interested or affected members of the public in the planning process (40 CFR 1508.22). The NPS has taken advantage of various opportunities for public participation that corresponded with general public outreach for the plan to accomplish public participation requirements in accordance with the National Historic Preservation Act (NHPA) for the Section 106 compliance process.

Throughout the Merced River planning process, an intensive effort was made to involve professionals from all aspects of river and park management. This plan was developed in consultation with traditionally associated American Indian tribes and groups, elected officials, other agency partners, local communities, park visitors, and private citizens, as summarized below.

MERCED RIVER PLAN PUBLIC INVOLVEMENT HISTORY

The public planning process for the *Final Merced River Plan/EIS* (*Merced River Plan/EIS*) has been robust. In an effort to give all interested parties access to the planning process for the Merced River, the NPS hosted 54 in-person public meetings and 12 interactive webinars. Opportunities to engage in the plan, dating back to 2007, included public workshops with scoping, baseline condition reports, alternatives development, and outreach materials regularly mailed and e-mailed to stakeholders. The NPS advertised the public meetings and webinars in a variety of ways, including announcements on the park's website, in electronic newsletters, social media (Facebook and Twitter) and news releases. To promote participation, the NPS mailed more than 30,000 postcards to interested parties. Fliers were also posted in gateway communities, throughout the park, and on campground bulletin boards. Locations of in-person meetings included Los Angeles, Fresno, San Francisco, Yosemite Valley, and gateway communities.

Online webinars allowed people whose schedule or geographic location might preclude them from attending in-person public meetings to engage in the planning process. The posting of recorded webinars online also extended the potential for public engagement. People who did not know about or were not able to attend the live presentations could still access the information provided. Use of social media such as FaceBook and Twitter for outreach was intended to reach a broader public, especially those without a history of involvement in the Merced River Plan.

Table 10-1 below summarizes the public meetings and webinars the NPS has hosted throughout the duration of the planning process. These public involvement efforts have helped the NPS to understand and fully consider the interests of the public during the development of the *Merced River Plan/EIS*. Table 10-2 provides an overview of the public workshops conducted to date and describes the locations and subject matter content of these workshops.

TABLE 10-1: PUBLIC MEETINGS, WEBINARS AND NUMBER OF COMMENTS RECEIVED

Public Involvement Phase	Date	Number of Public Meetings	Number of Webinars	Number of Comments Received
Public Scoping	2007 and 2009-2010	21	0	767
Outstandingly Remarkable Value (ORV) identification	2010	7	0	33
Foundational Elements and ORV Baseline Conditions	Spring 2011	5	5	6
Alternatives Development	Fall 2011	5	1	245
Draft Alternative Concepts	Spring 2012	5	2	413
ORV protection	Aug. 2012	1	0	0
Public review and comment period on the Draft Merced River Plan / EIS	January 8 to April30, 2013	10	4	29,400
	Totals:	**54**	**12**	**30,864**

TABLE 10-2: OVERVIEW OF PUBLIC WORKSHOPS

2009 Summer/Fall/Winter: Public Scoping Workshops
The NPS hosted a series of 18 public workshops during the 2009 public scoping period. These meetings occurred in park, gateway and regional communities, and in major metropolitan areas in California. Locations included Fresno, Oakhurst, Lee Vining, Yosemite Valley, Mariposa, Fresno, Groveland, El Portal, Sacramento, Berkeley, Los Angeles, and Wawona. Presentations on the scope, history, and purpose of the plan were given. Participants were asked questions about what they valued and what they wanted to see protected in the river corridor, and what, if anything, should be changed.
2010 Summer: Outstandingly Remarkable Values (ORVs) Workshops
The NPS hosted a series of seven workshops to engage the public on three main topics: (1) specific locations or features that exemplify river values that the NPS may have missed in its ORV evaluation for the river corridor, (2) observations or knowledge of the conditions that relate to these river values, (3) the best ways to protect and enhance river values. The workshops took place in Wawona, San Ramon, Fresno, Oakhurst, Yosemite Valley, Groveland, and El Portal. Paper copies of the *Draft 2010 Outstandingly Remarkable Values Report for the Merced Wild and Scenic River* were distributed at the workshops, and electronic versions were posted to Yosemite's website for public review and comment.
2011 Spring: Baseline Conditions Workshops
The NPS hosted a series of five workshops and a science forum that were simultaneously broadcast by webinar and a science forum. These workshops focused on the conditions of the river's ORVs and management considerations that a successful Merced River Plan would need to address. The workshops also included the topics of transportation and user capacity. The NPS posted the *Draft Merced Wild and Scenic River Values Baseline Conditions Report* for public review and comment.
2011 Fall: Alternatives Development Workshops
This series of five workshops provided an opportunity to solicit early public input on the options the NPS was considering to protect river values or address user capacity or land-use management for the Merced River Plan. The NPS developed a planning workbook to help the public prepare for and participate in the workshops. More than 700 paper copies of the *Fall 2011 Merced Wild and Scenic River Planning Workbook* were distributed at the workshops, and electronic versions were posted to the park's website for public review and comment. The NPS conducted workshops in Yosemite Valley, El Portal, Wawona, and San Francisco, as well as one online webinar.
2012 Spring: Preliminary Alternatives Concepts Workshops
These workshops, site visits, and webinars presented an initial range of preliminary alternative concepts for consideration by the public, stakeholders, and internal and external partners. The information provided to the public described the process for developing and refining user capacities for the Merced River corridor. A planning workbook was made available to the public on March 19, 2012, with a comment period extending through April 20, 2012. Paper copies of the *Merced Wild and Scenic River Preliminary Alternatives Concepts Workbook* were distributed at the workshops, and electronic versions were posted to Yosemite's website for public review and comment.

TABLE 10-2: OVERVIEW OF PUBLIC WORKSHOPS

2012 Summer: ORV Workshop
In August 2012, the NPS sponsored a public workshop titled "protection and enhancement of river values" to review the foundational planning materials with the public and foster discussion of user capacity, including a 2011 river-use study, in regard to the Merced River Plan. This meeting in Yosemite Valley fulfilled the requirement of the *2009 Settlement Agreement* to meet with the public between the release of the preliminary alternative concepts and the forthcoming *Final Merced River Plan/EIS*. At the meeting, user capacity subject-matter experts presented "boats, beaches, and river banks: visitor evaluations of recreation on the Merced River in Yosemite Valley" to discuss visitor-use issues with the public audience. Notes were taken and later uploaded with the full slide presentations on Yosemite's website.
Fall 2012 – Winter 2013: Draft Merced River Plan/EIS Workshops
The *Merced River Plan/DEIS* was released January 25, 2013 for a 100-day review period (which was extended through April 30, 2013). Educational web-based meetings were conducted in November and December 2012, and on-site public meetings were hosted in Yosemite Valley, El Portal, Wawona, Mariposa, Groveland, Oakhurst and San Francisco during January 2013. All meeting locations and dates were announced through social media, in local and regional newspapers, via the Yosemite electronic newsletter, and on the park's web site http://parkplanning.nps.gov/yose_mrp.

Identification of Planning Issues: Scoping and Public Workshops

Public scoping and workshops are a foundation of the public-involvement process, providing an opportunity for the public, the NPS interdisciplinary planning team, and subject-matter experts to interact. In an effort to give all interested parties access to the planning process for the Merced River Plan/EIS, the National Park Service (NPS) hosted 54 in-person public meetings and 12 interactive webinars. Each public forum reflected the most current point in the planning process and allowed the public to give feedback to the planning team. The public workshops conducted to date are described below and in Table 10-2.The NPS will facilitate an additional workshop to communicate the changes to the plan that were the result of public comment following the release of the Draft Merced River Plan/EIS.

Public Scoping

Formal internal and public scoping for the Merced River Plan/EIS was conducted in accordance with CEQ regulations related to NEPA and NHPA compliance. The NPS solicited public and agency comments for the plan during a series of public scoping periods and public workshops. The purpose of scoping is to conduct an early and open process to identify issues and concerns related to the planning process and to determine the scope of issues to be addressed in the environmental analysis. Public scoping was conducted in consultation with interested organizations and individuals. The NPS initiated a 60-day public scoping for the plan following publication of a Notice of Intent in the *Federal Register* in April 2007. The public scoping period re-opened in June 2009, per a 2008 court decision and subsequent negotiation on a new planning effort. The NPS extended the public scoping period several times and facilitated a series of workshops and meetings associated with each public scoping period. Table 10-3 describes the public scoping periods from April 2007 to February 2010. The NPS considered all comments received since 2007 as part of this current planning process.

Public comments from both the 2007 and 2009-2010 public scoping periods helped shape the focus of the draft plan. During the 2007 scoping period, the NPS received 191 public scoping responses (letters, faxes, emails, and comment forms), which included 81 form letters. During the 2009 through 2010 scoping period, the NPS received 576 response letters; 464 were unique letters and 112 were form letters. The NPS conducted 21 public scoping meetings.

TABLE 10-3: PUBLIC SCOPING COMMENT PERIODS FOR THE MERCED RIVER PLAN / EIS

Initial Public Scoping for the *Merced River Plan/EIS* – April 11, 2007
• Notice of Intent to prepare an Environmental Impact Statement (EIS) – Published on April 11, 2007, in the *Federal Register* (Vol.72,(69), page 18272). • Public scoping period – Open for 60 days, to close on June 10, 2007. • Three public meetings during the public scoping period – Mariposa on May 16, 2007; San Francisco on May 17, 2007; and Yosemite Valley on May 30, 2007. • Public response – During the 2007 scoping period, the NPS received 191 public scoping responses (letters, faxes, emails, and comment forms), including 81 form letters. • A summary of the 2007 public comments was posted on Jan. 31, 2011, to the park's website at www.nps.gov/yose/parkmgmt/mrp_documents.htm.
Public Scoping Period Re-opened – June 30, 2009
• Notice posted in the *Federal Register* (Vol. 74 (124), pages 31305-06) on June 30, 2009, announcing the opportunity to provide comments on a revised Merced River Plan, as directed in the March 27, 2008, court-issued opinion to expand the scope of the plan. The notice expressed that "all previous prior scoping comments remain under consideration." • Public scoping period – Open for 60 days, to close on Aug. 29, 2009 • Ten public meetings during the public scoping period – Oakhurst on Oct. 26, 2009; Lee Vining on Oct. 27, 2009; Yosemite Valley on Oct. 28, 2009; Mariposa on Nov. 2, 2009; Fresno on Nov. 3, 2009; Groveland on Nov. 4, 2009; Sacramento on Nov. 9, 2009; Berkley on Nov. 10, 2009; Los Angeles on Nov. 16, 2009, and Dec. 2, 2009 • First extension of the public scoping period– On Aug. 25, 2009, a notice was posted in the *Federal Register* (Vol. 74 (163) pages 42,917-18) announcing the first extension of the public scoping period, for 90 days, through Dec. 4, 2009. The notice stated, "Comments already provided in response to the June 30, 2009, Notice of Intent need not be resubmitted." • Second extension of the public scoping period – On Nov.16, 2009, the NPS issued press releases announcing a second extension of the public scoping period for 60 days. The NPS accepted scoping comments through Feb. 4, 2010. Subsequently, related public notices appeared in newspapers throughout Northern California and the Yosemite region, including in the *Sierra Star* (on Nov. 19, 2009) and the *Union Democrat* (on Nov. 23 and Nov. 30, 2009), which notified the public that the public scoping period had been extended. • On Nov. 17, 2009, the NPS sent an e-newsletter to more than 5,700 recipients stating the public scoping period would be extended through Feb. 4, 2010. Also on Nov. 17, the NPS posted information about the extension of the public scoping period prominently on the park's website. Shortly thereafter, the NPS sent 25,000 postcards to Yosemite campers informing them of the planning process that was underway and providing them with directions about how to obtain more information on the park's website. Official notice of this second extension was initiated by the park on Nov. 19, 2009. This notice appeared in the *Federal Register* on Feb. 4, 2010 (Vol. 15 (23) pages5,083). The notice stated, "Any comments already provided need not be resubmitted," indicating that comments from 2007 onwards would be considered in this planning effort. • Public response – During the 2009-2010 scoping period, the NPS received 576 public responses (letters, faxes, emails, and comment forms), including 112 form letters. • A summary of the 2009-2010 public comments was posted on Jan. 31, 2011, on the park's website.

All public scoping letters were reviewed and analyzed using the NPS' Planning, Environment and Public Comment analysis tools. Each response was carefully read, and individual ideas were assigned a code according to subject matter. A total of 4,458 discrete ideas were identified. These statements technically constitute the formal "public comments." A summary report was prepared by the NPS and posted to the web on January 31, 2011. The *2010 Merced Wild and Scenic River Comprehensive Management Plan Public Comment Summary* and all public comments are available at www.nps.gov/yose/parkmgmt/mrp_documents.htm. This scoping summary was a primary reference used by the NPS to identify the issues to consider integrating into the range of alternatives.

Public Scoping Workshops

The NPS held 18 public workshops devoted to scoping for the *Draft Merced River Plan/EIS* between July 2009 and December 2010. To promote participation, the NPS mailed more than 30,000 postcards to interested parties on the mailing list; these postcards provided a schedule of public scoping meetings and instructions for submitting comments. Public meetings were advertised in a variety of ways, including announcements on the park's website and in electronic newsletters and news releases. Fliers were also posted in gateway communities, throughout the park, and on campground bulletin boards. In addition to these meetings, public discussion regarding the *Draft Merced River Plan/EIS* took place at monthly Open Houses in Yosemite Valley and at quarterly Yosemite Gateway Partners meetings.

Internal Scoping

Internal scoping was conducted with NPS managers and staff, culturally associated American Indian tribes and groups, affected federal and state agencies, and local government entities. An interdisciplinary team, made up of Yosemite staff and subject-matter experts, provided feedback to the planning team to help identify relevant planning issues and opportunities in the Merced Wild and Scenic River corridor. The NPS interdisciplinary planning team used a rigorous process to fully evaluate and analyze public and internal scoping comments. Several documents guided the team: the public scoping summary report (in conjunction with the full text public comments); the *Merced Wild and Scenic River Values Draft Baseline Conditions Report;* and research studies were used to identify issues and opportunities to address through the Merced Wild and Scenic River planning process. This information base was augmented with the collective knowledge of subject-matter experts, park managers, contractors, scientists, and the interdisciplinary planning team.

Outstandingly Remarkable Value (ORV) Identification

In summer 2010 the NPS held 7 public workshops to identify and describe the Outstandingly Remarkable Values (ORVs). The workshops took place in Wawona, San Ramon, Fresno, Oakhurst, Yosemite Valley, Groveland, and El Portal. Paper copies of the *Draft 2010 Outstandingly Remarkable Values Report for the Merced Wild and Scenic River* were distributed at the workshops, and electronic versions were posted to Yosemite's website for public review and comment. During this unofficial comment period, the NPS received and reviewed 33 individual public comment letters. In 2011, the NPS published draft ORVs based on public comment and input from subject matter and user capacity experts.

Workshops continued with a focus on outstandingly remarkable values (ORVs) for the Merced River. The Draft 2010 Outstandingly Remarkable Values Report for the Merced Wild and Scenic River was published and feedback was solicited.

Foundational Elements and ORV Baseline Conditions

In spring of 2011, 5 public workshops and webinars on foundational aspects of the plan, including the condition of the ORVs and the science related to user capacity and transportation, were conducted. Additionally, a Draft River Values Baseline Condition Report was released for public review and comment. Six individual public comment letters were received. This workshop series was dedicated to sharing information about the current condition of river values, transportation, and user capacity. Informational presentations were followed by an open question and answer period on the topics. These workshops were

simultaneously broadcast via webinar. After the meetings, recordings were posted to https://yose.webex.com where they have been viewed and downloaded over than 300 times since posting.

Preliminary Alternatives Development

In fall 2011, the NPS offered a series of five workshops and a webinar devoted to preliminary alternatives development. This workshop and webinar series was advertised through the standard means for notifying the public about this public involvement opportunity, as well as through social media, such as Facebook and Twitter, reaching thousands of people through each post. To support this outreach effort, the *Merced Wild and Scenic River Planning Workbook* was released for public review and comment. This publication included a set of site-specific and programmatic management actions necessary to protect and enhance river values. This workshop series and workbook previewed a range of options to address management issues under consideration and solicited feedback on that range of options. The planning team also asked the public to give feedback on how these options might be combined into conceptual management alternatives. The NPS distributed more than 700 copies of the workbook, which was available for review, comment, and download on Yosemite's website, and received 245 individual correspondences from the public. Public feedback was used by the planning team during the development phase of the preliminary alternative concepts.

Draft Alternatives

During spring 2012, the *Merced Wild and Scenic River Preliminary Alternative Concepts Workbook* presented a range of management options for consideration by the public, stakeholders, and internal and external partners. During this outreach phase, the public was invited to comment on the range of preliminary alternative concepts for the Merced Wild and Scenic River Plan. The NPS distributed almost 1,000 copies of the workbook, which was available for review, comment, and download on Yosemite's website. The NPS hosted five public workshops, three site visits, and two webinars. The two webinars were also recorded and posted at https://yose.webex.com. Webinar recordings have been viewed and downloaded more than 100 times. The NPS received 413 public comment letters during this outreach phase. The NPS examined and synthesized input received through internal and public workshops, site visits, and the administrative and public review of these preliminary alternative concepts to refine the management alternatives analyzed in the *Draft Merced River Plan/EIS* released in January 2013.

ORV Workshop

In August 2012, the NPS offered a public workshop to consult with subject-matter experts and representatives from academic institutions, tribal governments, and local, state, and federal government agencies on protecting and enhancing ORVs and management of user capacity. This "Protection and Enhancement of River Values" workshop reviewed foundational planning materials with the public and fostered discussion of user capacity and visitor use, including a 2011 Merced River visitor use study. This meeting in Yosemite Valley fulfilled the requirement of the 2009 Settlement Agreement to meet with the public between the release of the preliminary alternative concepts and the forthcoming Final Merced River Plan/EIS. At the meeting, user capacity subject-matter experts presented "boats, beaches, and river banks: visitor evaluations of recreation on the Merced River in Yosemite Valley" to discuss visitor-use issues with the public audience. Notes were taken and later uploaded with the full slide presentations on Yosemite's website.

Draft Merced River Plan / EIS

All federal agencies are required to comply with the National Environmental Policy Act (NEPA) when considering actions that could affect the quality of the human environment. The CEQ regulations for implementing NEPA (40 CFR 1506) require agencies involve the public in preparing and implementing NEPA procedures. As lead federal agency under NEPA, the National Park Service was responsible for providing a period of public comment of at least 45 days on the *Draft Merced River Plan / EIS*. The release of the *Draft Merced River Plan / EIS* was published in the Federal Register, Volume 78 Issue 17, on January 25 2013. The public comment period began on January 8, 2013, and the NPS extended the review deadline to accept feedback through April 30, 2013. Public comments were received by fax and U.S. mail, and online through email and the Planning, Environment, and Public Comment (PEPC) website. The NPS received 4,098 individual unique correspondences and 25,302 form letters on the *Draft Merced River Plan / EIS*.

During this public outreach phase, the NPS hosted ten public meetings and four webinars. Educational web-based meetings were conducted in November and December 2012, and on-site public meetings were hosted in Yosemite Valley, El Portal, Wawona, Mariposa, Groveland, Oakhurst and San Francisco during January 2013. All meeting locations and dates were announced through social media, in local and regional newspapers, via the Yosemite electronic newsletter, on the park's web site http://parkplanning.nps.gov/yose_mrp and on the NPS Planning, Environment & Public Comment website (accessed through above website).

In order to communicate the essence of the plan, the NPS presented four webinars each geared to a specific topic. These briefings included a 30-minute presentation followed by interactive question-and-answer session. Recorded webinars have been uploaded to the park's web site and are available for viewing at http://www.nps.gov/yose/parkmgmt/mrp_meetings.htm.

The NPS hosted ten public meetings in various locations within the Yosemite region, and meetings in San Francisco and Los Angeles. These meetings included an open house where participants viewed displays about plan content and a presentation followed by an interactive question-and-answer session. Presentations for each public meeting have been uploaded to the park's web site and are available for viewing at http://www.nps.gov/yose/parkmgmt/mrp_meetings.htm.

Table 10-4 below provides a summary of webinars and public meetings hosted by the NPS on the *Draft Merced River Plan / EIS*.

Copies of the *Draft Merced River Plan/EIS* were distributed to members of the public that requested them, U.S. congressional delegations, state and local elected officials, federal agencies, traditionally-associated American Indian tribes and groups, organizations and local businesses, public libraries, and the news media. Plan information, including the process and timeline for public review and comment was available on the NPS Planning, Environment and Public Comment (PEPC) at http://parkplanning.nps.gov/yose_mrp or the Merced River Plan project webpage at www.nps.gov/yose/parkmgmt/mrp_documents.htm Readers were encouraged to submit comments through NPS Planning, Environment and Public Comment (PEPC) at http://parkplanning.nps.gov/yose_mrp. Alternately, comments were accepted by email to yose_planning@nps.gov or by U.S. mail.

During the comment period, 29,404 individual correspondences were received. This included 4,102 individual unique correspondences and 25,302 form letters. The NPS analyzed public comment and distilled the analysis into more than 600 distinct public concern statements. The NPS made a number of substantive changes to Alternative 5, the agency-preferred alternative, to respond to public comment. Please

TABLE 10-4: WEBINARS AND PUBLIC MEETINGS ON DRAFT MERCED RIVER PLAN / EIS

Webinars	Topic Emphasis
February 5, 2013	Preferred Alternative
February 7, 2013	River Value Protection and Enhancement
February 14, 2013	User Capacity and Visitation
February 27, 2013	Socioeconomics
Public Meetings	**Location**
February 27, 2013	Socioeconomic Workshop: Visitor Center Auditorium, Yosemite Valley
February 27, 2013	Yosemite Open House: Visitor Center Auditorium, Yosemite Valley
March 6, 2013	El Portal Public Meeting: Clark Community Hall
March 7, 2013	Mariposa Public Meeting: Government Center's Board of Supervisors Chambers
March 14, 2013	Oakhurst Public Meeting: Oakhurst Senior Center
March 15, 2013	Wawona Public Meeting: Wawona Community Center
March 20, 2013	Groveland Public Meeting: Groveland Community Hall
March 21, 2013	San Francisco Public Meeting: Fort Mason Center's Room C370
March 26, 2013	Los Angeles Public Meeting: River Center and Gardens -- Atrium of California Building
March 27, 2013	Yosemite Open House: Visitor Center Auditorium, Yosemite Valley

see Appendix P: *Public Concerns and Responses Report* for additional information. This report lists each of these concern statements, representative quotes that support these concerns, and the NPS responses to substantive comments on the *Draft Merced River Plan / EIS*. This report also describes the comment analysis methodology, including the analysis of individual comments and the development of concern statements.

Other Forums

In order to ensure that interested and affected parties were meaningfully engaged in the planning process, the NPS developed a robust public involvement program. In addition to the standard outreach activities required by NEPA, the NPS successfully engaged in a variety of other forums.

Distribution of fliers, postcards, and print materials relating to the planning process helped involve members of the public who might not otherwise be aware of the opportunity to become involved in the Merced River Plan. Online webinars allowed people whose schedule or geographic location might preclude them from attending in-person public meetings engage in the planning process. The posting of recorded webinars online also extended the life of the presentation. People who did not know about or were not able to attend the live presentations could still access to information provided at a later time. Use of social media, such as Facebook and Twitter, for outreach was intended to reach a broader public, especially those without a history of involvement in Yosemite planning issues. These other forums helped ensure low-income and minority communities that could be affected by the proposal had access to the planning process.

CONSULTATION

Traditionally-Associated American Indian Tribes and Groups

The NPS is consulting with traditionally associated American Indian tribes and groups throughout the development and implementation of the *Final Merced River Plan/EIS*. Yosemite National Park currently maintains consultation relationships with seven American Indian tribes and groups that claim traditional cultural association with park lands and resources. This includes five federally-recognized American Indian tribes (Bridgeport Paiute Indian Colony of California, Bishop Paiute Tribe, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of the Chukchansi Indians, and the Tuolumne Band of Me-Wuk Indians), and two American Indian groups (American Indian Council of Mariposa County, Inc. [also known as the Southern Sierra Miwuk Nation] and the Mono Lake Kutzadikaa). Consultation with federally-recognized American Indian tribes takes place on a government-to-government basis.

In December 2009, Yosemite requested tribal participation in development of the Merced Wild and Scenic River Plan. The NPS formally requested information from traditionally-associated American Indian tribes and groups for the protection of traditional cultural resources and historic properties with traditional cultural or religious significance. Consultation included regularly scheduled and special meetings, as well as site visits. Comments received from traditionally-associated American Indian tribes and groups have been considered throughout the planning process.

The NPS will continue to conduct formal and informal consultations with traditionally-associated American Indian tribes and groups about proposed NPS plans and actions that have the potential to affect the treatment, use, and access to cultural and natural resources with documented or potential cultural meaning for those groups. The Yosemite National Park American Indian Consultation Program facilitates regulatory compliance with the National Historic Preservation Act; the National Environmental Policy Act; the Native American Graves Protection and Repatriation Act; and other statutes, policies, and guidance related to American Indian Resources, issues, and concerns.

American Indian tribes and groups have also been central to the development of the plan-specific programmatic agreement and consultation efforts to identify measures to avoid, minimize, and mitigate adverse effects to historic properties (see Appendix I). Please refer to Appendix J*: NHPA Assessment of Adverse Effects for the Merced Wild and Scenic River Comprehensive Management Plan* for a comprehensive list of all meetings, site visits, and transmitted material for review and comment in addition to a summary of comments received from the traditionally-associated American Indian tribes and groups.

Consultation with Federal Agencies

U.S. Army Corps of Engineers

The Clean Water Act (Public Law 92-500) requires federal land agencies to consult with the U.S. Army Corps of Engineers (Army Corps) regarding wetlands in the vicinity of proposed projects. The NPS is consulting with the Army Corps regarding the *Final Merced River Plan/EIS*, wetlands delineation, and permit requirements necessary to implement proposed actions in the plan, in accordance with Section 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act.

Under Section 404 of the Clean Water Act (33 U.S.C. 1344), permit approval is required for projects that may result in the discharge of dredged or fill material into waters of the United States. This includes all navigable waters, their tributaries, impoundments of these waters, and adjacent wetlands. Examples of Section 404 activities include infrastructure development, road fills, and riprap. Some actions proposed in the *Merced River plan/EIS* may require permits for the discharge of fill material. The NPS will work with the Army Corps to obtain any required Section 404 permits prior to implementing any such action.

Under Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), permit approval is required for the placement of structures in or over, or work in or over, navigable waters of the United States which affects their course, location, condition or capacity. The U.S. Army Corps of Engineers administers Section 10 permits. The NPS will conduct all projects associated with the *Final Merced River Plan/EIS* with all Army Corps permit approvals in place. The Army Corps was provided with review copies of the *Merced River Plan/DEIS* and with a copy of this *Final Merced River Plan/EIS* as part of the consultation process.

The NPS will serve as the lead agency on behalf of the U.S. Army Corps of Engineers for consultation with the SHPO, discussed below.

NPS Water Resources Division

Two executive orders—11988 Floodplain Management and 11990 Protection of Wetlands—direct federal agencies to enhance floodplain and wetland values; to avoid development in wetlands and floodplains whenever there is a practicable alternative; and to avoid impacts associated with the occupancy or modification of floodplains or wetlands to the extent possible. The NPS Water Resources Division has engaged in reviews of both the Wetlands and Floodplain Statements of Finding which are appendices of the *Final Merced River Plan/EIS* to ensure the NPS met all obligations under these executive orders.

U.S. Fish and Wildlife Service

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.), requires all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed species or critical habitat. Ongoing consultation with the USFWS has been conducted during preparation of the *Merced River Plan/EIS*. The USFWS was provided with review copies of the *Merced River Plan/DEIS* and with a copy of this *Final Merced River Plan/EIS* as part of the consultation process.

The NPS initiated informal consultation with the USFWS on August 11, 2010. Updated special-status species lists were obtained from the USFWS on June 6, 2011, and again on April 27, June 27, and October 18, 2012. The most recent special-status species list obtained from the USFWS was obtained on October 21, 2013. The USFWS has engaged in reviews of the Biological Assessment which is an appendix of the *Final Merced River Plan/EIS* and will issue a *Biological Opinion* based on an assessment of the proposed actions in the final preferred alternative. The NPS will continue to update the list of federally endangered or threatened species every 90 days throughout project implementation and continue consultation as necessary should new species or critical habitat become listed in the project area.

U.S. Geological Survey

The expertise of the U.S. Geological Survey (USGS) was instrumental in developing a comprehensive study of rock-fall hazard and risk in Yosemite Valley, a research study commissioned to inform this planning effort and guide park management. Information from this study informed land use management decisions, specifically the placement of facilities within Yosemite Valley. The internationally peer-reviewed *Quantitative Rock-fall Hazard and Risk Assessment for Yosemite Valley, Yosemite National Park, California* report (April 2012) can be found on the park's website at http://www.nps.gov/yose/naturescience/rockfall.htm. The USGS was provided with review copies of the *Draft Merced River Plan/EIS* and with a copy of this *Final Merced River Plan/EIS* as part of the consultation process.

U.S. Forest Service

The U. S. Forest Service (USFS) manages the 29 miles of Merced Wild and Scenic River segments from the El Portal Administrative Site boundary to the northwest boundary of the Sierra National Forest under the 1991 U.S.F.S. *South Fork and Merced Wild and Scenic River Implementation Plan*. The USFS was provided with review copies of the *Merced River Plan/DEIS* and with a copy of this *Final Merced River Plan/EIS*.

U.S. Bureau of Land Management

The U.S. Bureau of Land Management (BLM) manages the 12 miles of Merced Wild and Scenic River segments from the northwest boundary of the Sierra National Forest to Lake McClure under the 1991 *Merced Wild and Scenic River Management Plan*. The BLM was provided with review copies of the *Merced River Plan/DEIS* and with a copy of this *Final Merced River Plan/EIS*, and has participated in numerous workshops and meetings throughout the planning process.

Advisory Council on Historic Preservation

The Advisory Council on Historic Preservation (ACHP) is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources and advises the President and Congress on national historic preservation policy. This agency administers the NHPA's Section 106 review process and works with federal agencies to help improve how they consider historic preservation values in their programs.

Yosemite initiated consultation with ACHP in May 2008 by notifying the agency that the park intended to prepare an environmental impact statement (EIS) for the Merced Wild and Scenic River Comprehensive Management Plan. At the time the ACHP did not indicate that they would consult on this undertaking. Through outreach efforts in 2012 it was evident that the complex set of actions in the plan would involve potential adverse effects to prominent historic properties. Responding to the evolution of complexity in the plan and the public involvement effort, in a letter dated August 28, 2012, in accordance with 36 CFR 800.2(b)(1), the ACHP formally notified the NPS that they would participate in the Section 106 review process for the Merced River Plan. Their decision to participate in this consultation is based on the *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, contained within the regulations. The criteria are met for this proposed undertaking because each of the alternatives, as stated in the ACHP August 28, 2012 letter, "may have substantial impacts on important historic properties." In addition, the case presents important questions of policy or interpretation because the NPS will need to balance potential adverse effects to historic properties with natural resource values and the requirements of the Ninth Circuit consent decree which

required the NPS to prepare this plan. The ACHP has been central to the development of the plan-specific programmatic agreement and consultation efforts to identify opportunities to avoid, minimize, and mitigate adverse effects to historic properties (see Appendix I). Please refer to Appendix J: *NHPA Assessment of Adverse Effects for the Merced Wild and Scenic River Comprehensive Management Plan* for a comprehensive list of all meetings, site visits, and transmitted material for review and comment in addition to a summary of comments received from the ACHP.

To comply with Section 106 under the standard four-step process outlined in 36 CFR Part 800, the park is working with ACHP, SHPO, and other Consulting Parties to develop a programmatic agreement regarding the implementation of the Merced River Plan. For further detail on the Section 106 process, including consultation with the ACHP, please see Appendix J: *National Historic Preservation Act Assessment of Adverse Effects*.

Consultation with State Agencies

California State Historic Preservation Officer

The California State Office of Historic Preservation is responsible for administering federal- and state-mandated historic preservation programs to protect California's irreplaceable archeological and historical resources. Consultation takes place under the direction of the State Historic Preservation Officer (SHPO), a gubernatorial appointee. In June 2007, the NPS initiated consultation with the SHPO by notifying the agency that the park intended to prepare an environmental impact statement (EIS) for the Merced Wild and Scenic River Comprehensive Management Plan. This initial consultation was under the terms of the *1999 Programmatic Agreement among the National Park Service at Yosemite, the California State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (ACHP) Regarding Planning, Design, Construction, Operations, and Maintenance, Yosemite National Park, California* (1999 PA). Further consultation with the SHPO in June, July, and August of 2012, determined that the standard four-step process outlined in 36 CFR Part 800 would be a more appropriate consultation process for this complex planning effort, in addition to a 2014 sunset date for the 1999 PA. The SHPO has been central to the development of the plan-specific programmatic agreement and consultation efforts to identify opportunities to avoid, minimize, and mitigate adverse effects to historic properties (see Appendix I). Please refer to Appendix J: *NHPA Assessment of Adverse Effects for the Merced Wild and Scenic River Comprehensive Management Plan* for a comprehensive list of all meetings, site visits, and transmitted material for review and comment in addition to a summary of comments received from the SHPO.

Yosemite met with the SHPO on June 13, 2012, to discuss the planning effort, ORVs, and potential properties affected. On July 11, 2012, the SHPO visited the park and select historic properties potentially affected by the plan. The SHPO requested that consultation regarding the undertaking occur per the standard four-step process outlined in 36 CFR Part 800. In August 2012, the park agreed that consultation under the standard four-step process would provide a more deliberative vehicle to address the plan's Section 106 compliance. To comply with Section 106 under the standard four-step process outlined in 36 CFR Part 800, the park is working with ACHP, SHPO, and other Consulting Parties to develop a programmatic agreement regarding the implementation of the Merced River Plan. For further detail on the Section 106 process, including consultation with the SHPO, please see Appendix J: National Historic Preservation Act Assessment of Adverse Effects.

The NPS will serve as the lead agency on behalf of the U.S. Army Corps of Engineers for consultation with the SHPO.

State Water Resources Control Board and Central Valley Regional Water Quality Control Boards

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are the regulatory boards within California's Environmental Protection Agency that derive their authority from Section 401 of the Clean Water Act and Section 13020 of the California Water Code.

SWRCB allocates rights to the use of surface water and, along with nine regional boards, is charged with protecting surface, ground, and coastal waters throughout the state. The RWQCB issues permits that govern and restrict the amount of pollutants discharged into the ground or surface water, which includes regulating storm water during construction activities.

Under the Clean Water Act's Section 401, every applicant for a federal permit or license for any activity that may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with state water quality standards, if an activity would result in a discharge to a water body.

Yosemite is under the jurisdiction of regional board 5, Central Valley, and therefore consults with and obtains necessary permits and/or certifications for construction activities from that board. If required, the NPS will obtain all required permits issued by the RWQCB, file appropriate notifications, and prepare Storm Water Pollution Prevention Plans in advance of any construction activities.

Local Governments

Gateway Communities

Local governments, gateway and neighboring communities have been extensively involved throughout the iterative phases of planning and public outreach for the Merced River Plan/EIS. Stakeholders from gateway communities have been invited to public planning workshops, and Yosemite has attended quarterly Yosemite Gateway Partners meetings throughout the planning process. Official representatives from county boards of supervisors and other local government representatives have attended public and internal meetings and workshops related to the plan and have provided comment during various phases of the planning process.

The Yosemite National Park superintendent, planning division chief, project managers, planners, and representatives from the Superintendent's Office of Public Involvement and Outreach also presented updates on the plan at gateway planning commission meetings, boards of supervisors meetings, and meetings of various community organizations interested in the planning effort.

Park Communities

There are two park communities, El Portal and Wawona, located within the Merced Wild and Scenic River corridor for which the park shares jurisdictional authority with the State of California. The NPS has concurrent civil jurisdiction in Wawona and proprietary jurisdiction in the El Portal Administrative Site.

El Portal

The El Portal Town Planning Advisory Committee (EPTPAC) acts as an advisory body to the Mariposa County Planning Commission for the purpose of providing community input to the NPS on planning issues in the El Portal Administrative Site. The EPTPAC meets regularly with representatives from the Superintendent's Office and has participated in many of the public meetings, webinars, and comment periods during the planning process for the Merced River Plan.

Wawona

The Wawona Town Planning Advisory Committee (WTPAC) acts as an advisory body to the Mariposa County Planning Commission for the purpose of developing a specific plan for the Wawona Community Planning Area. The WTPAC meets regularly with representatives from the Superintendent's Office and has participated in many of the public meetings, webinars, and comment periods during the planning process for the Merced River Plan. In January 2012, the Wawona Town Area Plan was jointly adopted by the Mariposa County Board of Supervisors and the NPS. This specific plan regulates all of the privately owned land within Section 35, Township 4 South, Range 21 East, Mount Diablo Base and Meridian, much of which is within the Merced Wild and Scenic River corridor.

Other Organization and Subject-matter Expert Consultation

Informational meetings with stakeholder groups and organizations have been conducted throughout the planning process as part of the park's commitment to a robust public involvement process. A selection of relevant cooperative mechanisms is summarized below.

Yosemite Area Regional Transportation System: The NPS has entered into a formal agreement with the Yosemite Area Regional Transportation System (YARTS) Joint Powers Authority. The NPS administers an agreement with YARTS for regional transportation services to and through Yosemite, including services along the Highway 140 / El Portal Road in the Merced River corridor. Representatives of YARTS were included on the project's mailing list, participated in relevant public meetings and were sent hard copies of public review documents.

National Trust for Historic Preservation

Chartered by Congress in 1949, the National Trust for Historic Preservation (NTHP) is now a privately-funded nonprofit organization that works to acquire and administer historic places, provide education and outreach, and support direct action to identify and save threatened historic places throughout the United States. On August 27, 2012,in response to the NTHP request, the NPS invited the NTHP to participate in the Merced river planning process as a consulting party in accordance with 36 CFR Part 800.3(f). The NTHP was included on the project's mailing list, participated in various consultation meetings and site visits in 2012 and 2013, and was sent hard copies of public review documents and notification of public involvement opportunities. The NTHP has also been instrumental in the development of the plan-specific programmatic agreement and consultation efforts to identify opportunities to avoid, minimize, and mitigate adverse effects to historic properties. For further detail on the Section 106 process, including consultation with the NTHP, please sees Appendix J: *National Historic Preservation Act Assessment of Adverse Effects*.

Historic Bridge Foundation

The Historic Bridge Foundation is a nonprofit organization that advocates for the preservation of historic bridges in the United States by sharing information, supporting education, participating in consultation with public officials to devise reasonable alternatives to demolishing or adversely affecting historic bridges. On August 23, 2012, the NPS accepted the Historic Bridge Foundation (HBF) request to serve as a consulting party in the Section 106 process for the *Draft Merced River Plan/EIS*. The HBF has been included on the project's mailing list, participated in various consultation meetings in 2012 and 2013, and were sent hard copies of public review documents and notification of public involvement opportunities. The HBF has also been instrumental in the development of the plan-specific programmatic agreement and consultation efforts to identify measures to avoid, minimize, and mitigate adverse effects to historic properties.

Other Subject-matter Expert Consultation

Pursuant to the *2009 Settlement Agreement*, subject-matter experts in the field of user capacity have been engaged throughout the planning process. These experts were engaged as consultants at the beginning of the planning process in October 2009. Experts worked directly with the NPS to define ORVs; identify planning issues and constraints; address user capacity and visitor use management; develop preliminary alternative concepts; develop draft alternatives and final alternatives; evaluate the impacts of alternatives; and participate in dispute resolution discussions as outlined in the 2009 Settlement Agreement stipulations. These subject-matter experts gave presentations and answered questions at public planning workshops in 2011 and 2012, and participated in public meetings on the *Draft Merced River Plan/EIS* in 2013.

PUBLIC RELEASE OF THE 'FINAL MERCED RIVER PLAN/EIS'

Copies of the Final Merced River Plan/EIS are being distributed to those that have requested them, as well as to U.S. congressional delegations, state and local elected officials, federal agencies, traditionally associated American Indian tribes and groups, organizations and local businesses, public libraries, and the news media. Plan information and next steps in the process can be obtained on the NPS Planning, Environment and Public Comment (PEPC) at http://parkplanning.nps.gov/yose_mrp or the Merced River Plan project webpage at www.nps.gov/yose/parkmgmt/mrp_documents.htm.

Agencies, Organizations, and Businesses Receiving the 'Final Merced River Plan / EIS'

U.S. Government

Members of Congress

- Senator Barbara Boxer
- Senator Diane Feinstein
- Representative Tom McClintock, U.S. House of Representatives, 4th District

Federal Agencies

Advisory Council on Historic Preservation

U.S. Department of Agriculture, Forest Service

- Inyo National Forest
- Sierra National Forest
- Stanislaus National Forest
- Region 5

U.S. Department of Defense

- Army Corps of Engineers, Regulatory Board

U.S. Department of Health and Human Services

- U.S. Public Health Service

U.S. Department of the Interior

- Bureau of Land Management, Folsom, California, Office
- Bureau of Reclamation, Sacramento Office
- Fish and Wildlife Service, Sacramento Regional Office
- Interagency Wild and Scenic Rivers Coordinating Council
- National Park Service
  - Air Resources Division
  - Conservation Study Institute
  - Denver Service Center
  - Geologic Resources Division
  - Office of Legislative and Congressional Affairs
  - Pacific West Regional Office
  - Washington Office
  - Water Resources Division
  - Wild and Scenic River Steering Council
  - National Parks
    - Sequoia and Kings Canyon National Parks
    - Devils Postpile
    - Inventory & Monitoring (I&M) Sierra Nevada Network
- U.S. Department of the Interior Library
- U.S. Geological Survey
  - USGS Publications Department
  - Water Resources Division, Western Region

U.S. Department of Justice

U.S. Department of Transportation, Federal Highway Administration, Sacramento

U.S. Environmental Protection Agency, San Francisco Regional Office

American Indian Tribes and Groups

- American Indian Council of Mariposa County, Inc.
- Bishop Paiute Tribe
- Bridgeport Paiute Indian Colony
- Mono Lake Kutzadika[a] Tribe
- North Fork Rancheria of Mono Indians of California
- Picayune Rancheria of the Chukchansi Indians
- Tuolumne Band of Me-Wuk Indians

California State Government

State Representatives

- Senator Tom Berryhill, California State Senate
- Representative Frank Bigelow, California State Assembly

State Agencies and Organizations

- California Air Resources Board
- Caltrans District 10
- Caltrans Planning
- California Department of Conservation
- California Department of Fish and Game Region # 4 (Central)
- California Department of Housing and Community Development
- California Native American Heritage Commission
- California Office of Historic Preservation
- California Regional Water Quality Control Board # 5F (Central Valley)
- California Resources Agency
- California Department of Water Resources
- Sierra Nevada Conservancy

County and Local Governments

Fresno County

- Council of Fresno County Governments
- Fresno County City Planning Department
- Fresno County Planning and Resource Management

Tuolumne County

- Board of Supervisors
- Community and Resources Agency
- Tuolumne County Planning Commission

Inyo County

- Board of Supervisors
- Planning Department

Madera County

- Board of Supervisors
- Planning Division

Mariposa County

- Board of Supervisors
- Planning Department
- El Portal Town Plan Advisory Committee
- Wawona Town Planning Advisory Committee

Merced County

- Association of Governments
- Board of Supervisors
- Planning Commission
- Planning Department Office

Mono County

- Board of Supervisors
- Community Development Department, Planning
- Eastern Sierra Council of Governments

San Joaquin County

- San Joaquin County Council of Governments
- Air Pollution Control District
- Community Development Department

Stanislaus County

- Environmental Review Committee
- Planning and Community Government
- Stanislaus Council of Government

Tuolumne County

- Board of Supervisors
- Department of Public Works
- Planning Commission

Visitor Bureaus and Visitor Centers

- Yosemite / Mariposa County Tourism Bureau, Mariposa

- Mariposa County Visitors Center (Chamber of Commerce), Mariposa
- Yosemite Sierra Visitors Bureau, Oakhurst
- Oakhurst Area Chamber of Commerce, Oakhurst
- Bass Lake Chamber of Commerce, Bass Lake
- North Fork Chamber of Commerce, North Fork
- Coarsegold Chamber of Commerce, Coarsegold
- Merced Visitor Services / California Welcome Center, Merced
- Tuolumne County Visitors Bureau, Sonora
- Yosemite Chamber of Commerce, Groveland
- Mono Lake Committee Information Center and Bookstore, Lee Vining
- Mono Basin National Forest Scenic Area Visitor Center, Lee Vining
- Lee Vining Chamber of Commerce, Lee Vining
- Mono County Tourism and Film Commission, Mammoth Lakes
- Mammoth Lakes Welcome Center, Mammoth Lakes
- Bridgeport Chamber of Commerce, Bridgeport
- Northern Mono Chamber of Commerce, Topaz

Organizations and Businesses

- Access Fund
- American Alpine Club
- American Hiking Society
- American Whitewater
- Ansel Adams Gallery
- AT&T
- Backcountry Horsemen of California
- Bassett Memorial Library
- California Bicycle Coalition
- California Native Plant Society, Sequoia Chapter
- California Preservation Foundation
- California Trout, Sierra Nevada Office
- California Wilderness Coalition
- Californians for Western Wilderness
- Central Sierra Environmental Resource Center
- Cycle California! Magazine
- Earth Island Institute
- David Evans & Associates, Inc.
- Delaware North Corporation
- Earth Island Institute
- Earthjustice Legal Defense Fund
- El Portal Market
- Environment Now
- Environmental Defense Fund
- Foothill Conservancy
- Foothill Resources
- Friends of the Earth
- Friends of the River
- Friends of Yosemite Valley
- High Sierra Hikers Association
- Historic Bridge Foundation
- LSC Transportation Consultants, Inc.
- Mammoth Mountain Resort
- Mariposans for the Environment and Responsible Government
- MIG
- Mountain Light Photography
- National Audubon Society
- National Parks and Conservation Association
- Native Habitats
- Natural Resources Defense Council
- NatureBridge Yosemite
- Northcoast Environmental Center
- National Tour Association
- National Trust for Historic Preservation
- Pacific Legal Foundation
- Planning and Conservation League
- Royal Robbins, Inc.

- Service Employees International Union Local 535
- Sierra Club
- National Office
- Toiyabe Chapter
- Tehipite Chapter
- Earthjustice Legal Defense Fund
- Sierra Foothill Conservancy
- Sierra Railroad Company
- Sierra Telephone
- Southern Yosemite Mountain Guides
- Southern Yosemite Visitor's Bureau
- The Nature Conservancy
- The Redwoods in Yosemite
- The Trust for Public Land
- The Wilderness Society
- Tioga Lodge
- Tuolumne River Trust
- Upper Merced River Watershed Council
- Wawona Area Properties Owners Association
- Wild Wilderness
- Wildlands Center for Preventing Roads
- Wilderness Watch
- Yosemite Area Audubon
- Yosemite Area Regional Transportation System
- Yosemite Conservancy
- Yosemite Bug Hostel
- Yosemite Valley Campers Coalition
- Yosemite Sightseeing Tours
- Yosemite West Community Planning Advisory Committee

Libraries

- Mariposa County Library, El Portal
- Mariposa County Library, Wawona
- Mariposa County Library
- Fresno County Library
- Madera County Library
- Merced County Library
- Oakhurst
- San Francisco City, Main Branch
- Stanislaus County Library
- Los Angeles City, Central Branch
- Tuolumne County Library, Groveland
- Tuolumne County Library, Sonora
- Yosemite National Park Research Library
- U.S. Department of the Interior Library

Public Media

The following public media outlets were sent a copy of the *Merced River Plan/FEIS*:

Newspapers

- Fresno Bee
- Los Angeles Times
- Mariposa Gazette
- Merced Sun-Star
- Modesto Bee
- Sierra Star
- Sacramento Bee
- San Francisco Chronicle
- Sonora Union Democrat

Television Stations

- KCRA NBC 3 - Sacramento
- KGO-TV ABC 7 – San Francisco
- KMPH Fox 26 – Fresno
- KNBC 4 NBC– Burbank / Los Angeles
- KQED 9 Public TV – San Francisco
- KOVR 13 CBS - Sacramento
- KRON 4 MyNetworkTV – San Francisco
- KTVU 2 Cox – Oakland
- KXTV 10 ABC – Sacramento

Radio Stations

- KCBS AM/FM – San Francisco
- KFBK AM/FM– Sacramento
- KFIV (K-Five) AM – Modesto
- KGO AM – San Francisco
- KMJ AM/FM – Fresno
- KQED FM NPR – San Francisco
- KUHL AM – Santa Maria
- KZSQ FM - Sonora
- KVML AM - Sonora
- KKBN FM - Sonora
- KXJZ FM Capital Public Radio – Sacramento

Colleges and Universities

- Cooperative Ecosystem Studies Units (CESU) Network
- California State University Fresno
- California State University Sacramento
- California State University Sonoma
- California State University Stanislaus
- Columbia College
- Merced College
- Stanford University
- University of California at Berkeley
- University of California at Davis
- University of California at Los Angeles
- University of California at Merced
- University of California Water Resources Center Archives

The names of individuals that received a copy of the *Final Merced River Plan/EIS* are available upon request.

The List of Preparers can be found separately as Chapter 11.

The NPS response to public comments on the *Merced River Plan/DEIS* is included as a separate appendix, Appendix P: *Public Concerns and Responses Report*, due to its length and complexity.

As required, full copies of any federal, state, or local agency or tribal letters are included on the following pages.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

4/4/13 DLN

☐ Action ☐ FYI
Assigned: Planning/Compliance
Due Date:

MAR 2 9 2013

Don L. Neubacher, Superintendent
P.O. Box 577
Yosemite, CA 95389
ATTN: Merced River Plan/DEIS

Subject: Draft Environmental Impact Statement for the Merced Wild and Scenic River Draft Comprehensive Management Plan Project; Yosemite National Park, California. (CEQ# 20130005)

Dear Mr. Neubacher:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Merced Wild and Scenic River Draft Comprehensive Management Plan Project (Project), Yosemite National Park, California. Our review is provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act.

Based on our review of the DEIS, we have rated the Preferred Alternative 5 as LO -- Lack of Objections (see enclosed EPA Rating Definitions). The EPA appreciates the National Park Service's (NPS) commitment to protect and enhance the 81 miles of the Merced River within Yosemite National Park. The DEIS articulates well the difficult decisions involved in comprehensive planning to protect the river's free-flowing condition, water quality, and the outstandingly remarkable values that make it worthy of Wild and Scenic River designation. We commend the NPS for the thorough description, in the DEIS, of the possible effects of climate change in regard to the regional hydrologic setting, overall ecosystem resilience, and need for adaptation to climate change.

As my staff discussed with your team in a phone conversation on March 5, 2013, we recommend that the Final Environmental Impact Statement (FEIS) include some edits and additional analysis in the Air Quality section. These are described in the enclosed Detailed Comments.

EPA appreciates the communication between our offices and the opportunity to review this DEIS. When the FEIS is released, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or have your staff contact James Munson, the lead reviewer for this project. James can be reached at (415) 972-3852 or Munson.James@epa.gov. For questions regarding air issues, please have your staff contact Dawn Richmond at (415) 972-3097 or Richmond.Dawn@epamail.epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Enclosures: Summary of the EPA Rating System
Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

Category "1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category "2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category "3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

EPA'S DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE MERCED WILD AND SCENIC RIVER DRAFT COMPREHENSIVE MANAGEMENT PLAN PROJECT; YOSEMITE NATIONAL PARK, MARIPOSA, MADERA COUNTIES, CA (CEQ# 20130005).

The Air Quality section includes some errors and omissions that should be corrected in the Final Environmental Impact Statement (FEIS). EPA recommends that the FEIS include the following additions/edits to the Air Quality section:

- All direct and indirect emissions from both the construction and operational phases of the project should be quantitatively evaluated and compared to de minimis levels for general conformity purposes.

- The document states: "The general conformity rule is currently undergoing revision." The FEIS should be updated to reflect that the rule was revised on 4/5/10.

- Page 9-700 of the general conformity description section incorrectly states that nitrogen oxides (NOx) thresholds are 100 tons per year. This should be updated to reflect that NOx thresholds in the project area are currently 50 tons per year.

- The FEIS should be updated to reflect that Madera County is designated attainment/maintenance for PM10, which has a de minimis level of 100 tons per year.

- Page 9-6708 suggests that increased emissions from traffic would be off-set by improvements to vehicle emissions. The FEIS should expand on this assumption and explain why "exhaust emissions would remain approximately the same." If the National Park Service is planning an electric and or hybrid vehicle visitor discount, the document should clearly state these plans and describe the anticipated benefits to air quality.

- Pages 9-6710 -- 6711 state that Segment 2 could exceed federal standards due to campfires. The FEIS should include mitigation measures to reduce these impacts.

- Chapter 9 and Appendix G of the document should be expanded to include timber harvest and pre-treatment equipment emissions and mitigation measures such as:

  Mobile and Stationary Source Controls:
  - Reduce use, trips, and unnecessary idling from heavy equipment.
  - Maintain and tune engines per manufacturer's specifications to perform at California Air Resources Board (CARB) and/or EPA certification, where applicable, levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. CARB has a number of mobile source anti-idling requirements. See their website at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
  - Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations

- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. In general, only Tier 3 or newer engines should be employed in the construction phase.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable, to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and incorporate these reductions into the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction, and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuels such as natural gas and electric.
- Develop construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

PEPC Project ID: 18982, DocumentID: 50778
Correspondence: 3118

Author Information

Keep Private:	No
Name:	Byng Hunt
Organization:	Mono County Board of Supervisors
Organization Type:	I - Unaffiliated Individual
Address:	PO Box 517 Bridgeport, CA 93517 Bridgeport, CA 93517 USA
E-mail:	bhunt@mono.ca.gov

Correspondence Information

Status: New	Park Correspondence Log:
Date Sent: 04/25/2013	Date Received: 04/25/2013
Number of Signatures: 1	Form Letter: No
Contains Request(s): No	Type: Web Form
Notes:	

Correspondence Text

April 16, 2013

Superintendent Don Neubacher
Yosemite National Park
Attn: Merced River Plan
PO Box 577
Yosemite, CA 95389

Dear Superintendent Neubacher,

The Mono County Board of Supervisors appreciates your invitation to comment on the Merced Wild and Scenic River Comprehensive Management Plan and Environmental Impact Statement. Yosemite National Park is a vital part of our county's economic well-being and the Board is committed to working collaboratively with you, your staff and the National Park Service to enhance the visitor experience in the park.

As you are well aware, Yosemite National Park is one of the primary attractions and destinations for visitors to Mono County, with roughly 25% of our visitors traveling to and from the park by way of Tioga Pass. The visitor experience in Yosemite is of critical concern to our tourism partners and county stakeholders as the quality of the park experience impacts both new and repeat visitation, and thus the health of tourism in the Eastern Sierra. The following comments reflect Mono County policy which

promotes maximum access to Yosemite for the public with reasonable restrictions, as well as feedback from the Mono County Tourism Commission, Local Transportation Commission, and local residents.

The Board is in full support of certain elements of the preferred Alternative 5 for the Merced River Plan, specifically the positive improvements to meadow restoration, traffic circulation, parking, pedestrian mobility and the increased campsite inventory.

However, the Board strongly opposes the elimination of existing visitor amenities and services in the Valley, as proposed, including the removal of bike rentals, raft rentals, horseback riding day trips, the ice rink in Curry Village, and the removal of the swimming pools at the Yosemite Lodge and the Ahwahnee hotels. These amenities and services do not pose a threat to the environment; bicycle rentals and raft rentals, in fact, encourage visitors to park their cars and enjoy the Valley in a non-motorized way which contributes positively to environmental impact goals. The elimination of horseback day rides negatively impacts visitor diversity as it eliminates back-country access for a segment of the visitor population, particularly families and individuals with mobility issues. Removing these visitor services also creates a potential negative impact on "generational" travel to the park ? travel decisions inspired by a traditional Yosemite activity in which families and visitors have returned to participate for generations.

The Board wishes to emphasize the need for these visitor amenities to continue to be available and accessible in the Valley, as these amenities serve to maximize the enjoyment and access of the park for the public, thereby increasing visitor motivation to return or to stay longer.

In conclusion, the Mono County Board of Supervisors would like to express its support for the proposals in preferred Alternative 5 which are designed to improve traffic flow and circulation and to ease congestion in the Valley. However, the Board does not support the removal of the existing guest activities, amenities and services that enhance the visitor experience in the park and therefore in the Eastern Sierra. Elimination of experiential visitor services and attractions reduces the motivation for people to stay longer in the region and/or to return at another time to take part in these activities. The Board respectfully requests that the Merced River Plan preferred alternative be modified to retain the existing visitor services and activities.

The Mono County Board of Supervisors appreciates the opportunity to provide these comments at this time, and commends Park staff for traveling to Mono County for the recent public scoping session. Thank you for your favorable consideration of these comments in the Merced Wild and Scenic River Comprehensive Management Plan and Environmental Impact Statement.

Respectfully,

Byng Hunt, Chairman
Mono County Board of Supervisors

TUOLUMNE ME-WUK TRIBAL COUNCIL
Post Office Box 699
TUOLUMNE, CALIFORNIA 95379
Telephone (209) 928-5300
Fax (209) 928-1677

April 8, 2013

Don Neubacher
Yosemite National park
P.O. Box 577
Yosemite, CA 95389

Dear Mr. Neubacher,

Subject: Merced River Plan Comments

As you know the tribes have taken several field visits to areas of the Merced River Plan to actually look at the land and to hear what exactly is planned for those areas. The area of the biggest controversy is the proposed pedestrian underpass. This underpass would take up so much room and do so many disturbances to the prehistoric and natural resources located in this area. There has to be another feasible way to get the pedestrians from one side of the road to another. It was suggested that you put in a stop light, even a temporary one for the busy summer months. Or move the bus loading and unloading across the street where the shuttle stop already is. If the people were dropped off on that side of the road there would be no need for them to cross. This would at least reduce the number of people crossing. It was even suggested that you moved the road to behind the Yosemite Lodge; but you had a lot of reasons why that could not happen. I understand that you are trying to relieve some of the congestion with the cars but the logical thing would be to regulate the amount of cars.

The tribe is against the pedestrian underpass period! We hate this idea and feel there has to be a better solution. But we also know that the underpass will most likely go in regardless of what the tribes want, or our reasons for not wanting it to go there. It seems like the Park Service is putting the visitor experience over cultural resource protection. If the underpass "must" go in, at least move it to someplace where it will not impact resources. This is a very large prehistoric Indian village site. The site has a very deep deposit with the most intense occupation over 2,000 years ago. Section 106 says the first option should be "avoidance". It appears that avoidance was never considered when this project was developed. Otherwise this location would have been removed from the beginning. A lot more testing should be done to figure out the site boundaries. Usually when there are sites located very near each other, it turns out that they are really one large site and not a bunch of individual small sites. The Tribes feel that putting this underpass in this location would be very disrespectful.

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We have been so busy studying other areas of the Merced River Plan that we have not actually had a site visit to the round-a-bout location to see how much damage would be done to the resources located there. We do know that the diameter of the round-a-bout is 60-feet which mean quite a number of very old mature trees will be removed. You can replant more trees but it would take 5 generations for those trees to mature to the size of the ones you are planning to remove. It would seem you could incorporate the larger mature trees into the plan and not remove them.
The conceptual drawings show you are proposing to re-route Northside Drive around the parking lot. When we suggested re-routing Northside Drive to go behind Yosemite Lodge you told us that there was no way that would happen. Why can it happen in one area but not another? Northside Drive behind Yosemite Lodge would consist of extending the road that is already there. This would mean you would not need the underpass. If you re-routed Northside Drive in the day use parking area and around Yosemite Lodge you would be accomplishing the same thing in both locations. The pedestrians would be on the north side of the road, away from traffic.
The parking lot across from the Camp 4 area would be a good idea as the area is already very disturbed. Again if Northside Drive was re-routed behind Yosemite Lodge, this parking lot would also be on the north side of the road, where you want the pedestrians. The tribes request that the Park Service save as many trees as possible incorporating them into this parking lot plan. It is better to use an area already disturbed then to tear up something else. There is a restroom located across the street people could use without having to put in another one. Water is a precious commodity and the less we can use the better off everyone is going to be.

We have recently visited the Wawona area. We agree that moving the maintenance station and storage away from the river is a good thing. The gas tanks there should also be removed. This is a large prehistoric site and to restore the area would be the right thing to do. Although we do think some testing needs be done to find out exactly where the site boundaries really are before deciding where the new Fire Station and other buildings should be located. Since the Fire Station is going to be built in 2014, the testing needs to be done immediately to find a proper location that will not impact resources anymore then they already have been. There is a lot of work being proposed for the area near the store. This is another area where more testing needs to be done prior to finalizing these plans.

In Appendix J, it states that "Consultation with American Indian tribes and groups is ongoing and may result in solutions that improve conditions of important places and practices". This can not be accomplished by destroying culturally sensitive areas. The

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tribe would like a Native American Monitor to be on site when ground disturbing activities are located near pre-historic sites.
Some of the tribal members that attended these field visits have expressed the feeling that our comments are not going to be considered or incorporated in the Merced River Plan. These tribal members feel that the Park Service already has their mind made up about these proposed actions and asking for our comments is just a formality. We sincerely hope this is not the case.

We want to thank you for allowing your staff to meet in the field with us to answer of our questions. We look forward to working with you on this and other projects happening in Yosemite.

With Respect,

Kevin Day
Chairman

TUOLUMNE ME-WUK TRIBAL COUNCIL

Post Office Box 699

TUOLUMNE, CALIFORNIA 95379

Telephone (209) 928-5300

Fax (209) 928-1677

30 April 30, 2013

Don L. Neubacher, Superintendent
Yosemite National Park
P. O. Box 577
Yosemite, CA 95389

RE: Merced River Plan/DEIS

Dear Superintendent,

I am responding to the above referenced, as the Governmental Affairs Specialist for the Tribe. I am aware the Tribe has responded in another letter, but I will be addressing the document. I have reviewed and have to agree that Alternative 5 is in the best interest of this significant area.

For and foremost Yosemite National Park has been impacted for many years, not only from construction of the park, but by public use. Another important factor is the health and well-being of natives and non-natives and the land. I believe that Alternative 5 will address issues that have been long standing and the imperative need to address these issues. The mitigation addressing each segment is a well thought-out plan and addresses proposed solutions to direct and indirect effects. We live in a world of comprises and the Tribe is willing to address solutions through consultation.

I must commend Yosemite National Park for their concerted effort put into this document and all the consideration addressing impacts resulting from a plan of this magnitude that will have short and long term effects, but once again I would like to stress that in the long term it's a good plan.

If I can be of further assistance, please feel free to contact me.

Sincerely,

Reba Fuller
Governmental Affairs Specialist

Cc: Kevin Day, Tribal Chair

Mariposa County
Board of Supervisors

District 1 ..... LEE STETSON
District 2 ..... MERLIN JONES
District 3 ..... JANET BIBBY
District 4 ..... KEVIN CANN
District 5 ..... JOHN CARRIER

RICHARD J. BENSON
County Administrative Officer

RENÉ LAROCHE
Clerk of the Board

P. O. Box 784
Mariposa, CA 95338
(209) 966-3222
(800) 736-1252
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www.mariposacounty.org/board

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SUPERINTENDENT'S OFFICE
YOSEMITE NATIONAL PARK

April 16, 2013

MRP-DEIS-2956
4/22/2013
CS

Mr. Don L Neubacher
Superintendent
Yosemite National Park
P.O. Box 577
Yosemite, CA 95389

Dear Superintendent Neubacher

The Mariposa County Board of Supervisors is pleased to provide input on the Merced Wild and Scenic River Draft Comprehensive Management Plan and Environmental Impact Statement (DEIS). With the entire Wild and Scenic portion of the river in Mariposa County we feel the perspectives of the people of Mariposa County should be given particular weight. While it seems no amount of outreach is ever enough for major planning actions such as this, we do commend the National Park Service for its over 40 preliminary public meetings and the 10 which have been held during the public review period.

For reasons noted below, we conclude that the public and park would be best served if the NPS chose to designate the minimum width through Yosemite Valley for the W&S corridor (average 3 year high water mark) instead of the maximum (1/4 mile on each side of the river banks). Clearly the designation of a ½ mile wide exclusionary zone through the center of Yosemite Valley leaves little space outside of rock fall zones for visitor services. Many of the visitor experience opportunities eliminated in the DEIS have been peacefully coexisting with the river for many decades, much to the enjoyment of the visiting public. Your own river studies document that the overall ecological health of the Merced is today better than when it was first designated Wild and Scenic over 25 years ago. Our residents and visitors alike are particularly aggrieved at the removal of raft and bicycle rental opportunities; the ability to go on a 2-4 hour concessioner guided horse or mule ride; and universally, the removal of the Curry Village ice rink.

In the many public meetings your staff continually refers to the infamous "footnote 5" from the 9th Circuit ruling on the previous NPS Merced River CMP as the reason for such widespread exclusion of visitor services. Of all the Wild and Scenic rivers managed by the National Park Service, only in Yosemite Valley has a court decided that the designation of "recreational" really

means "wild" in seeming direct conflict with the original Act. We further fear that application of this mandate will spell the end to any further W&S designations in the country. What community would agree to having their recreational and economic lifeblood turned into, essentially, a museum piece? How is it that 23 miles of the Wild and Scenic American River flows directly through the city boundaries of Sacramento? It is designated under the same Act and clearly the framers did not expect a ½ mile wide swath of the city's development to be removed. If this fix requires Congressional action we will be aggressive in working with the NPS and our legislative representatives to achieve a solution.

The public has had great trust in the NPS' management of Yosemite National Park for almost 100 years. It is now apparent that in attempting to satisfy the infinitesimal percentage of visitation represented by the former litigants, the NPS has awoken the sleeping giant of the other 99.9% of Yosemite users.

There is widespread support for many of the NPS proposed actions which relieve issues left in limbo since the flood of 1997. Modifying travel patterns and formalizing parking lots are long overdue. The sense of arrival will be greatly enhanced when the changes outlined in the preferred alternative are implemented. Continued efforts to separate pedestrians from vehicle travel patterns are well warranted. This, combined with expanded transit service should help keep access to the Valley feasible for most visitors into the future.

The proposal to add 400 parking spaces in Yosemite Valley and 200 in El Portal for overflow or transit stop is well received. Adding 174 camping spaces, while not attaining the pre-flood numbers, is a welcomed addition and an outstanding visitor service. We also believe the off season tourist will be well served by the conversion of 98 tent cabins to hard side units. We do, though, feel it is essential that a diversity of lodging opportunities continue to be offered, making an overnight experience in Yosemite Valley feasible for those of all economic means.

We must take exception to the removal of both the Ahwahnee and Yosemite Lodge pools. These pools are totally encompassed by lodging facilities which will remain. It appears illogical and, frankly, counterproductive to river values to remove them. Yosemite is one of the nation's most treasured family destinations. Families love to swim and experience water. Many are uncomfortable allowing children to be in a river and clearly the opportunity for injury and negative resource impacts dramatically rise if the pools are removed and visitors are forced into the river for water recreation. Again, this action, as well as the removal of the tennis courts at the Ahwahnee Hotel, seems totally incongruous with the W&S designation of "recreation" for the Valley section of the Merced and provides no additional enhancement for the river. Removal of these facilities seems simply to be a capitulation to former plaintiffs who would seek to return Yosemite Valley to wilderness.

We take strong objection to the NPS conclusions justifying elimination of many visitor services:

1. Commercial rafting conclusions are misleading. While rafting is not prohibited, it is reduced by over 75% from a level that your own studies have shown is very acceptable. With 60-66% of the river rafters using rental rafts, a dramatic injustice will be felt by eliminating this recreational opportunity. By forcing controlled put-in and take-out, and providing return shuttle service, the rental user can be easily managed to eliminate any stream bank damage, while the private user, even with a mandatory permit, will be far less

controlled. Additionally, it is neither feasible, nor affordable, for visitors to bring their own rafts. This is a tremendous loss and is avoidable.

2. Bicycle rental options have much the same justification as the rafts, but their elimination is even less defensible. There are few places in this world that are more enjoyable and scenic to ride a bike than in Yosemite Valley. As with rafts, it is difficult for visitors to transport personal bikes into the park, denying them yet another recreational experience only possible in this National Park. Hike and bike trails are a part of many W&S rivers in sections designated recreational. Moving the commercial bike rental office at Yosemite Lodge 75 feet to get it out of the W&S corridor to make it "legal" has been mentioned as a compromise by NPS staff in MRP DEIS meetings. There appears to be no possible justification as to why that facility damages the river values in its current location but not 75 feet away!
3. According to the preferred alternative: All commercial stock day rides would be eliminated in Segment 2 under Alternatives 2-6. For those visitors who are unable to walk a great distance, stock rides provide an opportunity to access Mirror Lake and view Vernal Falls. It also provides an activity for those visitors who spend several days in the valley and desire different types of experiences. The proposed change raises additional issues:
   - Why aren't these same factors true for Wawona?
   - Many visitors comment that they enjoy seeing stock on the trail. Removing stock rides greatly minimizes the ADA offerings to experience the park. It's not only those who can't walk a great distance, it is also those who can't walk at all. Visitor photography from and of stock rides has also been a long standing popular experience.
   - In Yosemite Valley, some of the trails are dedicated stock trails and in Wawona they are all joint use, so the benefit to hikers is not different for Wawona as compared to Yosemite.
   - Stable facilities in Wawona are a fraction of the size of those in Yosemite Valley.

The above three issues also have a strong social justice conflict in that they negatively impact the less affluent visitor at a disproportionate level. There is one more issue:

4. Ice rink removal. Again, this is an experience only available in one place in the world. We agree it contributes nothing to the health of the river, but feel strongly that it also brings no degradation. It does, though, bring great satisfaction to winter Yosemite lovers, employees and generations of families. It attracts 11,000 users each winter during a period when the Valley experiences a small fraction of summer visitor use levels; while providing a safe environment for what could otherwise be a risk laden venture on the frozen river.

We also urge the NPS to explore options which would allow for the retention of the historic Sugar Pine Bridge. We concur with the National Trust for Historic Preservation in that a balanced management approach that protects all of the river's natural, historic and cultural values is possible. We believe it is important that the NPS develop a final plan that protects Yosemite's rich heritage, including all of its majestic, rustic style stone bridges, while safeguarding the Merced River itself.

The people of Mariposa County understand that park managers have been severely constrained by the 9th Circuit ruling and footnote 5, which call on the NPS to explain how maintaining such services protects or enhances the river's unique values. If recreation is the value, not being able to

experience it is certainly a loss. That will be the case for the many thousands of visitors impacted by the removal of the above opportunities.

Ninety-five percent of Yosemite's 1200 square mile boundary is already designated wilderness, effectively prohibiting any access other than human powered or in some cases on stock. The Wild and Scenic Rivers Act (WSRA) requires that any future actions within the proposed MRP ½ mile wide corridor in Yosemite Valley must be successfully tested against the 9th Circuit interpretation of WSRA and especially footnote 5. That unavoidable application, through the decades, will inevitably result in the majority of Yosemite Valley also being managed as wilderness. Recognizing the tremendous loss of visitor experiences which date back 60-100 years, this Board must ask for a legislative solution. We are compelled to seek some reprieve from a draconian, court-ordered application of the Wild and Scenic Rivers Act, which was not intended in the original legislation.

This Board believes that both the river values and the visitor experience can be preserved by designating the minimum-width W&S corridor through Yosemite Valley, rather than the maximum. By judiciously monitoring resource health and applying effective management controls, the goal from the NPS Organic Act of providing for the use and enjoyment of the park in a manner that will leave it unimpaired for future generations will be achieved.

Sincerely,

Kevin Cann,
Board of Supervisors Vice-Chair

Tuolumne County
Administration Center
2 South Green Street
Sonora, California 95370

RECEIVED
APR 18 2013
SUPERINTENDENT'S OFFICE
YOSEMITE NATIONAL PARK

Alicia L. Jamar, *Chief Deputy*
Clerk of the Board of Supervisors

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COUNTY OF TUOLUMNE

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Karl Rodefer, *Fifth District*

April 16, 2013

TMRP-DEIS-3114
4/25/2013
CS

Don Neubacher, Superintendent
Yosemite National Park
Attn: Tuolumne River Plan DEIS
P.O. Box 577
Yosemite, CA 95389

Dear Superintendent Neubacher:

As a Gateway Community, the Tuolumne County Board of Supervisors appreciates the opportunity to comment on the Merced Wild and Scenic River Comprehensive Management Plan and Draft Environmental Impact Statement. Yosemite National Park is an essential part of Tuolumne County, and our Board is dedicated to working collaboratively with the National Park System towards best management practices to ensure maximum access for the general public. This Board recognizes that each visitor comes to Yosemite seeking a unique visitor experience. We advocate for maximum accessibility with minimum restrictions to visitors while responsibly protecting the environment.

Of the alternatives presented, this Board strongly supports Alternative 6. It best represents the Board's values, providing a wide array of outdoor opportunities. This alternative retains most of the existing services, and even enhances what Yosemite currently offers. A diversification of visitor activities is one of the features which makes Yosemite Valley so attractive to millions each year.

While Yosemite encompasses nearly 1,200 square miles, most come to experience the grandeur of Yosemite Valley, the exact location with a shortage of camp sites, lodging, and parking. Alternative 6 addresses these problems in an ecologically responsible manner. Pedestrian underpasses are proposed to enable safe walking paths and avoid vehicle conflicts. Alternative 6 is the only option which retains the current level of support for the popular Merced Lake High Sierra Camp.

It is unacceptable that a wide variety of recreational services are proposed for elimination under Alternatives 2 through 6. These include closing a swimming pool, eliminating bicycle rentals and raft rentals, eliminating equestrian day rides, and

permanently closing the ice skating rink. These services contribute to the overall experience that visitors come to expect when they visit Yosemite.

The historic structures in Yosemite should be protected for the enjoyment of future generations. It is disappointing to see that under the Park's preferred Alternative 5, the Sugar Pine Bridge constructed in 1928 is slated to be removed for the purpose of enhancing the free-flowing condition of the river. This is one of eight historic bridges in Yosemite Valley. It is for good reason that in 2012 the National Trust for Historic Preservation listed the Sugar Pine Bridge along with the Stoneman Bridge and the Ahwahnee Bridge on its endangered historic places list. These iconic arch bridges are nationally known treasures and should remain in place. Tuolumne County recommends taking the Sugar Pine Bridge mitigation measures as listed in Alternative 6.

Thank you for the opportunity to offer comments on the Merced Wild and Scenic River Comprehensive Management Plan and Draft Environmental Impact Statement with its accompanying alternatives. Of the alternatives presented, this Board is emphatic in its support of Alternative 6 with its focus on expanding visitor opportunities. The Tuolumne County Board of Supervisors is committed to ensuring the health and visibility of Yosemite National Park through a proactive partnership with the National Park System and other Gateway Communities.

Sincerely,

Randell A. Hanvelt, Chairman

I hereby certify that according to the provisions of Government Code Section 25103, delivery of this document has been made.

ALICIA L. JAMAR
Clerk of the Board

By: _____

BOARD OF SUPERVISORS
COUNTY OF MADERA

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TOM WHEELER

TANNA G. BOYD, Clerk of the Board

April 9, 2013

Superintendent Yosemite National Park
ATTN: Merced River Plan
P.O. Box 577
Yosemite, CA 94389
yose_planning@nps.gov

RE: MERCED RIVER PLAN DRAFT COMPREHENSIVE MANAGEMENT PLAN

Dear Superintendent:

Madera County greatly appreciates the opportunity to comment on the Merced Wild and Scenic River Draft Comprehensive Management Plan (MRP). As you know, the Eastern Madera County portion of our County is largely composed of southern gateway communities that directly benefit from tourists visiting the park. Accordingly, we consider our County a park partner who is directly impacted by park policy, particularly policy regarding recreational opportunities.

Our Board certainly understands the difficult task the National Park Service faces in balancing protection of the river with providing public recreation. We also understand that the Park Service must adhere to a court settlement that viewed commercial activities as unnecessary or inappropriate in the Merced River area. However, in the often referenced "footnote five", the Park Service is asked to make a "conscious choice" with regard to which commercial activities should be allowed. Our Board believes that the choice should favor the general public instead of those few represented in the litigation and advice from your legal counsel. Fear of further legal action should not supersede what is best for the visitor experience and our tourism economy.

Under the Preferred Alternative 5 in the MRP, the Park Service attempts to add more campgrounds in Yosemite Valley. Although our Board appreciates this effort, we strongly encourage the Park Service to make available at least the number of sites that existed prior to the flood of 1997. We believe that this can be done without encroaching on the river's edge. Camping is the low-cost, traditional family way to over-night in Yosemite Valley and has been enjoyed for many generations.

Additionally, the Preferred Alternative calls for an increase in parking spaces. Since adequate parking is essential to preventing traffic congestion in the park, our Board is grateful to see the increase. However, we encourage more parking be restored than is indicated in Alternative 5 to adequately provide for visitor needs and to help address traffic congestion. Increases in campgrounds will certainly provide more parking. According to NPS statistics, the were approximately 500,000 fewer overnight stays in Yosemite in 2011 than in 1996 when

the park previously recorded 4 million annual visitors. This is due to the many lodging/camping units not restored after the 1997 flood and correlates to a large increase in day-use traffic coming from the gateway areas, thus increasing the probability of congestion. At least 3,500 day-use parking spaces should be maintained in the Valley with further increases where environmentally compatible. Adding additional camping/parking will allow for increased user capacity and may prevent a movement to limit visitation by initiating a day-use reservation system.

Providing visitors with recreational opportunities is critical to better experiences for the guests of Yosemite Park. We believe that visitors are guests and park management should be cognizant of the needs of these guests. To deprive guests of the ability to have activities that promote exercise, that enable the disabled, elderly or young to access scenic areas of the Valley, and that provide river experiences for all, is unacceptable.

According to Volume One, Chapter 7 of the MRP, none of the following "affect river values", nor require "mitigation to address local effects":

- Curry Village Raft Rental
- Curry Village Ice Rink
- Commercial Horseback Day Rides in Yosemite Valley
- Curry Village Bike Rental
- Ahwahnee Swimming Pool
- Yosemite Lodge Pool and Snack Stand
- Yosemite Lodge Bike Stand

These recreational opportunities are traditional, historic and family-based activities that contribute greatly to the Yosemite experience. Our Board adamantly opposes the elimination of any of these elements of the MRP. We believe that no harm is done to the Merced River by continuing these uses, nor are their elimination required by the Wild and Scenic Rivers Act.

Regarding the Curry Village Ice Rink, it would be a travesty for the Park Service to remove it. The historic Ice Rink, built in the 1930s, is one of the five world's "coolest ice rinks", according to nationally read Travel and Leisure magazine (Dec, 2011 issue). The magazine lists it with rinks in Berlin, Copenhagen, Vienna, and London. The ice rink is a staple of the Park and a prime tourist attraction.

Similarly, horseback riding offers Yosemite visitors a unique opportunity to see many of the sites not available to those unable to hike to locations in the Valley. The disabled and young children certainly are part of this group and are entitled to the same opportunities to see the parts of the Valley not available by private vehicle or park shuttle. Moreover, those who cannot afford to board and transport horses to Yosemite also deserve this opportunity. Under the Preferred Alternative, the Park Service addresses concession day rides in Wawona. The plan specifically states that the Wawona commercial day rides have been found to be "consistent with the protection and enhancement of river values". Consequently, the same conclusion can be drawn when addressing concessions day rides in Yosemite Valley.

Riding bicycles in Yosemite Valley is also an experience unequalled anywhere in the world. To limit bicycle availability to only those capable of transporting their bikes would place out-of-area visitors at a disadvantage.

Visitors from all around the world will lose the chance to take part in this healthy activity. Instead, Park planners should encourage biking to eliminate auto congestion in the Valley. Again, Chapter 7 of the MRP clearly indicates that neither the Curry Village, nor the Yosemite Lodge bike stands affect river values. Furthermore, the same can be said for commercial raft rentals. A survey conducted by Confluence Research and Consulting in July 2012 clearly indicated that the public, 86 percent of those surveyed, do not want to see raft rentals eliminated. The Board, therefore, opposes the removal of commercial bike and raft rentals.

The MRP also proposes removing swimming pools at the Ahwahnee and Yosemite Lodge. Swimming pools are used by many Park visitors, and park and concessions families. Pools allow people to exercise and cool during the hot summer days and to avoid the river when the water flow is dangerously rapid. The disabled may not be able to access the river to enjoy a swim and should be allowed this activity. The Board must then oppose the removal of the pools as the MRP states that neither pool affects river values.

The Ninth Circuit Court required that Park planners develop a specific number for user capacity in Yosemite Valley. National Park policy in the past has relied on Visitor Experience, Resource Protection (VERP) to monitor visitor use and capacity. We understand that Park planners must follow the law, but proposed user capacity of approximately 19,000 in the Preferred Alternative does not allow for any growth in visitation. Visitor access will soon be restricted with a day-use reservation system when numbers exceed the user capacity adopted in this Alternative. Again, by adding parking and campsites above and beyond the additions in Alternative 5 will allow higher user capacity numbers and permit some growth.

Finally, our Board has concerns with relocation of the garage facility to supply more parking and better flow of traffic. Although more parking and improved traffic flow is important, a good visitor experience is equally important. Requiring visitors to have vehicles towed outside the Park for repairs is very expensive, unfair and will disrupt vacations. Furthermore, towing cars out of the Park will only slow traffic and impede traffic flow.

In summary, our Board supports the public's right to access and enjoy their national park. We believe that the Merced River Plan extends beyond the historic intent of the Wild and Scenic Rivers Act and National Park values. The Act does not require removing any recreation activity or infrastructure that existed prior to the 1987 designation in support of these activities. To restrict recreational activity and remove infrastructure will affect visitor experience and ultimately impair our tourism economy. It is our hope that Yosemite Park management will consider our comments and formulate a plan that reflects what is best for the public, our County and our gateway communities.

Respectfully,

Max Rodriguez
Chairman

cc: YSVB

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

April 17, 2013

Regulatory Division SPK-2012-00742

Mr. Don Neubacher
National Park Service
Yosemite National Park
P.O. Box 577
Yosemite, California 95389

Dear Mr. Neubacher:

We are responding to your January 24, 2013 request for comments on the Merced River Comprehensive Management Plan project. The project is located on the Merced River in Yosemite National Park including being located within Section 25, Township 2 South, Range 20 East, MDB&M, Latitude 37.7262720628108°, Longitude -119.638743291216°, Mariposa County, California.

The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, some canals, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetlands Delineations", under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation. The Corps of Engineers supports the alternative that restores and protects the most waters of the United States, including wetlands, for this project. It is important to restore and maintain the largest possible natural corridor for the

Merced River to ensure its full restoration within the 100-year floodplain. We also support the full restoration of the Wawona Meadow.

If waters of the United States are going to be impacted, cultural resource sites within the defined federal permit area will need to be evaluated according to the standards of the National Environmental Policy Act. All eligible or potentially eligible cultural resource sites to the National Register of Historic Places within the permit area will be subject to Section 106 of the National Historic Preservation Act, 1966, as amended. The Corps of Engineers must also comply with the terms and conditions of the Federal Endangered Species Act with regards to our permitting process.

Please refer to identification number SPK-2012-00742 in any future correspondence concerning this project. If you have any questions, please contact me at the letterhead address, Room 1350, email *Kathy.Norton@usace.army.mil*, or telephone 916-557-5260. For more information regarding our Regulatory Program, please visit our website located at *www.spk.usace.army.mil/Missions/Regulatory.aspx*. Thank you for allowing us to comment on this project and your attention in this matter.

Sincerely,

Kathy Norton
Sr. Project Manager
California South Branch

Copy Furnished:

Ms. Lisa Acree, Compliance Specialist, National Park Service, Yosemite National Park, P.O. Box 577, Yosemite, California 95389

Preserving America's Heritage

May 2, 2013

Mr. Don L. Neubacher
Superintendent
Yosemite National Park
National Park Service
P.O. Box 577
Yosemite, CA 95389

Ref: Draft Merced River Plan/Environmental Impact Statement

Dear Mr. Neubacher:

The Advisory Council on Historic Preservation (ACHP) has reviewed the National Park Service's *Merced Wild and Scenic River Draft Comprehensive Management Plan and Environmental Impact Statement* (EIS) published in January 2013, and we offer the following enclosed detailed comments regarding the program of undertakings and the adverse effects it may cause to historic properties listed in or eligible for listing in the National Register of Historic Places. In addition, we include comments regarding the status of the NPS review of the undertaking, pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and the implementing regulations "Protection of Historic Properties" (36 CFR Part 800).

Each of the six build alternatives in the Plan/EIS may adversely affect historic properties. In general, we are concerned that all the alternatives propose to improve the wild and scenic values of the Merced River largely at the expense of historic properties which embodying historic, cultural, and, often, recreational values. We urge the NPS to reconsider its alternatives to achieve a more balanced plan to manage the river system, protecting and enhancing the values which caused the system to be designated without limiting other uses that do not substantially interfere with public use and enjoyment of these values.

Our detailed comments address several different areas: the requirements of Wild and Scenic Rivers Act (WSRA), the alternatives described and analyzed, and the need to balance historic preservation concerns with federal needs; procedural confusion and documentation needs; incomplete identification and evaluation of historic properties; the anticipated range of adverse effects; and issues to be resolved in the consultation to develop and execute a Programmatic Agreement.

Many of the comments we provide reiterate concerns expressed by the California State Historic Preservation Office (SHPO), Indian tribes, and other consulting parties in Section 106 consultation meetings. We share the concerns of many of these parties that the extent of adverse effects to historic properties does not seem balanced with the needs of the management plan. Specifically, we urge the NPS to reconsider the proposed demolition of Sugar Pine Bridge, as proposed in the preferred alternative (5).

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

We look forward to continuing to consult with the NPS, SHPO, Indian tribes, and other consulting parties to resolve the adverse effects of the proposed Plan and to develop a Programmatic Agreement to conclude the Section 106 process prior to the NPS' Record of Decision. Please contact Katry Harris if you have any questions regarding these comments. She can be reached by telephone at 202-606-8520, or e-mail at kharris@achp.gov.

Sincerely,

Caroline D. Hall
Assistant Director
Office of Federal Agency Programs
Federal Property Management Section

Enclosure

TOM McCLINTOCK
4TH DISTRICT, CALIFORNIA

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Congress of the United States
House of Representatives
Washington, DC 20515-0504

COMMITTEE ON
NATURAL RESOURCES
SUBCOMMITTEE ON WATER AND POWER
CHAIRMAN

SUBCOMMITTEE ON PUBLIC LANDS
AND ENVIRONMENTAL REGULATION

COMMITTEE ON THE BUDGET

April 12, 2013

Don Neubacher, Superintendent
Attn: Merced River Plan
P.O. Box 577
Yosemite, CA 95389

Dear Mr. Neubacher:

I am writing to provide comments on the National Park Service's (NPS) Draft Environmental Impact Statement (DEIS) for the Merced River Comprehensive Management Plan. Yosemite National Park is a national treasure that must be available for the American public to access and enjoy in the same manner that Americans have for decades. The 1864 Act authorizing the original Yosemite land grant to the State of California stated that the "premises shall be held for public use, resort, and recreation" and "shall be inalienable for all time." The draft plan in question directly contravenes the authorization, and I am firmly against NPS taking any action that would limit public access and enjoyment of Yosemite.

Congress enacted the Wild and Scenic Rivers Act to protect free-flowing rivers from dams and other development. Congress did not intend for NPS to use the Act to justify limiting visitation, closing facilities and eliminating or curtailing historic uses that pre-date passage of the Act and the Merced River designation under the Act. In designating the Merced River, Congress understood that Yosemite National Park had a multitude of existing facilities that served River users, that Yosemite was widely visited and that the Merced River was extensively used for recreational pursuits by Park visitors. *See* S. Rep. No. 96, 100th Cong, 1st Sess. 1987 (the river is an "outstanding and heavily used recreation resource in the areas of easy accessibility").

The Merced River's designation was based upon the River's value as a popular recreation resource in a highly-visited National Park that was supported by the extensive facilities that existed at the time of the River's designation. Congress could not have intended for NPS to limit visitation or do away with the existing facilities and the recreational activities that support the values that caused the Merced River to be designated in the first place. Congress also did not intend its designation to drive planning of the larger Park and force the closure of facilities that pre-date the Act, enhance visitor experiences, and are located outside of the Merced River.

It is equally troubling that NPS is proposing to close a number of facilities within Yosemite Village and reduce recreational activities in the Yosemite Valley. NPS claims that camping will be increased to 640 campsites but that figure is still less than the 830 campsites that existed before the 1997 flood. NPS is also proposing to close the Curry Village ice skating rink, bike rental facilities, snack stands, swimming pools, tennis courts, retail stores and horse stables and stock use. These facilities are not located in the Merced River, do not impede its flow, and many existed and historically served Yosemite visitors for decades prior to Congress passing the Act.

It defies logic that NPS is proposing to close these facilities not because they degrade the Merced River, but instead because in NPS's eyes, these longstanding facilities do not benefit the River. What about the benefits that the American public will lose under NPS's proposal? NPS is also proposing to eliminate commercial rafting on the River. Like the existing facilities, commercial rafting is a service that was offered before the Merced River's designation under the Act.

I am also concerned about the proposed destruction of the Sugar Pine Bridge. This historic stone bridge was built in 1928 (40 years before enactment of the Wild and Scenic Rivers Act) and was entered into the National Register of Historic Places in 1977. The National Historic Preservation Act directs federal agencies to preserve the historic properties under their control and the legislation designating the Merced River as Wild and Scenic does not require the bridge's destruction. I do not believe that the Park Service may simply ignore its responsibilities under the National Historic Preservation Act to protect the Sugar Pine Bridge and find no justification for robbing Yosemite of this iconic landmark.

Finally, I am aware that NPS has received a number of requests for an extension of the public comment period on the Merced River plan. This is entirely understandable given that the plan and its exhibits are over 4,000 pages long, and that the comment period overlaps with the comment periods of two other major Yosemite Park plans. To ensure that the public has an adequate opportunity to provide its input, I concur that an extension is necessary, and therefore have requested that NPS extend its public comment period on the Merced River Plan by 90 days to ensure full public opportunity to comment on this important issue.

I submit these comments greatly troubled by the adverse and lasting effects this would have on Yosemite and the many visitors who enjoy the park.

Sincerely,

Tom McClintock

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

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APR 26 2013
SUPERINTENDENT'S OFFICE
YOSEMITE NATIONAL PARK

☐ Action ☒ FYI
Assigned:
Due Date:

April 24, 2013

Don Neubacher, Superintendent
Yosemite National Park
ATTN: Merced River Plan/DEIS
PO Box 577
Yosemite, CA 95389

MRP-DEIS-3540
4/30/2013
CS

Project: Merced Wild and Scenic River Draft Comprehensive Management Plan and Environmental Impact Statement

District CEQA Reference No: 20130037

Mr. Don Neubacher:

Although most of the proposed project is not located within the jurisdiction of the District and air quality in the San Joaquin Valley has improved significantly, the Valley faces many air quality challenges to meet the health-based air pollution standards. Towards that end, the San Joaquin Valley Air Pollution Control District (District) recognizes the importance of prescribed "planned ignition" burning as a means of reducing potential fuels and longer-term air quality impacts. Meeting the San Joaquin Valley's ozone and particulate matter standards will require collaboration with industry leaders, private citizens, and other governmental agencies. The District has reviewed the project referenced above and offers the following comments:

1. A more thorough conformity analysis is needed to support the necessary District general conformity letter. Since this project is in two separate air districts, each air district needs to make its own General Conformity finding and emissions data will need to be divided by air district.

   The following general conformity discussion could be used in the Merced Wild and Scenic River Comprehensive Management Plan and EIS as a foundation for the analysis that should be provided to the San Joaquin Valley Air Pollution Control District:

   > A federal agency action that takes place in a nonattainment area must comply with general conformity requirements, as contained in Title 40 of the Code of Federal Regulations (CFR) Part 93, Subpart B. The conformity determination process is intended to demonstrate that a proposed federal action will not: (1) cause or contribute to new violations of a national ambient air quality standard

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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34946 Flyover Court
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(NAAQS); (2) interfere with provisions in the applicable SIP for maintenance of any NAAQS; (3) increase the frequency or severity of existing violations of any standard; or (4) delay the timely attainment of any standard.

Both direct and indirect emissions from the federal project must be accounted for, though some emissions sources are "presumed to conform." For example, per general conformity applicability (40 CFR 93.153(i)(2)): Emissions from the following actions are "presumed to conform": ... Prescribed fires conducted in accordance with a smoke management program (SMP) which meets the requirements of EPA's Interim Air Quality Policy on Wildland and Prescribed Fires or an equivalent replacement EPA policy."

Where the remaining total project emissions are above the applicable de minimis thresholds, the project proponent must comply with general conformity requirements by showing that either that each emissions increase has already been accounted for in the SIP, or that the emissions will be offset or mitigated.

For emissions occurring in the San Joaquin Valley, the applicable de minimis thresholds are based on the San Joaquin Valley's current attainment status: extreme nonattainment for ozone, nonattainment for PM2.5, and maintenance for CO and PM10. The applicable de minimis thresholds are below.

Applicable de minimis Thresholds for the San Joaquin Valley	
Pollutant	**Tons per year (tpy)**
Ozone (VOCs or NOx)	10
CO	100
Directly emitted PM10	100
Directly emitted PM2.5	100
SO2 (as PM2.5 precursor)	100
NOx (as PM2.5 precursor)	100 (so for NOx, its role as an ozone precursor overrides its role as a PM2.5 precursor, and the de minimis of 10 applies)
Ammonia or VOC (as PM2.5 precursor)	NA (determined not significant for *2008 PM2.5 Plan*)

(*end of general conformity discussion for use in the document*)

District Planning staff are available to work with you throughout the general conformity process. Please prepare the necessary detailed documentation so District staff can verify that these federal actions meet general conformity requirements. District staff will then provide a letter to confirm the general conformity determination. Alternatively, if this action does not yet meet the general

conformity requirements, the District can work with the appropriate federal agencies to identify mitigation options.

2. The District recognizes that Yosemite National Park (Park) may be restricted on using mechanical treatments in this area. The District encourages the Park to find other ways to reduce fuels and potential forest emissions prior to putting fire on the ground in wilderness and non-wilderness areas.

3. The District requests the Park to work closely and coordinate with air pollution control districts and the California Air Resources Board (CARB) in regards to local and regional smoke and air quality impacts and how to minimize them, when they occur.

4. Planned and unplanned ignitions within the District's jurisdiction must abide by the requirements stipulated in District Rule 4106, (Prescribed Burning and Hazard Reduction Burning), the "Unified Guidelines and Procedures Document" for Smoke Management and the California Code of Regulations Title 17, Subchapter 2 "Smoke Management, for Agricultural and Prescribed Burning" requirements.

5. The District requests that the Park limit emissions during CARB or local air pollution control district declared "No Burn" days to minimize smoke impacts to sensitive receptors. This can easily be done by limiting the project to smaller "manageable" acreage burns or short-duration burn windows (3-5 days) and effectively communicating these actions to the District and the public.

6. In Chapter 9, Analysis Topics, Air Quality on Page 9-698 (table 9-131) Ambient Air Quality Standards, "The Federal PM2.5 Annual Standard is 12 $\mu g/m^3$."

If you have any questions or require further information, please call Daniel Martinez for Compliance related questions, Patia Siong for CEQA and NEPA related questions, Jessi Fierro for General Conformity, and Stephen Shaw for all other issues at (559) 230-6000.

Sincerely,

David Warner
Director of Permit Services

for Arnaud Marjollet
Permit Services Manager

DW:al/sf

Cc: File
Morgan Lambert, Director of Compliance
Samir Sheikh, Director of Strategies and Incentives

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11. LIST OF PREPARERS

Name	Title	Education	Years of Experience
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12. GLOSSARY AND ACRONYMS

GLOSSARY OF TERMS

100-year floodplain: The area along the river corridor that would receive floodwaters during a 100-year flood event. A 100-year flood event has the probability of occurring 1% of the time during any given year. If a 100-year flood event occurs, the following year will still have the same probability for occurrence of a 100-year event. For the purposes of this plan, the 100-year floodplain also includes wetlands and meadows associated with the hydrologic and ecological processes of the river.

1982 Secretarial Guidelines for Wild and Scenic Rivers: The 1982 Interagency Guidelines on the Wild and Scenic Rivers Act (also referred to as Secretarial Guidelines) provide guidelines on the evaluation, classification, and management of rivers designated as Wild and Scenic within the U.S. Departments of Agriculture and the Interior. The section of the guidelines on management of Wild and Scenic Rivers addresses carrying capacity and public use, as well as development of facilities and other management issues.

Adaptive management: A process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists. It requires a continual learning process, a reiterative evaluation of goals and approaches, and redirection based on increased information and changing public expectations.

Affected environment: Existing biological, physical, social, and economic conditions of an area that are subject to change, both directly and indirectly, as a result of a proposed human action.

Alluvial: An adjective referring to alluvium, which are sediments deposited by erosional processes, usually by streams.

Alluvium: A general term for clay, silt, sand, gravel, or similar unconsolidated rock fragments or particles deposited during comparatively recent geologic time by a stream or other body of running water.

Alternatives: Sets of management elements that represent a range of options for how, or whether to proceed with a proposed project. An environmental impact statement analyzes the potential environmental and social impacts of the range of alternatives presented.

Archeological resources: Historic and prehistoric deposits, sites, features, structure ruins, and anything of a cultural nature found within, or removed from, an archeological site.

Area of potential effect: The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effect is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.

Bed: Refers to the relatively flat or level bottom (substrate) of a body of water, as in a lakebed or riverbed.

Best Management Practices: Effective, feasible (including technological, economic, and institutional considerations) conservation practices and land- and water-management measures that avoid or minimize adverse impacts to natural and cultural resources. BMPs may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.

Biodiversity: Biodiversity, or biological diversity, is generally accepted to include genetic diversity within species, species diversity, and a full range of biological community types. The concept is that a landscape is healthy when it includes stable populations of native species that are well distributed across the landscape.

Boundaries: The areas that receive protection under the Wild and Scenic Rivers Act. Boundaries include an average of not more than 320 acres of land per mile, measured from the ordinary high water mark on both sides of the river.

CEQ Regulations: The Council on Environmental Quality (CEQ) was established by the National Environmental Policy Act (see NEPA) and given the responsibility for developing federal environmental policy and overseeing the implementation of NEPA by federal agencies.

Classifications: The status of rivers or river segments under the Wild and Scenic Rivers Act ("wild," "scenic," or "recreational"). Classification is based on the existing level of access and human alteration of the site.

Comprehensive Management Plan (CMP): A plan to protect and enhance a Wild and Scenic River. The Merced River Plan is the National Park Service's comprehensive management plan for segments of the Merced River corridor under its jurisdiction.

Cultural landscape: A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Ecological restoration: Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

Emergent wetland: A wetland characterized by frequent or continual inundation dominated by herbaceous species of plants typically rooted underwater and emerging into air (e.g., cattails, rushes). The emergent wetland class is characterized by erect, rooted, herbaceous hydrophytes (e.g., cattails, rushes), excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Perennial plants usually dominate these wetlands. All water regimes are included, except sub-tidal and irregularly exposed.

Environmental consequences: This section of an environmental assessment describes the impacts a proposed action will have on resources. Direct, indirect, and cumulative impacts, both beneficial and adverse, are analyzed. The context, duration, and intensity of impacts are defined and quantified as much as possible.

Environmental Impact Statement (EIS): A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment.

Environmentally Preferable Alternative: The environmentally preferable alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that best promotes the goals of the National Environmental Policy Act (NEPA). In general, this is the alternative causes the least damage to the environment and best protects natural and cultural resources. In practice, one alternative may be more preferable for some environmental resources while another alternative may be preferable for other resources. (The NEPA Handbook)

Ecosystem: An ecosystem can be defined as a geographically identifiable area that encompasses unique physical and biological characteristics. It is the sum of the plant community, animal community, and environment in a particular region or habitat.

Erratic: A rock fragment of any size carried by glacial ice, or by floating ice, deposited at some distance from the outcrop of origin.

Facilities: Buildings and the associated supporting infrastructure such as roads, trails, and utilities.

Floodplain: A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial: Of or pertaining to a river. Fluvial is a technical term used to indicate the presence or interaction of a river or stream within the landform.

Free-flowing river: Existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway (as defined in the Wild and Scenic Rivers Act - 16 USC 1286 [b]).

Glacial till: Glacially transported and unconsolidated mixtures of clay, silt, sand, and gravel deposited directly by and underneath a glacier without being reworked by melt water.

Glaciation: Effects on landforms produced by the presence and movement of a glacier.

Geomorphic: Of or pertaining to the form of the Earth or of its surface features.

Governing mandates: The National Park Service is directed to address user capacity, resource protection, and public enjoyment of park resources through a number of pieces of legislation such as laws, regulations, policies, and programs referred to in the Merced River Plan as governing mandates. These mandates establish the authority and responsibility for management in Yosemite National Park.

Groundwater: All subsurface water (below soil/ground surface), distinct from surface water.

Groundwater recharge: The process involved in the absorption and addition of surface water to the zone of saturation or aquifer.

Hazardous material: A substance or combination of substances, that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous waste: Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily prior to proper disposal.

Headwaters: The point or area of origin for a river or stream.

High Sierra Camps: Overnight lodging facilities operated by the concessioner in the wilderness areas that include tent cabins, food service, and other amenities.

Historic building: For the purposes of the National Register of Historic Places, a building can be a house, barn, church, hotel, or similar construction, created principally to shelter human activity. “Building” may also refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.

Historic district: A historic district is an area which possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. To be eligible for the National Register of Historic Places, a district must be significant, as well as being an identifiable entity. It must be important for historical, architectural, archeological, engineering, or cultural values.

Historic property: A historic property is any prehistoric or historic building, site, district, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places. Types of historic properties can include archeological sites, historic cultural landscapes, and traditional cultural properties.

Historic site: A historic site is the location of significant event which can be prehistoric or historic in nature. It can represent activities or buildings (standing, ruined, or vanished). It is the location itself which is of historical interest in a historic site, and it possesses cultural or archeological value regardless of the value of any structures that currently exist on the location. Examples of sites include shipwrecks, battlefields, campsites, natural features, and rock shelters.

Historic structure: For the purposes of the National Register of Historic Places, the term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter. Examples of structures include bridges, gazebos, and highways.

Hydrologic response: The response of a watershed due to precipitation. Usually refers to the resulting streamflow from a precipitation event.

Implementation plan: Implementation plans, which tier off of programmatic plans (like the General Management Plan) focus on "how to implement an activity or project needed to achieve a long-term goal. Implementation plans may direct specific projects as well as ongoing management activities or programs. They provide a more extensive level of detail and analysis than do general management plans. Implementation plans are required to undergo NEPA review.

Implementation project: Implementation projects are specific actions identified in an implementation plan.

Impoundment: A dam or other structure to obstruct the flow of water in a river or stream.

Lacustrine: Of or relating to lakes.

Management zone: A geographical area for which management directions or prescriptions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations.

Metamorphic rock: Metamorphic refers to rocks derived from pre-existing rocks by mineralological, chemical, structural changes.

Mitigation: Activities that will avoid, reduce the severity of, or eliminate an adverse environmental impact.

Native American Graves Protection and Repatriation Act (NAGPRA): The act that requires federal agencies and institutions that receive federal funding to return Native American cultural items to their respective peoples. This act also establishes a program of federal grants to assist in the repatriation process.

National Environmental Policy Act (NEPA): The federal act that requires the development of an environmental impact statement (EIS) for federal actions that might have substantial environmental, social, or other impacts.

National Historic Landmarks (NHL): Are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

National Historic Preservation Act (NHPA): In 1966, Congress established a program for the preservation of additional historic properties through the country. The NHPA requires federal agencies to evaluate the impact of all federally funded or permitted projects on historic properties through the *Section 106* process.

National Park Service Organic Act: In 1916, the National Park Service Organic Act established the National Park Service in order to "promote and regulate use of parks" and defined the purpose of the national parks as "to conserve the scenery and natural and historic objects and wild life therein and to provide for the enjoyment of the same in a manner and by such means as will leave them unimpaired for the enjoyment of future generations." This law provides overall guidance for the management of Yosemite National Park.

National Parks and Recreation Act: The 1978 law that establishes National Parks, Monuments, Recreation Areas and other recreation lands under the jurisdiction of the Department of the Interior. This law continues to be amended as new lands are acquired or boundaries of existing lands are changed.

National Register of Historic Places: As a result of the NHPA of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources.

Natural processes: All processes such as hydrologic, geologic, ecosystem that are not the result of human manipulation.

No-Action Alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Nonattainment Area: A geographical area identified by the U.S. Environmental Protection Agency and/or the California Air Resources Board as not meeting national and/or California ambient air quality standards (NAAQS / CAAQS) for a given pollutant. Nonnative species: Species of plants or wildlife that are not native to a particular area and often interfere with natural biological systems.

Nonwilderness: Areas that have not been designated for special protection under the Wilderness Act.

National Park Service Management Policies: A policy is a guiding principle or procedure that sets the framework and provides direction for management decisions. National Park Service (NPS) policies are guided by and consistent with the Constitution, public laws, Executive proclamations and orders, and regulations and directives from higher authorities. Policies translate these sources of guidance into cohesive directions. Policy direction may be general or specific. It may prescribe the process by which decisions are made, how an action is to be accomplished, or the results to be achieved. The primary source of National Park Service policy is the publication Management Policies 2001. The policies contained therein are applicable Service-wide. They reflect National Park Service management philosophy. Director's Orders

supplement and may amend Management Policies. Unwritten or informal "policy" and people's various understandings of National Park Service traditional practices are never relied on as official policy.

Ordinary High-Water Mark (OHWM): According to 33 CFR 328.3(e), "the term *ordinary high water mark*" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Outstandingly Remarkable Values (ORVs): Those resources in the corridor of a Wild and Scenic River that are of special value and warrant protection. ORVs are the "scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, that shall be protected for the benefit and enjoyment of present and future generations" (16 USC 1272).

Overnight capacity: Refers to the actual number of visitors who can be accommodated each night in lodging, camping, and wilderness High Sierra Camp facilities within Yosemite National Park. Capacity is determined by counting the maximum number of people permitted in each campsite and/or the room occupancy within lodging units.

Palustrine: The palustrine system was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent, or intermittent waterbodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The Palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5%. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 meters at low water; and (4) salinity due to ocean-derived salts less than 0.5%.

Particulate matter (PM-10 and PM-2.5): Fractions of particulate matter characterized by particles with diameters of 10 microns or less (PM-10) or 2.5 microns or less (PM-2.5). Such particles can be inhaled into the air passages and the lungs and can cause adverse health effects. High levels of PM-2.5 are also associated with regional haze and visibility impairment.

Planning: A dynamic, interdisciplinary, process for developing short- and long-term goals for visitor experience, resource conditions and facility placement.

Pluton: A general term applied to any body of intrusive igneous rock that originates deep in the earth. Named for Pluto, Greek god of the underworld.

Potential wilderness additions: Areas in wilderness where an existing use precluded full designation under the California Wilderness Act.

Preferred Alternative: The preferred alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that the agency believes would best fulfill the purpose and need of the proposed action. While the preferred alternative is a different concept from the environmentally preferable alternative, they may also be one and the same for some EISs. (The NEPA Handbook)

Pristine: Unaltered, unpolluted by humans.

Programmatic plan: Programmatic plans establish broad management direction for Yosemite National Park. The 1980 General Management Plan it a programmatic plan with a purpose to set a "clearly defined direction for resource preservation and visitor use" and provide general directions and policies to guide planning and management in the park. The Merced River Plan is also a programmatic plan that guides future activities in the Merced River corridor. Programmatic plans are required to undergo NEPA review.

Public comment process: The public comment process is a formalized process required by the National Environmental Policy Act (NEPA) in which the National Park Service must publish a Notice Of Availability in the Federal Register which provides public notice that a Draft Environmental Impact Statement (EIS) and associated information, including scoping comments and supporting documentation, is available for public review and input pursuant to the Freedom Of Information Act. In addition, the National Park Service must conduct formal public hearings on the Draft EIS when required by statute or the Council on Environmental Quality NEPA Regulations.

Public scoping process: Scoping is a formalized process used by the National Park Service to gather the public's and other agencies' ideas and concerns on a proposed action or project. A Notice Of Intent (NOI) is published in the Federal Register announcing the agency's intent to prepare an Environmental Impact Statement and a request for written public/other agency scoping comments to further define the goals and data needs for the project. In addition, although not required by the National Environmental Policy Act (NEPA) nor the Council on Environmental Quality (CEQ) NEPA Regulations, public scoping meetings may be held and integrated with any other early planning meetings relating to the proposed project.

Record of Decision: The public document describing the decision made on selecting the "preferred alternative" in an environmental impact statement. See "environmental impact statement."

Riffle (riffle/pool): A riffle is part of the natural sequence of a stream pattern as it alters between riffles and pools in the linear direction. Riffles are the steeper, shallower areas where turbulence is usually present due to shallow water flowing over the channel substrate. Pools are the calmer, less steep areas where deeper water is present, typically in a wider channel width. Additionally, there are glides that are linear stream areas where no turbulence is present due to sufficiently deep water but stream velocities are higher than typical of pool areas. Glides are usually not as wide across the stream channel as compared to pools.

Riparian areas: The land area and associated vegetation bordering a stream or river.

Riprap: A layer of large, durable fragments of broken rocks specially selected and graded, thrown together irregularly or fitted together to prevent erosion by waves or currents.

Riverine: Of or relating to a river. A riverine system includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5%. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

River corridor: The area within the boundaries of a wild and scenic river (e.g., the Merced River corridor).

Section 7 determination process: Section 7 of the Wild and Scenic Rivers Act specifies restrictions on hydro and water resources development projects. Water resources projects are subject to Section 7 of the Wild Scenic Rivers Act (16 USC 1278). Section 7(a) states, "no department or agency of the United States

shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration."

Sediment: A particle of soil or rock that was dislodged, entrained, and deposited by surface runoff or a stream. The particle can range in size from microscopic to cobble stones.

Segment: Section 2 of the Wild and Scenic Rivers Act requires that the Merced River be classified and administered as "wild", "scenic", or "recreational" river segments, based on the condition of the river corridor at the time of boundary designation. The classification of a river segment indicates the level of development on the shorelines, the level of development in the watershed, and the accessibility by road or trail. "Wild" segments are free of impoundments and generally inaccessible except by trail, with watersheds and/or shorelines essentially primitive and unpolluted; "Scenic" segments are free of impoundments, with watersheds and shorelines largely undeveloped, but accessible in places by roads; and, "Recreational" segments are readily accessible by road or railroad, may have some development along the shorelines, and may have undergone impoundment or diversion in the past.

Site hardening: Any development that creates an impervious ground surface. Usually used as a way to direct visitor use and reduce impacts to resources.

Social trails: A social trail is an informal, nondesignated trail between two locations. Social trails often result in trampling stresses to sensitive vegetation types.

Special-Status Species: Species of plants and animals that receive special protection under state and/or federal laws. Also referred to as "listed species" or "endangered species."

Subalpine: Designating or growing in mountain regions just below the timberline.

Superintendent's Compendium: Under the authority of 16 U.S.C., Section 3, and Title 36 Code of Federal Regulations, Chapter 1, Parts 1-7; the Compendium of Superintendent's Orders was established for Yosemite National Park, referred to as the "Superintendent's Compendium" in the Revised Merced River Plan/SEIS. Each park superintendent has discretionary authority to regulate or limit certain uses, and/or require permits for specific activities within the boundaries of a national park. (See II-9 for text version of definition)

Traditional cultural resource: Any site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Traditional cultural property: Traditional cultural resource that is eligible for or listed on the National Register of Historic Places as a historic property.

Treatment: Work carried out to achieve a historic preservation goal. The four primary treatments are preservation, rehabilitation, restoration, and reconstruction (as stated in the Secretary of the Interior's Standards for the Treatment of Historic Properties).

User capacity: the quantity of recreation use which an area can sustain without adverse impact on the outstandingly remarkable values and free-flowing character of the river area, the quality of the recreational experience, and public health and safety.

User: Visitors and employees in the Merced River corridor.

Visitor experience: The perceptions, feelings, and reactions a park visitor has in relationship with the surrounding environment.

Visitor use: Refers to the types of recreation activities visitors participate in, numbers of people in an area, their behavior, the timing of use, and distribution of use within a given area.

Visitor use levels: Refers to the quantity or amount of use a specific area receives, or the amount of parkwide visitation on a daily, monthly or annual basis.

Walk-in campground: A campground with consolidated parking areas separated from the individual campsites. Campers walk a short distance from the parking area to their campsites.

Watershed: The region drained by, or contributing water to, a stream, lake, or other body of water. Synonym: basin or drainage basin.

Wetland: Wetlands are defined by the U.S. Army Corps of Engineers (CFR, Section 328.3[b], 1986) as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wild and Scenic River: A river receiving special protection under the Wild and Scenic Rivers Act.

Wilderness: Designated wilderness areas are protected by the provisions of the 1964 Wilderness Act; they are characterized by a lack of human interference in natural processes.

Wilderness Act of 1964: The Wilderness Act restricts development and activities to maintain certain places where wilderness conditions predominate.

Wilderness Impact Monitoring System (WIMS): Wilderness monitoring is an integral part of Yosemite's wilderness management program. Visitor use patterns have been tracked since 1975 from wilderness permits and field reports by rangers. Monitoring of campsite and trail impacts began in the 1970s. A program now called the Wilderness Impact Monitoring System (WIMS) monitors and evaluates campsite conditions in the wilderness that ensure that the trailhead quotas and wilderness education about proper backcountry care are adequately protecting wilderness values. Using WIMS, visitor satisfaction information, patrol data, and a variety of other studies, the National Park Service conducts wilderness-wide inventory and monitoring. Data gathered from these studies are used to determine when, where, and why significant change occurs, to adjust management practices as appropriate to eliminate unacceptable impacts, and to provide a system for tracking those changes.

Wilderness Trailhead Quota System: The Wilderness Trailhead Quota System was established in the 1970s to protect wilderness areas within Yosemite National Park. This system assigns a daily quota for each wilderness trailhead in the park. The quotas are based on scientific studies that evaluated ecological condition and historic use patterns. Controlling use at the trailhead allows for maximum visitor freedom--considered a cornerstone in wilderness experience--while allowing the park to limit or disperse use as appropriate. The Wilderness Trailhead Quota System allows for a total of 1,280 overnight visitors to enter the wilderness each day. Day use in Wilderness is not currently limited or controlled.

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADA	The Americans with Disabilities Act
AIRFA	American Indian Religious Freedom Act
ARPA	Archaeological Resources Protection Act
CAAQS	California Ambient Air Quality Standards
CARB	California Environmental Protection Agency, Air Resources Board
CCC	Civilian Conservation Corps
CDFG	California Department of Fish and Game
CDN	Communications Data Network
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CMP	Comprehensive Management Plan
DCS	Distributed control subsystem
dB	Decibel
dBA	Decibel (on the "A-weighted" scale)
DNC	Delaware North Companies Parks and Resorts at Yosemite, Inc.
DO	Director's Order
EA	Environmental assessment
EIS	Environmental impact statement
EPA	U.S. Environmental Protection Agency
FEIS	Final environmental impact statement
FONSI	Finding of No Significant Impact
GIS	Geographic information system(s)
GMP	General Management Plan
gpd	Gallons per day
gpm	Gallons per minute
IWSRCC	Interagency Wild and Scenic Rivers Coordinating Council
kWh	Kilowatt hour
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NPS	National Park Service
NWI	National Wetlands Inventory
ORV	Outstandingly Remarkable Value
PEPC	Planning, Environment, and Public Comment
PG&E	Pacific Gas and Electric
PM	Particulate matter

RWQCB	Regional Water Quality Control Board
RV	Recreational Vehicle
SHPO	State Historic Preservation Officer
SNEP	Sierra Nevada Ecosystem Project
UFAS	Uniform Federal Accessibility Standards
USACE	U.S. Army Corps of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WIMS	Wilderness Impact Monitoring System
YARTS	Yosemite Area Regional Transportation System
YCC	Youth Conservation Corps
YTS	Yosemite Transit System

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