

# Chapter 3: Affected Environment and Environmental Consequences

## Introduction

This chapter describes the environment that could be affected by the alternatives of The Ahwahnee Comprehensive Rehabilitation Plan and analyzes the potential environmental impacts of the proposed actions in each alternative.

## Organization of this Chapter

This chapter includes an introduction that provides a brief overview of the resource topics analyzed and the methods used for analysis. A rationale for excluding certain resource topics is also included. Following the introduction, this chapter is organized by resource topics relevant to the project. Descriptions of the current conditions of each resource topic, based on the most recent studies and analyses available at the time this environmental assessment was prepared, are described in the Affected Environment sections. The Affected Environment sections are followed by an analysis of the Environmental Consequences associated with each proposed alternative, including the No Action Alternative. These analyses provide the basis for comparing the effects of the alternatives.

## Resource Topics Considered in this Environmental Assessment

Resource topics considered were selected based on federal law, regulations, executive orders, NPS management policies, NPS subject matter expertise, and concerns expressed by other agencies or members of the public during scoping and comment periods.

### Natural Resources

Analysis was performed for the following natural and physical resource topics:

- Geohazards
- Soils
- Hydrology
- Vegetation
- Wildlife
- Special status species
- Air quality
- Soundscapes

### Sociocultural Resources

Analysis was performed for the following sociocultural resource topics:

- Visitor experience and recreation
- Park operations and management

- Public health and safety
- Socioeconomics
- Energy consumption and global climate change

## Historic Properties

For this project, analysis was performed for the following historic properties resource topics:

- Historic sites, buildings, and landscapes
- Archeological resources
- American Indian traditional cultural resources and practices

## **Resource Topics Dismissed From Detailed Analysis**

**Geology:** There are no geologic resources that would be affected by any of the proposed actions. The results of geotechnical investigations at the site and the impact of seismic strengthening actions are addressed under the Geohazards section. Therefore, Geology was dismissed from further analysis as a distinct resource topic in this document.

**Wetlands:** A wetland delineation has not been conducted in the project area. However, evaluation of existing vegetation data in areas where work is proposed indicates that there are no wetland vegetation types in the project area. With the implementation of a Storm Water Pollution Prevention Plan and general construction Best Management Practices (see Appendix E, Mitigation Measures), the proposed action would not have impacts on downstream wetlands. Therefore, this resource topic has been dismissed from further analysis in this document.

**Floodplains:** Yosemite Valley has a well-developed floodplain, with major roads and structures along or within both sides of the floodplain. The character of the floodplain varies in different locations due to local hydraulic controls. The Merced River watershed has had 11 winter floods since 1916. The January 1997 flood was the largest recorded within the park; it was estimated to have a recurrence interval of 90 years (NPS 1997a).

The NPS Water Resource Division considers the 1997 flood extent to be the predicted 100-year floodplain despite being approximately a 90-year flood, as the 100-year event would not differ substantially in lateral extent from the 90-year event.

The Ahwahnee Hotel Comprehensive Rehabilitation Plan project area was not inundated by the 1997 flood and is not considered to be within the 100-year regulatory floodplain. Therefore, floodplains have been dismissed from further analysis in this document.

**Lightscares:** Exterior lighting, as well as interior lighting emanating out of windows at The Ahwahnee, does have a local impact on dark night skies in the project area. However, this project does not propose changes to lighting on the interior or exterior of the hotel that would appreciably increase or decrease the amount of light emitted at the hotel. Therefore, lightscares has been dismissed from further analysis in this document.

**Scenic Resources:** There would be no changes to scenic views from The Ahwahnee, and impacts to historic scenic resources are addressed under the Historic Sites, Buildings and Cultural Landscapes section and the Visitor Experience section. Scenic vista clearing at The Ahwahnee is addressed under the parkwide *Scenic Vista Management Plan*. Therefore, this has been dismissed from further analysis as a separate resource topic in this document.

**Public Health and Safety:** Public health and safety is a fundamental element of the purpose and need for The Ahwahnee Comprehensive Rehabilitation Plan. As such, it is analyzed under the following topics, rather than as one separate topic: Geohazards (which evaluates the project alternatives in terms of risk to life and property), Visitor Experience (which considers visitor safety), and Facility Operations (which considers employee safety).

**Wilderness Experience:** The project area does not overlap with designated wilderness, and implementation of The Ahwahnee Comprehensive Rehabilitation Plan would not have any effect on the wilderness experience or wilderness access. Therefore, this resource topic has been dismissed from further analysis in this document.

**Transportation:** The Ahwahnee Comprehensive Rehabilitation Plan does not propose to change existing vehicular or pedestrian circulation patterns, transportation corridors, or the configuration of The Ahwahnee parking lot. Therefore, this resource topic has been dismissed from further analysis in this document.

**Orientation and Interpretation:** Implementation of The Ahwahnee Comprehensive Rehabilitation Plan could have negligible to minor impacts on park orientation and interpretation. Proposed actions of this type are addressed under the Visitor Experience and Facility Operations and Management sections. Therefore, this topic has been dismissed from further analysis as a separate resource topic in this document.

**Environmental Justice:** The Ahwahnee Comprehensive Rehabilitation Plan does not propose to change existing visitor access or levels of visitor service at The Ahwahnee, with the exception of improved accessibility. No aspect of this project would result in disproportionately high and adverse human health or environmental effects on minority or low-income populations; destruction or disruption of community cohesion and economic vitality; displacement of public and private facilities and services; increased traffic congestion; and/or exclusion or separation of minority or low-income populations from the broader community. Therefore, this resource topic has been dismissed from further analysis in this document.

**Prime and Unique Agricultural Lands:** There are no agricultural lands in the project area and the proposed action would not have any indirect effects to downstream agricultural lands. Therefore, this resource topic has been dismissed from further analysis in this document.

**Land Use:** Land uses within Yosemite National Park are classified as “parklands,” regardless of the individual types of land uses within the park. Implementation of The Ahwahnee Comprehensive Rehabilitation Plan would not affect land uses within the park. Therefore, this resource topic has been dismissed from further analysis in this document.

## **Methods for Analyzing Environmental Consequences**

The National Environmental Policy Act requires that environmental documents disclose the environmental impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented. The National Environmental Policy Act and NPS *Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making* (DO-12) require consideration of the context, duration, intensity, and type of impacts.

Methods for assessing impacts to historic properties are required to meet the standards in the National Historic Preservation Act section 106 implementing regulations (36 CFR 800), described below.

Both direct and indirect impacts of the action must be included in the analysis. Direct impacts are caused by, and occur at the same time and place as, the action, including such impacts as animal and plant mortality and damage to cultural resources. Indirect impacts are caused by the action, but occur later in time at another place or to another resource, including changes in species composition, vegetation structure, range of wildlife, offsite erosion, or changes in general economic conditions tied to park activities.

## Impact Analysis for Natural and Sociocultural Resources

The environmental consequences for each natural and sociocultural impact topic were defined based on the following information regarding context, type of impact, duration of impact, intensity of impact and the cumulative context. Unless otherwise stated, impact analysis is based on a qualitative assessment of impacts. Context, duration, type and intensity of impact are characterized in more detail specific to each resource topic, when applicable, preceding the environmental consequences discussion in each resource section below.

### Context of Impact

The context is the setting or area within which impacts are analyzed – such as the local project area, the region, or national area of influence.

- **Local:** Detectable only in the vicinity of the proposed action.
- **Regional:** Detectable on a landscape scale (beyond the affected site).
- **National:** Detectable on a national scale.

### Duration of Impact

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts evaluated in this environmental assessment may be one of the following:

- **Short-term:** Generally, short-term impacts are temporary, transitional, and associated with construction and removal activities.
- **Long-term:** Long-term impacts are typically those effects that continue to occur after construction and last 10 years or more, and could be considered permanent.

### Intensity of Impact

The intensity of an impact considers whether the impact is judged negligible, minor, moderate, or major relative to existing conditions. Intensities of impact for historic properties are measured differently, and are described under a separate discussion, below.

- **Negligible:** The measurable or anticipated degree of change would not be detectable or would be only slightly detectable, localized, or at the lowest level of detection.
- **Minor:** The measurable or anticipated degree of change would have a slight effect, causing a slightly noticeable change of approximately less than 20 percent compared to existing conditions, often localized.
- **Moderate:** The measurable or anticipated degree of change is readily apparent and appreciable and would be noticed by most people, with a change likely to be between 21 and 50 percent compared to existing conditions; can be localized or widespread.
- **Major:** The measurable or anticipated degree of change would be substantial, causing a highly noticeable change of approximately greater than 50 percent compared to existing conditions; often widespread.

## Type of Impact

A measure of whether the impact would improve or harm the resource and whether that harm occurs immediately or at some later point in time.

- **Beneficial:** Reduces or improves impact being discussed.
- **Adverse:** Increases or results in negative impact being discussed.

## Impact Analysis for Historic Properties

“Historic properties,” as defined by the implementing regulations of the National Historic Preservation Act, are any districts, buildings, structures, sites, or objects, including resources that are considered by American Indians to have cultural and religious significance, that are eligible for inclusion in the National Register of Historic Places (NRHP) because they are significant at the national, state, or local level in American history, architecture, archeology, engineering, or culture. The term “eligible for inclusion” includes both properties formally determined eligible and all other properties that meet NRHP listing criteria.

NPS management policies and cultural resource management guidelines call for the consideration of historic properties in planning proposals. To meet NPS obligations under the National Historic Preservation Act and the National Environmental Policy Act, among other regulations, methods for identifying historic properties and assessing impacts must meet the standards in NHPA section 106 implementing regulations (36 CFR 800).

## NHPA Determinations of Effect

Conventional terms used by the National Park Service to measure the context, duration, intensity, and type of impact as part of NEPA analysis are not valid for assessing effects on historic properties under NHPA standards. Because the effect on a historic property is measured by the status of the historic property’s eligibility for listing in the National Register of Historic Places, the negligible, minor, moderate and major degrees do not apply: either a historic property maintains the characteristics making it eligible for listing in the National Register of Historic Places, or it does not.

The Advisory Council on Historic Preservation (ACHP) has issued regulations for the implementation of section 106, entitled *Protection of Historic Properties* (36 CFR 800). ACHP regulations discuss the following types of effect:

- **No Historic Properties Affected:** When there are no historic properties present, or the action will have no effect on historic properties, the action is said to have *no effect* on historic properties.
- **No Adverse Effect:** Occurs when there will be an effect on a historic property, but the action will not alter characteristics that make the property eligible for inclusion in the National Register of Historic Places in a way that would diminish the integrity of the property.
- **Adverse Effect:** Occurs when an action will alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places, in a way that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative.

### **Resolving Adverse Effects on Historic Properties**

An adverse effect under section 106 of NHPA can be resolved with a good faith effort to consider whether and how to avoid, reduce, or mitigate the effect, which could be done by modifying the undertaking, imposing certain mitigation conditions, such as photographic documentation; treatment of historic buildings, structures, and landscapes in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties (Standards)*; or other measures negotiated in consultation with the California State Historic Preservation Officer, culturally associated American Indian tribes and groups, and the public. These measures would be documented in a memorandum of agreement, a programmatic agreement, or a NEPA decision document.

Because the National Park Service anticipated that a comprehensive rehabilitation program would have an adverse effect (as defined by ACHP regulations) on The Ahwahnee National Historic Landmark and would have the potential to affect archeological sites that contribute to the Yosemite Valley Archeological District, the National Park Service at Yosemite National Park and the California State Historic Preservation Officer have entered into a programmatic agreement, pursuant to 36 CFR 800.14(b) (see Appendix A). The seven culturally associated American Indian tribes and groups have been invited to participate in the programmatic agreement as concurring parties. The 2011 Ahwahnee Comprehensive Rehabilitation Program Programmatic Agreement (2011 Programmatic Agreement)(Appendix A) includes documentation, interpretation, and National Register reevaluation as mitigation measures that will be implemented in the event of an adverse effect on historic properties.

### **Methodology**

In accordance with ACHP regulations implementing NHPA section 106, effects on historic properties were identified and evaluated by:

- Determining the area of potential effect
- Identifying cultural resources present in the area of potential effect that were either listed in or eligible for listing in the National Register of Historic Places
- Applying the criteria of adverse effect to affected cultural resources listed in or eligible for listing in the National Register of Historic Places
- Considering ways to avoid, minimize, or mitigate adverse effects

### **Area of Potential Effect for this Project**

As defined under NHPA section 106, the area of potential effect for this project is The Ahwahnee hotel, its ancillary structures, and the area immediately surrounding these buildings (see Appendix A, Attachment A).

### **Properties Analyzed for this Project**

Historic properties that could potentially be affected by this project include The Ahwahnee National Historic Landmark, the Yosemite Valley Historic District, archeological resources, American Indian traditional cultural resources, and the Yosemite Valley Archeological District.

## **Cumulative Impacts**

Cumulative impacts are the effects on the environment that would result from the incremental impacts of the action when added to other past, present and reasonably foreseeable future actions. Impacts would be considered cumulative regardless of what agency or group (federal or nonfederal) undertakes the action. The CEQ describes a cumulative impact as follows (Regulation 1508.7):

*...a "Cumulative impact" is 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

The cumulative impacts addressed in this analysis include past actions, present actions, as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they would have additive effects on a particular resource. Because some of the cumulative projects are in the early planning stages, the evaluation of cumulative impacts was based on a general description of those projects.

Appendix D contains a list of projects included in the cumulative impacts analysis. Cumulative impacts are addressed for each alternative in the Environmental Consequences section of each resource topic.

## **Impairment**

In addition to determining the environmental consequences of the alternatives, NPS *Management Policies 2006* (NPS 2006a) and Director's Order 12 require analysis of impacts to determine if actions would impair park resources and values. The evaluation of impairment is included with this environmental assessment as Appendix G.

## **Impact Mitigation Measures**

The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of impacts, to help ensure that the activities associated with The Ahwahnee Comprehensive Rehabilitation Plan would protect park resources and the quality of the visitor experience.

Mitigation measures include the following types of actions:

- *Avoid* conducting management activities that would adversely affect the resource.
- *Minimize* the type, duration, or intensity of the impact on an affected resource.
- *Repair* localized damage to the affected resource immediately after an adverse impact.
- *Rehabilitate* an affected resource with a combination of additional management activities.
- *Compensate* a major long-term adverse direct impact through additional strategies designed to improve an affected resource to the degree practicable.

Specific mitigation measures that would occur prior to, during, and after construction under all action alternatives are described in Appendix E: Mitigation Measures Common to All Action Alternatives.

# Natural Resources

## Geologic Hazards

### Affected Environment

#### Overview

Yosemite National Park is a geologically active area where natural forces continue to shape the landscape. Geologic hazards, such as earthquakes and rockfall, present potentially harmful conditions for people and facilities in the park. Actions proposed under the action alternatives would not affect the incidence or effects of rockfall events at The Ahwahnee. Therefore, geologic hazards within the affected environment for this project would be limited to seismic events.

Earthquakes felt in Yosemite Valley usually have epicenters in western California or along the eastern flank of the Sierra Nevada. Historically, nine earthquakes (not including aftershocks) have been felt and reported in Yosemite Valley. (Wieczorek and Jaeger 1996). No active or potentially active earthquake faults have been identified in the mountain region of Yosemite National Park (Hart 1990).

The primary source of seismic shaking in the project area is anticipated to be the Owens Valley Fault Zone, located along the eastern front of the Sierra Nevada. The portions of the fault system closest to the project area include the Hilton Creek, Hartley Springs, and Round Valley faults in the Mammoth Mountain – Lake Crowley region (Kleinfelder 2009). Active or potentially active faults that may generate earthquakes affecting Yosemite Valley, and their distances from the project area, are summarized in Table 3-1.

**Table 3-1**  
**Active Regional Faults**

Fault	Approximate Distance from Project Area (miles)	Direction from Project Area
Melones	21.0	Southwest
Hartley Springs	28.0	East
Mono Lake	28.5	East
Robinson Creek	35.0	Northeast
Hilton Creek	38.0	East
Round Valley	47.0	East

Source: Moore Twining and Associates 2010, Treadwell & Rollo 2009

#### Applicable Seismic Standards

Current seismic evaluation and rehabilitation requirements are governed by the Interagency Committee on Seismic Safety in Construction (ICSSC) Recommended Practice 6 (RP6) *Standards of Seismic Safety for Existing Federally Owned and Leased Buildings* (see Chapter 1, Applicable Codes and Standards). RP6 requires that existing buildings meet the Life Safety performance objective and the Basic Safety Objective. The Basic Safety Objective considers the building's seismic performance in two different earthquake events.

The first event considered is the “expected” event that may likely occur once during the useful life of the building. It is referred to as the Base Safety Earthquake (BSE)-1 and has a 500-year return period, or an event with a 10% chance of being exceeded in 50 years. ICSSC standards require



buildings to meet the life-safety performance levels of a BSE-1 earthquake; meaning that people in and around the building are expected to be safe from serious injury and death.

The other is the “extreme” event that is considered to be the largest possible earthquake that could affect the site. It is referred to as the BSE-2 earthquake and it has a 2,500-year return period, or a 2% chance of being exceeded in 50 years. A building is required to meet the collapse-prevention performance level when the BSE-2 earthquake occurs. Although damage to the structures and historic fabric could occur, The Ahwahnee hotel and cottages meet the BSE-2 collapse-prevention standards. However, due to the continuous development of seismic design standards since the construction of The Ahwahnee hotel and cottages, there are some inherent qualities of the structures that may not meet the Basic Safety Objective. Locations that may create safety hazards during BSE-1 and BSE-2 earthquakes include (Degenkolb Engineers 2010):

#### ***Hotel Dining Room***

Due to the lack of a lateral force resisting system in the wood-framed hotel Dining Room, considerable damage could occur in this portion of the hotel when subjected to a BSE-1 or BSE-2 earthquake, resulting in hazards to occupant safety and potentially substantial damage to the structure. Specifically,

- The roof of the Dining Room could separate from the adjoining kitchen and hotel building with a gap of approximately 1 to 3 inches;
- Stone columns at the west end of the Dining Room could rock independently of one another and the roof, potentially dislodging stones from the top of columns;
- Glazing in the window walls at the south side of the Dining Room may shatter.

#### ***Hotel and Cottage Stone Chimneys***

The stone chimneys on the hotel are discontinuous below the roof structure, and the stone chimneys on the cottages are not adequately braced at the roof level. When subjected to a BSE-1 or BSE-2 earthquake, chimneys could topple and injure visitors or employees below.

#### ***Hotel South Wing Interior Walls***

Two-story gypsum block walls flanking the Solarium and Great Lounge fireplaces may fail during a BSE-1 or a BSE-2 earthquake due to building drift or accelerations, resulting in falling hazards to building occupants or blocked egress.

In addition, the lack of shear walls in the Great Lounge and Solarium may result in damage to floors and finishes at the intersection of the south wing, east wing, and Gift Shop, including cracking or breakage of the very significant stained glass windows, the historic storefront, and decorative stenciling. However, work in this area is not required to meet current seismic life-safety or collapse-prevention performance standards.

#### ***Hotel Exterior Walls***

The existing granite stone veneers may separate from their concrete backing during either a BSE-1 or a BSE-2 earthquake, resulting in a safety hazard to occupants from stone falling into egress paths.

#### ***Hotel Porte Cochere***

The wood-framed entry walkway and the Porte Cochere are susceptible to damage during either a BSE-1 or a BSE-2 earthquake. However, work is not required to meet current RP6 seismic performance standards.

### ***Hotel Mechanical, Electrical, and Plumbing (MEP) Equipment***

Unanchored or unbraced equipment may fail in either a BSE-1 or a BSE-2 earthquake, resulting in severely disrupted hotel operations. However, upgrades to existing equipment are not required to meet current RP6 seismic performance standards.

## **Environmental Consequences - Methodology**

The National Park Service defines a geohazard as any geological or hydrological process that poses a threat of injury or death to people and/or damage to their property. This analysis focuses on the potential hazards to life and property in the project area due to geological events, specifically earthquakes. The potential threats to life and property as a result of earthquakes are considered in this analysis.

Several assumptions were integrated into this assessment, as summarized below:

- It is not possible to completely avoid all hazards due to natural processes such as earthquakes. Considering this, any type of use in the project area exposes visitors and employees to life-safety geohazards;
- Large-impact, low-frequency geologic hazards that affect public safety are rarely predictable, and the extent to which they may affect people and/or property cannot be quantified. Analysis of such effects is therefore qualitative, and professional judgment is applied to reach reasonable conclusions as to the context, duration, and intensity of potential impacts;
- Threats to life and property from geohazards are most effectively mitigated by avoiding development in geohazard areas.

**Context:** Potential for impacts related to geohazards would be local.

**Duration:** Potential for impacts related to geohazards would be long-term and permanent.

**Intensity:** The intensity of the impact would be negligible if the probability (risk) of impact from a geohazard on life and property is minimal. The intensity of the impact would be minor if there is a detectable risk of impact on life and property. The intensity of the impact would be moderate if there is a substantial risk of impact on life and property. The intensity of the impact would be major if there is a substantial increase or decrease in threats to life and property.

There will always be a potential for adverse impacts on life and property due to geologic hazards, especially in developed areas within seismically active zones. Therefore, management actions to avoid or restrict use or placement of facilities in areas susceptible to geologic hazards may decrease the risks, but would not necessarily reduce the intensity of the impact.

**Type:** All earthquake events are potentially hazardous. The type of impact is related to risk (i.e., probability of impact), and it is difficult to estimate risk of impacts involving natural events. In general, reducing risk to life and property from geohazards is considered a beneficial impact. Maintaining facilities as-is or moving facilities into a zone of higher threat or exposing people to greater potential for geohazards would be considered adverse.

## Environmental Consequences of the No Action Alternative

### Analysis

The threats to life and property as a result of earthquakes would remain as described under ‘Affected Environment’ above. Generally, the hotel and cottages conform to seismic standards for collapse prevention under a 2,500-year seismic event (BSE-2). Areas of the hotel that would not conform to the minimum RP6 life-safety performance standard of the BSE-1 (500-year) earthquake include: the Dining Room, large (greater than 16 square feet) plate glass windows in the Dining Room and Solarium, hotel and cottage chimneys, the two-story gypsum-block walls at the Great Room and Solarium, and egress areas beneath exterior stone veneers at the hotel. In addition, damage to the Porte Cochere and at the intersections of the south wing, east wing, and Gift Shop of the hotel could occur as a result of BSE-1 or BSE-2 earthquakes, but work is not required in these areas to meet seismic performance standards.

**Conclusion:** Under the No Action Alternative, the ongoing threats to life and property from geohazards would continue. While the hotel and cottages generally conform to RP6 seismic standards, some areas of the hotel and cottages (Dining Room, stone chimneys, exterior granite veneers, and two-story gypsum-block walls in the Great Lounge) would not conform to the minimum life-safety standards of the BSE-1 (500-year) earthquake, resulting in a local, long-term, moderate, adverse impact.

### Cumulative Impacts

Past projects that contributed to adverse geohazard impacts on life and property within the project area included the original construction and expansion of The Ahwahnee into areas where damage from earthquakes could occur, although the structure conformed to seismic standards at the time it was built. The hotel and cottages meet the current RP6 BSE-2 collapse-prevention standard.

Current or reasonably foreseeable projects that could contribute to beneficial impacts (i.e., threat reduction) related to geohazards include the planned seismic strengthening of The Ahwahnee dormitory, which does not meet the current BSE-1 safety performance standard. However, because the minimum life-safety requirements of current seismic standards would not be met under the No Action Alternative, there would continue to be an overall local, long-term, moderate, adverse impact on geohazard threats to life and property at The Ahwahnee.

## Environmental Consequences of Alternative 1

### Analysis

The following seismic safety improvements proposed under Alternative 1 would address the minimum life-safety performance standards of the 500-year (BSE-1) earthquake and the 2,500-year (BSE-2) earthquake:

#### *Dining Room*

- Bracing the Dining Room in the north-south and in the east-west direction would prevent the Dining Room from separating from the kitchen wing and the main hotel building core in a seismic event, resulting in a decreased potential for injury to occupants from associated falling hazards, and of significant damage to the structure;

- Capping and pinning of granite veneers at the western Dining Room columns would interconnect and reinforce these features, resulting in a decreased risk of injury to occupants from falling stones;
- Reinforcement of glazing on windows over 16 square feet in the Dining Room and Solarium would prevent the windows from shattering during a seismic event, reducing the likelihood of injury to occupants.

#### ***Stone Chimneys***

- Reinforcement of the stone chimneys on the hotel roof with exterior collar straps and guy wires, and reinforcing the stone chimneys at the cottages, would reduce the likelihood of falling stones and injury to occupants on the ground.

#### ***South Wing Interior Walls***

- Reinforcement of the non-structural, two-story gypsum-block walls at the Great Lounge with an internal steel frame would reduce the likelihood of collapse and injury to occupants.

#### ***Exterior Walls***

- Exterior granite veneer located above egress points would be pinned, resulting in a reduced likelihood of falling stones and injury to occupants exiting the building.

**Conclusion:** Seismic safety improvements proposed under Alternative 1 would meet the minimum RP6 life-safety performance standard for the 500-year (BSE-1) earthquake and 2,500-year (BSE-2) earthquake. This would substantially decrease the threat to life and property at The Ahwahnee from seismic events, resulting in a local, long-term, moderate, beneficial impact.

#### **Cumulative Impacts**

Past projects that contributed to adverse geohazard impacts on life and property within the project area included the original construction and expansion of The Ahwahnee into areas where damage from earthquakes could occur, although the structure conformed to seismic standards at the time it was built. The hotel and cottages meet the current RP6 BSE-2 collapse-prevention standard.

Current or reasonably foreseeable projects that could contribute to beneficial impacts (i.e., threat reduction) related to geohazards include the planned seismic strengthening of The Ahwahnee dormitory, which does not meet the current BSE-1 safety performance standard. Cumulative actions in combination with Alternative 1 would result in a net local, long-term, moderate, beneficial impact on geohazard threats to life and property at The Ahwahnee.

## **Environmental Consequences of Alternative 2**

#### **Analysis**

Seismic safety improvements proposed under Alternative 2 would address the minimum required life-safety performance standard for the 500-year (BSE-1) earthquake and the 2,500-year (BSE-2) earthquake. Alternative 2 has many of the same actions called for in Alternative 1, with some additional structural strengthening actions. The required and recommended measures would result in the following:

***Dining Room***

- Bracing the Dining Room in the north-south and in the east-west direction would prevent the Dining Room from separating from the kitchen wing and the main hotel building core in a seismic event, resulting in a decreased potential for injury to occupants from associated falling hazards, and of significant damage to the structure;
- Capping and pinning of granite veneers at the western Dining Room columns would interconnect and reinforce these features, resulting in a decreased risk of injury to occupants from falling stones;
- Reinforcement of glazing on windows over 16 square feet in the Dining Room and Solarium would prevent the windows from shattering during a seismic event, reducing the likelihood of injury to occupants.

***Stone Chimneys***

- Reinforcement of the stone chimneys on the hotel roof with internal core steel bracing and a concrete ring in the attic, and reinforcing stone chimneys at the cottages, would reduce the likelihood of falling stones and injury to occupants on the ground.

***South Wing Interior Walls***

- Reinforcement of the non-structural two-story gypsum block walls at the Great Lounge with an internal steel frame would reduce the likelihood of collapse and injury to occupants; providing of four shear walls at the Solarium and at the Elevator Lobby would add strength and stability to these parts of the building.

***Exterior Walls***

- Reinforcement of the exterior granite veneer with stainless steel pins throughout the exterior of the hotel on all floors would reduce the likelihood of falling objects and injury to occupants exiting the building.

***Porte Cochere***

- The entry canopy and Porte Cochere would be tied together by either using connections to a new maintenance shed or a slip joint created to reduce the damage to these structures.

***Mechanical, Electrical, and Plumbing Equipment***

- Bracing major MEP equipment would reduce the likelihood of injury to occupants from moving equipment;
- Providing joints at the utility lines would reduce the likelihood of utility lines breaking, spilling contents, and causing additional damage or injury to occupants and the building.

**Conclusion:** Seismic safety improvements proposed under Alternative 2 would meet the minimum RP6 life-safety performance standard for the 500-year (BSE-1) earthquake and the 2,500-year (BSE-2) earthquake. In addition, recommended (but not required) measures for seismic stability and structural strengthening would be implemented. These actions would substantially decrease the threat to life and property at The Ahwahnee from seismic events, resulting in a local, long-term, moderate, beneficial impact.

***Cumulative Impacts***

Past projects that contributed to adverse geohazard impacts on life and property within the project area included the original construction and expansion of The Ahwahnee in areas where damage from earthquakes could occur; although the structure did conform to seismic standards

at the time it was built. The hotel and cottages meet the current RP6 BSE-2 collapse-prevention standard. Current or reasonably foreseeable projects that could contribute to beneficial impacts (i.e., threat reduction) related to geohazards include the planned seismic strengthening of The Ahwahnee dormitory, which does not meet the current BSE-1 safety performance standard. Cumulative actions in combination with Alternative 2 would result in a net local, long-term, moderate, beneficial impact by reducing threats to life-safety and property at The Ahwahnee.

## **Environmental Consequences of Alternative 3**

### **Analysis**

Seismic safety improvements proposed under Alternative 3 would meet the RP6 life-safety performance standards for the 500-year (BSE-1) earthquake and the 2,500-year (BSE-2) earthquake. Alternative 3 proposes many of the same measures as Alternatives 1 and 2, with some modifications that would meet required compliance and recommended goals with consideration of cost and feasibility. The required and recommended measures would result in the following:

#### ***Dining Room***

- Bracing the Dining Room in the north-south and in the east-west direction would prevent the Dining Room from separating from the kitchen wing and the main hotel building core in a seismic event, resulting in a decreased potential for injury to occupants from associated falling hazards, and of significant damage to the structure;
- Capping and pinning of granite veneers at the western Dining Room columns would interconnect and reinforce these features, resulting in a decreased risk of injury to occupants from falling stones;
- Reinforcement of glazing on windows over 16 square feet in the Dining Room and Solarium would prevent the windows from shattering during a seismic event, reducing the likelihood of injury to occupants.

#### ***Stone Chimneys***

- Reinforcement of the stone chimneys on the hotel roof with internal core steel bracing and a concrete ring, and reinforcing the stone chimneys at the cottages, in the attic would reduce the likelihood of falling stones and injury to occupants on the ground.

#### ***South Wing Interior Walls***

- Reinforcement of the non-structural two-story gypsum block walls at the Great Lounge with an internal steel frame would reduce the likelihood of collapse and injury to occupants.

#### ***Exterior Walls***

- Exterior granite veneer located above egress points would be pinned, resulting in a reduced likelihood of falling stones and injury to occupants exiting the building.

#### ***Porte Cochere***

- The entry canopy and Porte Cochere would be tied together by using connections to a new maintenance shed to reduce the damage to these structures.

### ***Mechanical, Electrical, and Plumbing Equipment***

- Bracing major MEP equipment would reduce the likelihood of injury to occupants from moving equipment;
- Providing flexible joints at the utility lines would reduce the likelihood of utility lines breaking, leaking, and causing additional damage or injury to occupants and the building.

**Conclusion:** Seismic safety improvements proposed under Alternative 3 would meet the minimum RP6 life-safety performance standard for the 500-year (BSE-1) earthquake and 2500-year (BSE-2) earthquake. These actions would substantially decrease the threat to life and property at The Ahwahnee from seismic events, resulting in a local, long-term, moderate, beneficial impact.

### **Cumulative Impacts**

Past projects that contributed to adverse geohazard impacts on life and property within the project area included the original construction and expansion of The Ahwahnee in areas where damage from earthquakes could occur; although the structure did conform to seismic standards at the time it was built. The hotel and cottages meet the current RP6 BSE-2 collapse-prevention standard.

Current or reasonably foreseeable projects that could contribute to beneficial impacts (i.e., threat reduction) related to geohazards include the planned seismic strengthening of The Ahwahnee dormitory, which does not meet the current BSE-1 safety performance standard. Cumulative actions in combination with Alternative 3 would result in a net local, long-term, moderate, beneficial impact on geohazard threats to life and property at The Ahwahnee.

## **Soils**

Soil composition in Yosemite Valley varies from fine silt and sand to fine gravel. Most soils have a relatively undeveloped profile, indicating their relatively recent deposition and young geologic age.

The National Park Service groups soil types into three general categories: *sensitive* soils, *resilient* soils, and *other* soils. *Sensitive* soils support, or have the potential to support, highly valued vegetation communities such as meadows and wetlands. Sensitive soils have an aggregate structure and chemistry that are easily affected by disturbance. *Resilient* soils are those capable of withstanding alteration and heavier use without permanent deformation, or that recover more easily from alteration and disturbance. Resilient soils are typically well-drained, upland sandy soils. *Other* soils are not considered highly valued or resilient and are generally more abundant. These soils are not likely to support plant communities that are rare or notably diverse.

As defined in a 1991 study of soils in Yosemite Valley (SCS 1991), soils in the project area consist of *resilient* soils (Miwok complex) and *other* soils (Mollic xerofluvents).

In 2009, a total of 11 soil boring and two hand-auger samples were taken within or near the project area. Samples from a series of seven soil borings at varying depths were taken in May 2009, as part of an ongoing utilities upgrade in Yosemite Valley. These borings ranged in depth between 21.5 and 36.5 feet, with soils types generally consisting of silty sands, medium dense to dense poorly graded sands, and decomposed granite with small cobbles (Kleinfelder 2009). In August 2009, samples from one soil boring reaching a depth of 31.5 feet and two hand augers reaching a depth of 4.5 feet each were taken as part of a foundation investigation for The Ahwahnee.

dormitory. Soils consisted of primarily silty sands, medium to fine sands, and gravels. Some organic matter was observed in the near-surface soils in the hand-auger samples (Moore Twining Associates, Inc. 2009).

The results from three soil borings taken in August 2009, in the immediate vicinity of The Ahwahnee hotel, indicate that subsurface soils consist primarily of alluvial deposits of sand, silty sand, and sand with gravel deposits ranging in consistency from loose to very dense. In general, the sand layers were loose to medium dense in the upper 10 to 15 feet and became denser with depth. However in one boring, loose sand deposits were encountered at depths of approximately 33 and 40 feet and between 44 and 58 feet, and in another boring at depths between approximately 33 and 48 feet. The gravel layers encountered ranged in thickness from 4.5 to 11 feet and were dense to very dense (Treadwell & Rollo 2009).

## Environmental Consequences Methodology

Soils analysis was based on a qualitative assessment of generalized soil types and typical effects of the type of impact described.

Types of soil impacts evaluated include soil removal, soil profile mixing, soil compaction, soil erosion, and soil contamination. Proposed activities that may result in soil impacts include the construction of site drainage, utility corridors, foundation footings, and alterations to existing road and trail corridors.

- **Soil Removal.** Grading the soil surface can result in changes to basic soil properties, such as overall texture, chemistry, and permeability. Excavation and removal of surficial soil in previously undisturbed areas would result in a long-term impact because the basic soil properties of the area, which have taken thousands of years to develop, would be altered. Paving or impermeable hardening the surface reduces water movement and alters the normal physical and chemical soil processes.
- **Soil Profile Mixing.** Soil excavation, backfilling, and redistribution in previously undisturbed areas result in removal or mixing of the native soil profile and disrupt soil structural characteristics, interrupting or altering the chemical, physical, and biological processes that naturally occur in the soil. The degree of impact is dependent upon the depth and extent of the disruption. It may take many years to redevelop the soil profile.
- **Soil Compaction.** Soil compaction may occur as a result of construction activities in areas of intensive use such as trails, campgrounds, and picnic areas. Soil compaction reduces infiltration rates, thereby increasing surface runoff and the potential for erosion. Deep compaction of soils may impede water table recharge or shallow groundwater flow. In turn, these effects could alter processes such as nutrient transfer, biological processes such as root development and microbial patterns, and physical processes such as soil structure. Vegetation growth on compacted soils is often limited due to low infiltration and poor root penetration.
- **Soil Erosion.** Removal of vegetation through grading activities or pedestrian use and soil compaction may result in accelerated erosion of surface soils. Soils on steep slopes and along watercourses are especially susceptible to erosion.
- **Soil Contamination.** The release of chemical constituents into the soils as a result of pavement installation, untreated runoff from paved surfaces, or from incidental spills, may contaminate downgradient water bodies or groundwater, and may alter micro- or macro-organism populations, diversity, and dynamics. Machinery involved with construction activities may release small amounts of natural and synthetic petrohydrocarbons into soils through equipment failure or normal operations.



**Context:** With Best Management Practices in place, the impact would be detectable only within the vicinity of the proposed action. Thus, the setting or area within which impacts are analyzed would be local.

**Duration:** Duration of soils impacts would be characterized as short-term or long-term. Short-term impacts could be restored when project construction is completed and would last 20 years or less. Long-term impacts would last over 20 years.

**Intensity:** The evaluation of the intensity of impacts on soils focuses on resilient and other soils, as these are the soil types found in the project area. Impact intensity was characterized as negligible, minor, moderate, or major. Negligible impacts would be small in scale in previously disturbed soils or not detectable. Minor impacts would be small scale (1 to 5 acres) and would include mostly short-term impacts. Moderate impacts would be greater in extent (>5-10 acres), measureable, and potentially long-term. Major impacts would have of substantial extent (> 10 acres) and with primarily long-term effects.

**Type:** Impacts are considered adverse if implementation of an alternative would result in removal of native soils, soil profile mixing, and/or soil compaction, erosion, or contamination. Impacts are considered beneficial if implementation of an alternative would restore native soils, reduce soil erosion, decompact soils, or reduce existing soil contamination.

## Environmental Consequences of the No Action Alternative

### Analysis

Under the No Action Alternative, there would be no ground disturbing activities at the hotel. Ongoing routine maintenance and repair of existing and, in some cases, aging underground utilities would continue in the project area, resulting in soil removal and soil profile mixing during excavation activities. Construction impacts would be minimized by limiting the area of disturbance, salvaging existing soils for use as backfill, and implementing the park's Best Management Practices (see Appendix E) that would reduce the potential for soil erosion and transport, and minimize contamination from construction equipment.

Continued use of the existing low water crossing on the unnamed seasonal tributary near the cottages could result in soil erosion and soil compaction, particularly during wet periods. Continued use of the existing hardened fire access around the hotel could result in soil compaction where emergency vehicles may travel outside of the existing access corridor to navigate the exterior of the hotel.

**Conclusion:** Impacts on soils under the No Action Alternative would occur in areas previously disturbed by the construction of the hotel complex and ongoing operations. Repeated disturbance to soils from maintenance of underground utilities would result in local, short-term, minor, adverse impacts and a local, long-term, minor, adverse impact on soils in the project area. Use of Best Management Practices (Appendix E) to minimize spills, soil compaction, and erosion during construction activities would continue.

Continued use of the hardened earth low water crossing for fire department access south of the cottages, and continued use of the inadequately sized fire department access at the hotel, would result in minor to moderate impacts on soils from potential soil erosion and compaction. In addition, there would continue to be local, long-term, minor, adverse, indirect effects on soils from ongoing disruptions of natural groundwater flows and resultant effects on soil characteristics over time.

## Cumulative Impacts

Localized short-term, adverse impacts on surface and sub-surface soils could result from construction activities associated with some of the past, current, and reasonably foreseeable actions planned or approved within the park. Most soils in the project area have been previously disturbed by historic construction pre-dating the construction of The Ahwahnee, construction of The Ahwahnee and associated structures (1927-1928), construction activities during the Navy hospital period (1943-1945), landscaping activities, and installation and maintenance of utility lines, roads, and paths. Recently completed projects which might have contributed to adverse impacts on soils within the project area include the *Replace Ahwahnee Dormitory Steam Line* project.

Current or reasonably foreseeable projects that could contribute to impacts on soils include the *Merced Wild and Scenic River Comprehensive Management Plan*, *Parkwide Invasive Plant Management Plan Update*, *Scenic Vista Management Plan*, *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life Safety Improvements Project*, *The Ahwahnee Dormitory Foundation Rehabilitation Project*, and *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence* project. Implementation of these current and/or reasonably foreseeable future actions would likely have short-term adverse impacts due to construction activities. Specific impacts would depend upon the nature, location, and design of the action. Overall, the cumulative actions in combination with the No Action Alternative would result in a net local long-term, minor, adverse impact on soils.

## Environmental Consequences of Alternatives 1, 2, and 3

The majority of actions proposed for the comprehensive rehabilitation of The Ahwahnee would occur within structures and would not affect soils. Therefore, only those actions that would affect soils are analyzed below.

The proposed actions that may impact soils are the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

Soil disturbance would primarily occur in areas with ‘resilient’ or ‘other’ soils that have been previously disturbed; however the depth of the previous disturbance is not known. Ongoing disruptions of natural subsurface flows that have impacts on soil characteristics are likely, due to the presence of the hotel, adjacent structures, paved and unpaved transportation/pedestrian corridors, and utilities. Fill material is likely present in the project area, but the locations and volumes are not known.

The following restoration and construction activities would result in the disturbance of surface and near-surface soil in the area immediately adjacent to or beneath the hotel, cottages, dormitory, and pavement; along existing service road corridors; and along existing pathways for all action alternatives.

### ***Fire and Life Safety***

#### ***Fire Department Access Road***

Code-required improvements to fire truck access around the exterior of the hotel would require widening and extending the length of the existing turf-covered hardened base at the western and southern portions of the hotel. Soils along a segment of the proposed alignment have previously

been compacted and hardened to accommodate the existing fire access alignment built in the 1970s. New compaction and hardening would occur primarily in areas where the existing alignment would be altered and where the existing access route would be extended to the south and east of the hotel's south and east wings. Soil removal and soil profile mixing during excavation and grading activities, as well as soil compaction (to provide the improved, or in some areas new, 'hardened base') would disturb approximately 0.45 acre of what the 1991 soil survey mapped as 'resilient' soils. However, it is likely that a substantial proportion of the disturbed area is structural fill or imported soil ('other' soil), as it directly abuts the hotel/terrace footprint and the maintained turf lawn.

Code-required improvements to fire truck access to the cottages would require widening and leveling the existing service road and an unmaintained service road south of the cottages, replacing or installing gravel, and constructing a new turnaround area. This would result in short-term and long-term adverse impacts on 0.04 acre of 'resilient' soils and 0.58 acre of 'other' soils due to soil removal and soil profile mixing during excavation and grading activities.

In addition, short-term adverse impacts on approximately 0.02 acre of 'resilient' soils would result from the replacement of five existing culverts at drainage crossings in order to meet the width and load bearing requirements for a fire access road. The removal and profile mixing of soils during excavation would result in adverse impacts on soils. In areas of close proximity to drainage crossings, this would result in an increased risk for soil erosion and transport.

Similarly, short-term, adverse impacts on approximately 0.01 acre of 'other' soils would result from excavation activities during installation of a code-required bridge over an unnamed seasonal tributary east of the cottages. There would be an increased potential for soil erosion and transport due to the close proximity of a tributary. However, bridge installation may result in beneficial impacts on soils by removing the need for vehicles to drive through the seasonal tributary. This would reduce the potential for soil compaction, soil erosion, and promote improved surface water flow in an otherwise disturbed area.

#### **Waterproofing**

Code-required waterproofing improvements at the hotel basement would require the installation of a trench drain at the basement entry. This would result in short-term disturbance of less than 0.01 acre of 'resilient,' previously disturbed soils during excavation.

#### ***Seismic Strengthening***

Bracing the Dining Room would require the installation of new footings to support new brace frame structures in the crawlspace below the kitchen. Excavation and installation of the footings would cause short-term and long-term disturbance to approximately 0.01 acre of 'resilient' soils from soil removal and soil profile mixing.

#### ***Accessibility***

ADA-ABA compliant access to the South Mezzanine meeting rooms would be provided by installing a limited use-limited access elevator. This would require excavation to modify footings under the hotel, resulting in short-term and long-term impacts on less than 0.01 acre of 'resilient' soils.

Accessibility improvements to the wedding lawn access path would require minor grading and hardening of previously disturbed soils, resulting in short-term impacts on 0.04 acre of 'resilient' soils.

### **Operational Efficiency**

The extension of a utility corridor underneath existing pathways to the cottage area would require the excavation and construction of a new, 4-foot deep trench. This would result in short-term and long-term impacts on 0.18 acre of ‘resilient’ and 0.07 acre of ‘other’ soils. However, consolidating utilities into the corridor would reduce the possibility of soil disturbance from repairs and maintenance on the existing, dispersed underground utilities.

### **Mitigation**

Construction impacts would be minimized by limiting the area of disturbance, salvaging existing soils for use as backfill, and implementing best management practices (see Appendix E) that would reduce the potential for soil erosion and transport, and minimize contamination from construction equipment.

**Conclusion:** Impacts on soils under Alternatives 1, 2, and 3 would occur in areas previously disturbed by the construction of the hotel complex and ongoing operations, though some excavations could exceed the vertical extent of previously disturbances. The proposed actions to meet fire and life-safety, seismic, and accessibility codes and standards would impact approximately 0.75 acre of ‘resilient’ soils and 0.67 acre of ‘other’ soils. Construction impacts on soils would be mitigated by ongoing implementation of Best Management Practices to minimize spills, soil compaction, and erosion. This would result in a local, short-term and long-term, minor, adverse impact on soils in the project area. In addition, there would continue to be local, long-term, minor, adverse, indirect effects on soils from ongoing disruptions of natural groundwater flows and resultant effects on soil characteristics over time.

There would be a local, long-term, minor, beneficial impact on soils from the consolidation of underground utilities and the removal of a hardened earth low water crossing at the unnamed seasonal tributary east of the cottages.

### **Cumulative Impacts**

Localized short-term, adverse impacts on surface and sub-surface soils could result from construction activities associated with some of the past, current, and reasonably foreseeable actions planned or approved within the park. Most soils in the project area have been previously disturbed by historic construction pre-dating the construction of The Ahwahnee, construction of The Ahwahnee and associated structures (1927-1928), construction activities during the Navy hospital period (1943-1945), landscaping activities, and installation and maintenance of utility lines, roads, and paths. Recently completed projects which might have contributed to adverse impacts on soils within the project area include the *Replace Ahwahnee Dormitory Steam Line* project.

Current or reasonably foreseeable projects that could contribute to impacts on soils include the *Merced Wild and Scenic River Comprehensive Management Plan*, *Parkwide Invasive Plant Management Plan Update*, *Scenic Vista Management Plan*, *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life Safety Improvements Project*, *The Ahwahnee Dormitory Foundation Rehabilitation Project*, and *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence* project. Implementation of these current and/or reasonably foreseeable future actions would likely have short-term adverse impacts due to construction activities. Specific impacts would depend upon the nature, location, and design of the action. Overall, the cumulative actions in combination with Alternatives 1, 2, or 3 would result in a net local long-term, minor, adverse impact and a local, long-term, minor, adverse impact on soils.

## **Hydrology**

### **Affected Environment**

#### **Surface Water**

The Merced Wild and Scenic River flows along the southeastern boundary of the project area, flowing east and then south as it passes The Ahwahnee cottages. Royal Arch Creek, a small seasonal tributary to the Merced River, flows north to south between the hotel and the cottages. There is also a north-south unnamed seasonal Merced River tributary to the east of Royal Arch Creek and the cottages. Both of the seasonal tributaries flow primarily in winter, spring, and early summer, and are fed by a combination of groundwater, rainwater, and snowmelt from the cliffs to the north of the project area. There is little or no flow in these tributaries the rest of the year.

Five culverts direct surface water under the service road between the hotel and cottages area: a twin culvert at Royal Arch Creek, and a single pipe culvert and a twin pipe culvert at the unnamed seasonal tributary. These culverts are considered to be in good condition. However, the road to the cottages narrows to as little as 9 feet wide over these culverts; to comply with fire code, all existing culverts may need to be improved or replaced to support road widening to a code-compliant width. In addition, it is not known if the existing culverts comply with fire code load-bearing requirements.

There is a low-water crossing on the unmaintained service road that crosses a braided segment of the unnamed seasonal tributary. Low-water crossings are not compliant with current fire code requirements for all weather emergency access, and emergency vehicles and firefighters may not be subject to passing through water, ice, or soft roadbeds.

#### **Groundwater**

In general, groundwater elevations fluctuate based on seasonal precipitation, irrigation, land use, and climatic conditions. Groundwater elevations within the project area vary seasonally, being higher in the spring and early summer than during the remaining portions of the year. During spring, groundwater levels may be at or near the surface in some areas (e.g., the hotel and dormitory crawl spaces), and sump pumps are used to dewater basement areas and subgrade vaults on the property. Based on soil boring data collected in May 2009 (see ‘Soils’ section, above), free water was encountered between 2 and 5 feet below ground surface (bgs) in the immediate vicinity of The Ahwahnee hotel and across the meadow. In August 2009, free water was observed in a soil boring next to The Ahwahnee dormitory at 6 feet bgs (Moore Twining Associates Inc. 2009) and between 10.5 and 13 feet bgs in three soil borings next to the hotel (Treadwell & Rollo 2009).

#### **Hydrologic Processes**

In general, hydrologic processes within the project area between The Ahwahnee and the Merced River have been substantially altered by construction of the hotel, cottages, dormitory, parking areas, roads, utilities, and pathways. In addition, ongoing landscaping activities at The Ahwahnee, such as irrigation, affect local hydrology.

Seasonally high groundwater levels are impacting the hotel through seepage at existing foundation walls and the slab floor in the basement. The hotel’s main electrical distribution panels are located in the basement; water intrusion results in hazardous conditions for

maintenance staff. Surface runoff also enters the generator room, which has a below-grade floor, from the service yard. Sump pumps are routinely used to dewater the hotel basement and crawlspaces, as well as utility vaults, during wet periods. Water ponding also occurs near the dormitory and in parts of the parking lot during seasonal runoff and precipitation events, and contributes to icy conditions and related pedestrian safety hazards in the winter. The pedestrian safety hazards are being addressed through a separate project (see Appendix D: Cumulative Plans and Projects and ‘Cumulative Impacts,’ below.)

## Environmental Consequences – Methodology

The impact analysis for hydrologic resources was based on a qualitative assessment of the duration, intensity, type and context of the impact, as described below.

**Context:** Localized impacts would occur in the immediate vicinity of an action or in a nearby area that would be indirectly affected by an action.

**Duration:** Short-term impacts would occur during project implementation (e.g., construction) and would be less than 2 years in duration after construction is complete. Long-term impacts would remain after the alternative has been implemented and would be longer than 2 years in duration.

**Intensity:** Negligible impacts would not be detectable and would have no discernable effect on hydrology. Minor impacts would be slightly detectable, but would not be expected to have an impact on overall hydrology of the area. Moderate impacts would be clearly detectable and would have an appreciable impact on hydrology. Major impacts would be substantial, with a highly noticeable influence on hydrology.

**Type:** Adverse impacts would alter natural hydrologic conditions (e.g., impede flow, cause unnatural erosion, alter the water table, etc.) or degrade water quality. Beneficial impacts would restore natural hydrologic conditions or improve water quality.

## Environmental Consequences of the No Action Alternative

### Analysis

Under the No Action Alternative, there would be no new impacts on hydrology. The ongoing impacts of the hotel and related facilities (e.g., impacts on surface and groundwater flow from existing infrastructure) and activities (e.g., irrigation) on local natural hydrologic processes would continue.

Seasonally high groundwater levels would continue to cause seepage into crawlspaces, vaults, and the basement. Where electrical equipment, such as the hotel’s main electrical distribution panels and the emergency generator, is located, wet conditions could contribute to hazardous conditions for maintenance staff. Groundwater and surface water infiltration would also continue to contribute to deterioration of historic fabric and increase maintenance requirements.

**Conclusion:** Under the No Action Alternative, there would be no new impacts on local natural hydrologic processes at The Ahwahnee. Seasonally high groundwater would continue to create hazardous conditions in the hotel basement and seasonal runoff would continue to enter the generator room. The presence of the hotel and related facilities, as well as associated landscaping activities, would continue to have a local, long-term, minor to moderate, adverse impact on local hydrologic conditions.

## Cumulative Impacts

Construction activities that modified local hydrology in the project area began as early as 1869, and continued through the construction of The Ahwahnee in 1927 and subsequent expansion and modification of infrastructure in the area. The 2011 *Improve Porte Cochere Access Walkways and Fence*, Phase 1, corrected some of the ponding and ice-damming problems near the hotel entrance.

Current or foreseeable approved plans that could impact hydrology in the project area would include the *Merced Wild and Scenic River Comprehensive Management Plan* and the *East Yosemite Valley Utilities Improvement Plan*, both of which could result in short-term adverse impacts on hydrology from construction or restoration activities, but would likely result in long-term beneficial impacts from needed upgrades to aging water/wastewater infrastructure and guidance for protection of river values (including free flow and water quality) in Yosemite Valley. Phase 2 of the *Improve Porte Cochere Access Walkways and Fence* project would further correct ponding and icy conditions along the entry board walk west of the bellman station by regarding, adding drains, and conveying surface runoff to the existing storm drain system.

Overall, the cumulative actions in combination with the No Action Alternative would result in localized short-term, minor, adverse impacts from construction activities, and local, long-term, minor, beneficial impacts on hydrology in Yosemite Valley.

## Environmental Consequences of Alternatives 1, 2, and 3

The proposed actions that may impact hydrology are the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

#### *Fire Department Access Road*

The existing fire access road terminates at the service entrance to the cottages. In order to meet fire code access requirements, the existing access road would be extended to include the unmaintained service road on the south side of the cottage area. As part of this action, a bridge would be constructed over the unnamed seasonal tributary to provide code-compliant emergency vehicles and personnel access to the cottages. Excavation and construction of the bridge abutments could result in short-term, adverse impacts on surface flow and water quality associated with the temporary disruption of the stream channel and the increased potential for soil erosion and sediment transport. The use of heavy equipment at the banks of the tributary could result in accidental releases of fuels or other hazardous substances that could impact water quality. The development of a stormwater pollution prevention plan and a spill prevention/response plan (see Appendix E: Mitigation Measures) would help avoid or minimize potential impacts from hazardous materials during construction.

Construction impacts would be further minimized by scheduling construction activities during seasonal periods of low or no water, as this small seasonal tributary is usually dry by late summer. Additional mitigation measures would include constructing abutments above the ordinary high water mark, minimizing the disturbance area at the banks of the tributary, salvaging excavated materials for replacement after construction, returning the banks of the tributary to their pre-existing contours, and implementing Best Management Practices (Appendix E) during construction. These measures would be expected to reduce short-term adverse impacts to a minor to moderate level.

In the long-term there would be a minor to moderate, beneficial impact from removing the existing low water crossing on the seasonal tributary. Although travel on this road is only occasional, replacing the low water crossing with a bridge would decrease the potential for erosion and sediment transport caused by vehicles driving over banks and through the stream bed. In the long-term, the bridge itself would be expected to have a negligible adverse impact on hydrologic processes, due to bridge placement outside of the ordinary high water mark, and bridge design to accommodate braided stream flow to the extent feasible.

Improvement or replacement of culverts on the existing service road to meet road width and load-bearing code requirements would result in short-term impacts during construction and excavation similar to those noted above for bridge construction, but within a smaller area. Mitigation proposed would likewise be similar to those noted above for the bridge. However, culvert work would occur within the bed and banks of the tributaries and work would occur within the ordinary high water mark.

Installation of a consolidated subsurface utility corridor from the hotel to the cottages would require crossing Royal Arch Creek. Future design will dictate the exact configuration and dimensions of the utility corridor; however, it is anticipated that utilities would be suspended beneath the existing footbridge over Royal Arch Creek, resulting in no impacts on the free flow of the tributary.

#### ***Seismic Strengthening, Accessibility Compliance, and Operational Efficiency***

Groundwater levels may vary during the construction phase and design life of the project; however, based on the results of geotechnical investigations in the project area, it is anticipated that groundwater could be encountered at any time during excavation. Excavation necessary for new footings below the hotel (for seismic strengthening and installation of an ADA-compliant elevator) and trenching for the proposed utility corridor to the cottages would likely require dewatering activities. For unsupported excavation sidewalls, the dewatering would have to be effective to a depth sufficient to prevent interstitial seepage. Depending on the location of discharge, dewatering activities associated with these actions would present short-term adverse impacts on the adjacent meadow and/or Royal Arch Creek. In addition, the use of heavy equipment would present a potential for accidental releases of fuels or other hazardous substances that could impact local surface water or groundwater quality. Implementation of Best Management Practices (Appendix E) would mitigate these potential impacts to a minor to moderate intensity.

In order to minimize long-term impacts on subsurface facilities, all trench backfill would be properly placed and adequately compacted to provide a stable subgrade. In addition, during the final design phase for the utility corridor, adequate drainage should be provided to prevent surface water or subsurface seepage from saturating the utility corridor.

The proposed site drainage improvements at the basement and back dock would be expected to have a long-term, beneficial impact on local hydrology by redirecting subsurface flow from the basement toward Ahwahnee Meadow. In addition, waterproofing the hotel basement would have a long-term, beneficial impact on the structure and would reduce risks to maintenance staff working with electrical equipment.

**Conclusion:** Excavation and construction activities to replace culverts and install a bridge at seasonal tributaries could result in adverse impacts associated with the temporary disruption of the surface flow and the increased potential for soil erosion and sediment transport. In addition, the use of heavy equipment in these areas could result in accidental releases of hazardous



substances that would impact water quality. Mitigation measures (Appendix E) would include scheduling construction activity during seasonal periods of low or no water, minimizing disturbance areas, salvaging excavated materials, restoring contours of stream banks, and implementing construction best management practices. These measures would be expected to reduce short-term, adverse impacts on hydrology to a minor to moderate level.

Excavation beneath the hotel and the installation of a utility corridor would likely require dewatering activities, which would potentially result in short-term, adverse impacts on the adjacent meadow and Royal Arch Creek. Mitigation measures (Appendix E) would be implemented during construction activities to ensure that dewatering would not increase sediment loading at drainages or otherwise adversely affect the adjacent meadow. Implementation of these measures would reduce excavation impacts to local, short-term, minor, and adverse.

In the long-term, there would be a minor to moderate beneficial impact on the unnamed seasonal tributary east of the cottages from removal of a low water vehicle crossing. In addition, installation of site drainage at the hotel basement and back dock would have a local, long-term, moderate, beneficial impact on hydrology by redirecting drainage toward Ahwahnee Meadow.

### **Cumulative Impacts**

Past projects, current approved actions, or foreseeable actions would be the same as under the No Action Alternative. The cumulative actions in conjunction with Alternatives 1, 2, or 3 would result in a net local, short-term, minor to moderate, adverse impact on hydrology and a long-term, minor, beneficial impact on hydrology. The potential impacts of this project on tributaries to the Merced Wild and Scenic River are evaluated in accordance with section 7 of the Wild and Scenic Rivers Act in Appendix F.

## **Vegetation**

### **Affected Environment**

Yosemite Valley, including the area surrounding The Ahwahnee, is in the lower montane forest, a mixed conifer vegetation zone ranging from 3,000 to 6,000 feet in elevation. Dominant trees in this zone are incense-cedar, black oak, ponderosa pine, white fir, and sugar pine. This mid-elevation zone is the lowest zone that regularly receives a majority of its precipitation in the form of snow. The climate makes this zone predominantly a forest type, with intermittent riparian areas and meadows.

Vegetation in the project area consists of a mix of native and ornamental species, much of which has been manicured to emphasize the hotel as the visual focal point. Landscaping activities immediately surrounding the hotel and associated buildings include pruning, raking, removal of invasive non-native species, fertilizing, irrigating, and transplanting or seeding with native plants. Areas that are fertilized and irrigated include the main Ahwahnee lawn, the hotel entrance (flagpole area), the wedding lawn, The Ahwahnee cottage area, the Royal Arch Creek area between the swimming pool and the foot path over the creek, the ‘wildflower meadow,’ and the Dining Room terrace. Irrigation water is drawn from both domestic sources and the Merced River between March and October. Selective clearing and trimming of vegetation has also occurred for hazard tree management, routine maintenance along roads and utility corridors, and scenic vista management.

Table 3-2 presents the native and ornamental species have been documented within the project area (AECOM and ARG 2011):

<b>Table 3-2 Native and Ornamental Vegetation in the Project Area</b>	
<b>DECIDUOUS TREES</b>	<b>EVERGREEN TREES</b>
<ul style="list-style-type: none"> <li>▪ vine maple (<i>Acer circinatum</i>)</li> <li>▪ big-leaf maple (<i>Acer macrophyllum</i>)</li> <li>▪ red maple (<i>Acer rubrum</i>)</li> <li>▪ Western redbud (<i>Cercis occidentalis</i>)</li> <li>▪ Pacific dogwood (<i>Cornus nuttallii</i>)</li> <li>▪ quaking aspen (<i>Populus tremuloides</i>)</li> <li>▪ black cottonwood (<i>Populus trichocarpa</i>)</li> <li>▪ California black oak (<i>Quercus kelloggii</i>)</li> <li>▪ black oak (<i>Quercus velutina</i>)</li> <li>▪ red willow (<i>Salix</i> sp.)</li> <li>▪ apple (<i>Malus</i> sp.)</li> </ul>	<ul style="list-style-type: none"> <li>▪ white fir (<i>Abies concolor</i>)</li> <li>▪ incense cedar (<i>Calocedrus decurrens</i>)</li> <li>▪ knobcone pine (<i>Pinus attenuata</i>)</li> <li>▪ Jeffrey pine (<i>Pinus jeffreyi</i>)</li> <li>▪ ponderosa pine (<i>Pinus ponderosa</i>)</li> <li>▪ Western white pine (<i>Pinus monticola</i>)</li> <li>▪ lodgepole pine (<i>Pinus contorta</i> ssp. <i>murrayana</i>)</li> <li>▪ douglas fir r (<i>Pseudotsuga menziesii</i>)</li> <li>▪ giant sequoia (<i>Sequoiadendron giganteum</i>)</li> <li>▪ California laurel (bay) (<i>Umbellularia californica</i>)</li> <li>▪ canyon live oak (<i>Quercus chrysolepis</i>)</li> </ul>
<b>SHRUBS</b>	<b>HERBACEOUS PLANTS</b>
<ul style="list-style-type: none"> <li>▪ white alder (<i>Alnus rhombifolia</i>)</li> <li>▪ common manzanita (<i>Arctostaphylos viscida</i>)</li> <li>▪ California allspice (<i>Calycanthus occidentalis</i>)</li> <li>▪ elderberry (<i>Sambucus cerulea</i>)</li> <li>▪ English holly (<i>Ilex aquifolium</i>)</li> <li>▪ juniper (<i>Juniperus</i> spp.)</li> <li>▪ Western chokecherry (<i>Prunus virginiana</i> var. <i>demissa</i>)</li> <li>▪ Sierra coffeeberry (<i>Rhamnus rubra</i>)</li> <li>▪ Pacific rhododendron (<i>Rhododendron macrophyllum</i>)</li> <li>▪ Western azalea (<i>Rhododendron occidentale</i>)</li> <li>▪ Sierra currant (<i>Ribes nevadense</i>)</li> <li>▪ Western raspberry (<i>Rubus leucodermis</i>)</li> </ul>	<ul style="list-style-type: none"> <li>▪ purple milkweed (<i>Asclepias cordifolia</i>)</li> <li>▪ scouring rush horsetail (<i>Equisetum hyemale</i>)</li> <li>▪ field horsetail (<i>Equisetum arvense</i>)</li> <li>▪ cinquefoil (<i>Potentilla</i> sp.)</li> <li>▪ bracken fern (<i>Pteridium aquilinum</i>)</li> <li>▪ Northern goldenrod (<i>Solidago multiradiata</i>)</li> <li>▪ bleeding heart (<i>Dicentra</i> sp.)</li> <li>▪ trillium (<i>Trillium angustipetalum</i>)</li> <li>▪ Western columbine (<i>Aquilegia formosa</i>)</li> <li>▪ large periwinkle (<i>Vinca major</i>)</li> <li>▪ California wild grape (<i>Vitis californica</i>)</li> <li>▪ perennial pea (<i>Lathyrus latifolius</i>)</li> <li>▪ meadow grasses and lawn grasses</li> <li>▪ ferns</li> </ul>

## Environmental Consequences - Methodology

Vegetation analysis was based on a qualitative assessment of project area vegetation and the anticipated impacts of construction activities in the project area.

Natural processes, such as fluctuations in precipitation and groundwater availability, sustain many plant communities. This impact analysis considered whether changes would occur that affect opportunities for natural processes to take place.

Non-native species can alter soil chemical and physical properties, hamper native species establishment, and ultimately alter native plant community structure and function. This impact analysis considered whether the proposed actions would favor the establishment of non-native species, as well as the ability to contain and reverse non-native plant infestation.

**Context:** For the purposes of this analysis, all impacts on vegetation communities are considered to be local.

**Intensity:** The intensity of an impact on vegetation is a measure of perceptible changes in native plant community size, continuity, or integrity. Impact intensity is characterized as negligible, minor, moderate, or major. Negligible impacts are those that would have no measurable or perceptible changes in native plant community size, continuity, or integrity. Minor impacts would be measurable or perceptible, but would be localized within an isolated area, and the overall viability of the native plant community would not be affected. Moderate impacts would cause a measurable and perceptible change in the native plant community (e.g., size, continuity, or integrity); however, the impact would remain localized and could be reversed. Major impacts

would be substantial and highly noticeable and could be permanent in their effects on native plant community size, diversity, continuity, or integrity.

**Duration:** The duration of an impact is the time required for native plant communities to recover from the implementation of an alternative. The duration of impact is characterized as short-term or long-term. A short-term impact would have an immediate effect on the size, continuity, or integrity of native plant communities and is usually associated with transitional types of activities, such as facility construction. In general, short-term impacts on vegetation are those that would last up to 20 years following implementation of an alternative. Long-term impacts would lead to a loss in the size, continuity, or integrity of native plant communities. In general, long-term impacts would last longer than 20 years after implementation of an alternative.

**Type:** Impacts are considered adverse if implementation of an alternative would reduce the size, continuity, or integrity of a native plant community. Impacts are considered beneficial if implementation of an alternative would increase the size, continuity, or integrity of a native plant community.

## Environmental Consequences of the No Action Alternative

### Analysis

Under the No Action Alternative, there would be no new impacts on native vegetation. Vegetation within the project area would continue to be a mixture of native and ornamental species, the project area would continue to be actively landscaped, and selective clearing and trimming of vegetation would continue to occur under the guidance of parkwide management for hazard tree removal, scenic vista clearing, and routine maintenance activities.

**Conclusion:** Under the No Action Alternative, there would be no change in vegetation and vegetation management activities. The No Action Alternative would not further reduce the size or disrupt the continuity and/or integrity of native plant communities in the project area. There would be no new impacts on vegetation resources.

### Cumulative Impacts

Past projects which contributed to impacts on vegetation within the project area include: the construction and expansion of facilities in the project area beginning in the late 1800s; construction of The Ahwahnee hotel and associated structures; landscaping activities that were designed to accentuate the hotel as well as scenic vistas to and from the hotel; installation of recreational features such as a golf course at The Ahwahnee grounds; installation of utilities; and installation of roads and parking areas. These actions resulted in highly disturbed native vegetation within the project area and in the project vicinity.

Current or foreseeable approved actions under the park's *Invasive Plant Management Plan Update*, *2009 Fire Management Plan*, and *Scenic Vista Management Plan* could result in the removal of vegetation within the project area. Removal of native vegetation would be considered an adverse impact, while the removal of non-native invasive vegetation would be considered a beneficial impact. Reasonably foreseeable future actions with the potential to affect vegetation include the *Merced Wild and Scenic River Comprehensive Management Plan*, which may include short-term disturbance as well as long-term restoration activities. In conjunction with the past, present, and reasonably foreseeable future projects, the No Action Alternative would have a localized, long-term, negligible, adverse impact on native vegetation.

## Environmental Consequences of Alternatives 1, 2, and 3

The proposed actions that may impact vegetation are the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

Under Alternatives 1, 2, and 3, short-term impacts on vegetation would occur from construction activities during the upgrading of the fire department access roads, installation of utilities, and the provision of ADA-compliant pathways. The affected area is already highly disturbed by previous construction, ornamental landscaping, and pedestrian and vehicular traffic. Minor short-term impacts would include temporary removal and trampling of vegetation, as well as soil disturbance. Long-term impacts on native vegetation would occur where existing roads and paths would be widened and graveled.

#### *Fire Department Access Roads*

The existing fire access route on the western and southern side of the hotel is a turf-covered corridor with a hardened aggregate base that was constructed in the 1970s. This corridor would be realigned, reinforced, widened where needed, and extended to the eastern side of the south wing of the hotel to improve compliance with current fire code requirements. This action would impact a manicured area that contains a mixture of native and ornamental species. No trees would be removed as part of the action. Therefore the impact on native vegetation would be negligible to minor, and short-term.

Vegetation would be impacted in areas immediately adjacent to the existing gravel service road from the hotel to the cottages and the existing hardened earth service road south of the cottages, where the road would be widened to 16-feet to meet code requirements, and a new hardened turnaround area would be added near the end of the extended road. Code-required improvements to these roads would include the removal of select incense cedars that are immediately adjacent to the road corridor. In addition, some trees may be limbed to meet vertical clearance requirements for emergency vehicle access. Construction of the turnaround to the south of the cottages would occur in an area of disturbed vegetation; no tree removal would be expected.

#### *Pathways*

Herbaceous vegetation may be removed during installation of a utility corridor under the existing path from the hotel to the cottages and between the cottages. In the long-term, hardening this pathway to the cottages to meet ADA requirements would result in negligible impacts on vegetation.

The existing hardened earth path from the hotel to the wedding lawn would be further improved by minor leveling and hardening with a permeable resin surface. Because the path is already hardened and free of vegetation, the addition of a resin surface would result in negligible impacts on adjacent vegetation.

No wetland vegetation would be impacted as part of the proposed actions. The installation of Best Management Practices (Appendix E) as part of construction activities would reduce potentially sediment-laden and/or contaminated water runoff from impermeable surfaces from affecting nearby vegetation in riparian and wet meadow communities in the vicinity of the project area.

**Conclusion:** Under Alternatives 1, 2, and 3, construction activities would result in local, short-term, minor, adverse impacts on the size and continuity of native plant communities. Implementation of Best Management Practices during construction would minimize impacts on surrounding vegetation communities. The removal of select trees to meet fire code requirements along fire access roads and the hardening of select pathways to meet accessibility requirements would result in local, long-term, minor, adverse impacts on the size and continuity of native plant communities.

### **Cumulative Impacts**

The list of past projects, current approved actions, or foreseeable actions that may have a cumulative impact on the project area would be the same as provided under the No Action Alternative. In conjunction with these, Alternatives 1, 2, or 3 would have a localized, long-term, minor, adverse impact on vegetation.

## **Wildlife**

### **Affected Environment**

#### **Wildlife in the Vicinity of The Ahwahnee**

Non-special status wildlife species identified as likely present within the proposed Ahwahnee project area include deer mice (*Peromyscus maniculatus*), western gray squirrels (*Sciurus griseus*), broad-footed moles (*Scapanus latimanus*), Botta's pocket gophers (*Thomomys botti*), black bears (*Ursus americanus*), mule deer (*Odocoileus hemionus hemionus*), coyotes (*Canis latrans lestes*), ringtail (*Bassariscus astutus raptor*), and raccoons (*Procyon lotor psora*). There are also several species of bat likely to occur in or near the project area, including special status species (further described below, under 'Special Status Species.')

#### **Wildlife Habitat in the Project Area**

The constant presence of people in the project area results in a reduced habitat value compared to those areas in which people are not present. Wildlife habitat in the project area consists of mixed conifer and California black oak communities (upland) and other (urban) vegetation associated with ornamental landscaping at the hotel grounds. There are wet meadow communities adjacent to the project area.

#### ***Upland Habitat***

Variability in canopy cover and understory vegetation make the conifer habitat suitable for a wide variety of wildlife species, such as black bears, acorn woodpeckers (*Melanerpes formicivorus*), and band-tailed pigeons (*Patagioenas fasciata*). Denser stands of montane hardwood conifer are a favored habitat of California spotted owls (*Strix occidentalis occidentalis*); mast crops produced by trees are an important source of food to wildlife in this habitat and mature forests provide cavities for nesting birds.

Acorns provided by California black oak in Yosemite Valley are an important source of food to a variety of wildlife. Mule deer and black bears forage extensively in this habitat in years of good acorn production. Acorn woodpeckers, as their name suggests, are highly dependent on this food source. Gray squirrels, ground squirrels (*Spermophilus spp.*), deer mice, and band-tailed pigeons also feed heavily on acorns. The large, mature California black oaks also provide cover and nesting habitat for species such as great-horned owls (*Bubo virginianus*). Pallid bats (*Antrozous*

*pallidus*) favor mature oaks as roost sites. Many small birds such as ruby-crowned kinglets (*Regulus calendula*), yellow-rumped warblers (*Dendroica coronata auduboni*), and western bluebirds (*Sialia mexicana*) glean the foliage for insects or hawk them in the understory.

### **Other Habitat**

The urban habitat type found in the project area is composed primarily of stands of native and ornamental vegetation interspersed with development. Vegetation can be similar in complexity to less-disturbed habitats, with California black oak, ponderosa pine, and incense-cedar as canopy species, and a shrub understory. The quality of these habitats for wildlife is limited by their small sizes and their proximity to human activity. Structures in developed areas can, however, provide nesting or roosting habitat for species such as cliff swallows (*Hirundo pyrrhonota*) and several species of bats.

### **Meadow Habitat**

The project area contains no meadow habitat, however there is a meadow southwest of the building that abuts the project area and Ahwahnee Meadow is south of the project area. While shrubs and trees are usually absent or sparse in meadows, they can be an important habitat component in the wet meadow and around its edge. Within the herbaceous plant community, habitat layers are often present on a smaller scale, with different plant species growing to different heights. Wet meadows are generally too wet for small mammals during periods of high water, but they are an important source of green vegetation in summer for herbivores such as mule deer. Birds such as mallards (*Anas platyrhynchos*) and red-winged blackbirds (*Agelaius phoeniceus*) nest in wet meadows, where the water and tall vegetation can be barriers to predators. Amphibians may breed in the shallow waters found in this habitat.

## **Environmental Consequences – Methodology**

Wildlife analysis was based on a qualitative assessment of wildlife either known to occur or that could occur in the project area and the effects anticipated as a result of construction activities.

**Context:** Due to the limited and localized nature of the proposed actions that could affect wildlife, impacts would be detectable only locally, within the vicinity of the proposed action. No regional impacts would be expected.

**Duration:** Short-term impacts are those that would have an immediate effect on native habitat, diversity, and native wildlife populations, but would not cause long-term declines in populations or diversity. Long-term impacts are those that would lead to a loss of native habitat, diversity, and species populations as exhibited by a decline in species abundance, viability, and/or survival.

**Intensity:** The intensity of the impact considers effects of an action on the size and integrity of native habitats, diversity, and species population. Negligible impacts would induce no measurable or perceptible changes on wildlife habitat or populations. Minor impacts would be localized within a relatively small area, and the impacts on the integrity of animal populations would not be expected to have an overall effect on natural community structure. Without further impacts, negative effects may be reversed, and habitat quality would recover. Moderate impacts would be those clearly detectable on wildlife habitat and populations and would be sufficient to cause a change in the abundance, distribution, quantity, or integrity of species; community ecology (e.g., the number of different kinds of species present); or natural processes (e.g., hydrology). Major impacts would be substantial and highly noticeable, with the potential for permanent landscape-

scale changes in the distribution, quantity, or integrity of species; community ecology; or natural processes.

**Type:** The type of impact considers whether the impact would be beneficial or adverse. Impacts are considered beneficial if an action causes no detrimental effect and results in an increase in the size or integrity of species populations or habitat components, native ecosystem processes, native species richness/diversity, or native habitat quantity and quality. Impacts are considered adverse if they degrade the size, integrity, or diversity of native habitat quantity and quality.

## Environmental Consequences of the No Action Alternative

### Analysis

Ongoing habitat disturbance from human activities at The Ahwahnee include noise, human presence, vehicle traffic, and artificial light. Current levels of human use and vehicular disturbance would continue. Under the No Action Alternative, there would be no new impacts on wildlife.

**Conclusion:** Under the No Action Alternative, there would be no new impacts on wildlife habitat or populations.

### Cumulative Impacts

Past projects that have contributed to habitat disturbance within the project area include the construction and expansion of facilities in the project area beginning in the late 1800s. Recent projects that have contributed to adverse impacts on wildlife within the project area include construction repairs conducted under the *2009 Interim Rockfall Parking Plan* and the rehabilitation or replacement of braking pads and asphalt roads under the *Yosemite Valley Shuttle Bus Stop Improvements project*. These actions would have resulted in minor, adverse, impacts on wildlife habitat within the project area due to short-term disturbance associated with construction, including noise, increased human presence, and use of heavy equipment.

Current or reasonably foreseeable projects that could result in adverse impacts on wildlife include the *2009 Fire Management Plan*, which could result in short-term, minor adverse impacts from vegetation removal. In the long term, fire management would have a beneficial impact on wildlife by improving habitat and reducing the chances of catastrophic fire in the vicinity. Beneficial impacts on wildlife may also result from the *Merced Wild and Scenic River Comprehensive Plan* and the *Invasive Plant Management Plan Update*, as they would address resource protection and habitat restoration issues and removal of nonnative species.

Improvement projects that may adversely impact wildlife within the project area include, the *Scenic Vista Management Plan*, which could include mechanical thinning, and trimming of vegetation to restore views, and the *East Yosemite Valley Utilities Improvement Plan*, which may result in habitat removal and disturbance, and short-term visual and noise disturbance associated with construction. These projects could result in negligible to minor, short-term and long-term, adverse impacts.

Overall, the cumulative actions in combination with the No Action Alternative could result in local, short-term and long-term, negligible to minor, adverse impacts, and local, long-term, moderate, beneficial impacts on wildlife habitat and populations.

## Environmental Consequences of Alternatives 1, 2, and 3

The proposed actions that may impact wildlife are generally the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

Short-term adverse impacts on wildlife habitat and populations resulting from construction activity would include increased noise disturbance, increased human presence, heavy equipment use, and increased vehicle traffic. In addition to ongoing impacts resulting from normal hotel operations and visitor use, the impacts of construction activity are expected to be minor.

Habitat disturbance during project implementation would occur in primarily in upland and ‘other’ habitat, in the manicured landscape surrounding the hotel and cottages. There is no meadow habitat in the project area, however there is meadow habitat adjacent to the project area. Wildlife species that use the meadow for foraging or nesting may be impacted by construction activities.

Impacts on wildlife habitat and populations, including wildlife that may be resident in the structures (e.g., bats), would be minimized or avoided with the implementation of mitigation measures described in the wildlife section of Appendix E. These measures would include preconstruction surveys and limiting construction activities during critical breeding and nesting times for bird and bat species, in particular.

In the long term, there would be minor, adverse impacts from disturbance to upland and other habitat from improvements made to the fire department access road to the cottages, including widening of the road, removal of select incense cedars closest to the access road, and tree limbing to meet vertical clearance requirements. These impacts would be mitigated through preconstruction surveys, limiting construction periods, and consultation with the park wildlife biologist (see Appendix E).

**Conclusion:** Habitat in the project area is already disturbed from previous alterations to native vegetation, construction of facilities, and normal hotel operations. With the implementation of mitigation measures for wildlife species (Appendix E), temporary habitat disturbance from construction activities would result in local, short-term, minor, adverse impacts. There would be a local, long-term, minor, adverse impact on upland habitat from removal of select trees and some road widening for fire access road improvements. Implementation of mitigation measures with a focus upon avoidance, limiting construction activities during breeding seasons, and conducting surveys immediately before construction, would minimize impacts on wildlife habitat and populations.

### Cumulative Impacts

The list of past projects, current approved actions, or reasonably foreseeable actions that may have a cumulative impact on the project area would be the same as provided under the No Action Alternative. In conjunction with these, Alternatives 1, 2, or 3 would have a local, short-term, negligible to minor, adverse impacts, and local, long-term, moderate, beneficial impacts on wildlife habitat and populations.



## **Special Status Species**

### **Overview**

The U.S. Fish and Wildlife Service (USFWS) and the State of California Department of Fish and Game (CDFG) classify threatened, endangered, or rare species of plants and animals as those that have undergone serious national, state, or local declines, and which may be threatened with extinction if not otherwise protected. Species that are being monitored because they are undergoing noticeable declines or are threatened by significant loss of habitat, but are not protected by law, may be categorized by the state as rare or sensitive.

Federal and state regulations, including section 7 of the 1973 Endangered Species Act (ESA), Council on Environmental Quality (CEQ) regulations, as well as NPS *Management Policies 2006* (NPS 2006a), require all federal agencies to conduct an impacts analysis and consult with the USFWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or their designated critical habitat.

In addition, CEQ regulations for implementing NEPA (section 1508.27) also require considering whether the proposed action may violate federal, state, or local law or requirements imposed for the protection of the environment. For this reason, species listed under the California Endangered Species Act or accorded special status by the California Department of Fish and Game (i.e., species considered rare or sensitive and monitored by the California Natural Diversity Database) are included in this analysis.

### **Special Status Species Considered**

#### **Special Status Wildlife Species**

For the purposes of this assessment, “special status species” are defined as those that are: listed by the USFWS as endangered, threatened, proposed, or candidate; or, listed by the State of California as endangered, threatened, candidate, species of special concern, fully protected, or bird species of special concern. Based on species lists obtained from the USFWS and the CDFG, reported observations, scientific research, and professional judgment on the part of NPS staff, a list of 23 special status wildlife species that have the potential to occur in Yosemite Valley was developed (Table 3-3). From this list, NPS staff determined that 19 special status wildlife species are known or have the potential to occur in the project vicinity of The Ahwahnee Comprehensive Rehabilitation Plan, and are discussed in more detail below.

#### **Special Status Plant Species**

The National Park Service has determined that no special status plant species occur, or are likely to occur, or would be affected by the proposed action.

#### **Federal Special Status Species**

There are no federally listed threatened, endangered, proposed, or candidate species that are known to occur or have the potential to occur in the project vicinity. The National Park Service will consult with the U.S. Fish and Wildlife Service to obtain an updated list of federally endangered or threatened species prior to project implementation.

### **Federally Designated Critical Habitat**

No critical habitat has been designated for any federally listed species within the project area.

### **State of California Special Status Species**

Of the 19 species that are known or have the potential to occur in the project area, 3 bird species are listed as endangered, 3 bird species are listed as a fully protected, and 9 bird species are listed as species of special concern by the state of California. In addition 5 bat species are listed as California species of special concern.

### **Special Status Species Categories**

The various federal and state categories for special status species considered for this analysis are defined below:

**Federal threatened:** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its national range.

**Federal candidate:** Candidate species are plants and animals for which the U.S. Fish and Wildlife Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Federal Candidate Species are also known as “warranted but precluded.”

**California endangered:** Any species that is in danger of extinction throughout all or a significant portion of its range in the state.

**California threatened:** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its state range.

**California species of special concern:** Any species that may become vulnerable to extinction on a state level from declining population trends, limited range, and/or continuing threats; could become threatened or endangered.

**Table 3-3  
Special Status Wildlife Species in Yosemite Valley**

Species	Federal ESA <sup>1</sup>	State CESA <sup>2</sup>	Habitat Type	Potential Occurrence in Project Area	Selected for Further Analysis
<b>AMPHIBIANS</b>					
Mount Lyell salamander ( <i>Hydromantes platycephalus</i> )		CSC	High elevation, 2100 to 3700 m (6,890 to 12,139 ft), snowmelt seep and waterfall habitat throughout the Sierra Nevada. Several populations of Mount Lyell salamanders at lower elevation in the spray zones of waterfalls in Yosemite Valley (1200 to 1300 m (3,937 to 4,265 ft) and in riparian areas at lower elevation, 1400 to 2000 m (4,593 to 6,562 ft).	Not likely. Believed restricted in range; known from several locations in Yosemite Valley, but habitat is not likely in project area.	Dismissed
<b>BIRDS</b>					
harlequin duck ( <i>Histrionicus histrionicus</i> )		CSC, BSSC	Breeding range includes Sierra Nevada. Breed along clear, fast - flowing rivers and streams with substantial streamside vegetation.	Low. Habitat may be adjacent to project area.	Yes
northern goshawk ( <i>Accipiter gentilis</i> )		CSC, BSSC	Moderately dense coniferous forests between 1500 and 2700 meters (4920 and 8860 ft). Hunt in a variety of vegetative cover, including meadow edges.	Medium. Most observations in Merced River corridor are from Yosemite Valley.	Yes
northern harrier ( <i>Circus cyaneus</i> )		CSC, BSSC	Nest on the ground. Favor open areas such as grasslands, meadows, wetlands, and agricultural clearings. Rarely seen migrant in Yosemite.	Medium. Majority of observations in the park are from meadows in Yosemite Valley.	Yes
golden eagle ( <i>Aquila chrysaetos</i> )		CFP	Favor grasslands and areas of shrubs or saplings, and open-canopied woodlands of blue oaks. Can range above tree-line in summer. Hunt in meadows, clearings, rock outcroppings, granite shelves, fell fields, talus, and other open or openly wooded habitats.	Medium. Majority of observations from Merced River corridor are from Yosemite Valley.	Yes
bald eagle ( <i>Haliaeetus leucocephalus</i> )		CE, CFP	Favor lakes and rivers with abundant prey (mostly fish) and large trees in which to nest.	Medium. Suitable habitat is present.	Yes
peregrine falcon ( <i>Falco peregrinus</i> )		CFP	Nests are often scrapes on ledges or cliffs, a habit observed in Yosemite Valley. hunt in a wide variety of habitats including meadows, woodlands, marshes, and mudflats.	High. Currently known to occur in Yosemite Valley. Suitable foraging habitat is present.	Yes
long-eared owl ( <i>Asio otus</i> )		CSC, BSSC	Found from blue oak savannah up to ponderosa pine and black oak habitats, usually in association with riparian habitats. In Yosemite, they are known to nest in riparian forests and oak-conifer woodlands.	Low. Only three records from Yosemite Valley.	Yes

**Table 3-3  
Special Status Wildlife Species in Yosemite Valley (continued)**

Species	Federal ESA <sup>1</sup>	State CESA <sup>2</sup>	Habitat Type	Potential Occurrence in Project Area	Selected for Further Analysis
<b>BIRDS (CONTINUED)</b>					
great gray owl ( <i>Strix nebulosa</i> )		CE	Require extensive, densely vegetated wet or moist meadows margined by old - growth coniferous forest from the mixed conifer through the red fir to the lower lodgepole pine zones between 750 to 2,700 meters. Breed in conifer stands with large snags and high canopy closure in the immediate vicinity of a montane meadow.	Low to Medium. An estimated 100 - 200 pairs of great gray owls occur in California with a limited geographic distribution centered in Yosemite National Park and adjacent National Forest lands. Only five observations in Yosemite Valley.	Yes
California spotted owl ( <i>Strix occidentalis occidentalis</i> )		CSC, BSSC	Areas of mature and old forest with thick canopy that contains many dense, old, live and dead trees and fallen logs. Nest in large, broken - topped conifer snags, particularly red fir, white fir, or in black oak in lower elevations.	Medium. Population density in Yosemite is higher than elsewhere in the Sierra Nevada. However, sightings have been sporadic in Yosemite Valley.	Yes
Vaux's swift ( <i>Chaetura vauxi</i> )		CSC, BSSC	Older trees and hollow snags for nesting and roosting habitat.	Low. Habitat requirements include large-diameter trees in old growth areas.	Yes
black swift ( <i>Cyseloides niger</i> )		CSC, BSSC	In Yosemite, nest near or behind waterfalls.	Low. Project area does not contain habitat, however there are known populations in Yosemite Valley.	Yes
olive-sided flycatcher ( <i>Contopus cooperi</i> )		CSC, BSSC	Forage in unobstructed canopies with high perches.	Medium. Observed in Yosemite Valley and is a fairly common summer resident in the park.	Yes
willow flycatcher ( <i>Empidonax trailii</i> )		CE	Frequent the willows found along languid streams and, to a lesser degree, within moist meadows. Deciduous trees and shrubs interspersed with open areas enhance the quality of foraging habitat.	Low. Once commonly observed in Yosemite Valley, last record in Yosemite Valley was in 1974.	Yes
yellow warbler ( <i>Dendroica petechia</i> )		CSC, BSSC	Breed primarily in riparian woodlands, up to 2,400 m in the Sierra Nevada. Other breeding habitat includes montane chaparral, ponderosa pine, and mixed conifer where substantial amounts of brush occur.	High. Recent confirmed observations in Yosemite Valley, including confirmed breeding.	Yes
<b>MAMMALS</b>					
pallid bat ( <i>Antrozous pallidus</i> )		CSC	Low to mid elevations, versatile in selection of roosting sites, including rock crevices, caves, and anthropogenic structures.	High. Recorded roosting at The Ahwahnee hotel.	Yes
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )		CSC	Low to mid elevations, concentrated in areas with mines or caves. Forage at edge habitats along streams, adjacent to or within wooded areas.	High. Suitable foraging habitat is present or adjacent to the project area.	Yes
spotted bat ( <i>Euderma maculatum</i> )		CSC	Roost in crevices in high cliff faces. Forages over meadows, along forest edges, or in open coniferous woodland.	High. Suitable foraging habitat is present or adjacent to the project area.	Yes

**Table 3-3  
Special Status Wildlife Species in Yosemite Valley (continued)**

Species	Federal ESA <sup>1</sup>	State CESA <sup>2</sup>	Habitat Type	Potential Occurrence in Project Area	Selected for Further Analysis
<b>MAMMALS (CONTINUED)</b>					
Western red bat ( <i>Lasiurus blossevillei</i> )		CSC	Roost on the underside of overhanging leaves. Forage at canopy height or low over the ground.	Medium. Suitable foraging habitat is present or adjacent to the project area.	Yes
Western mastiff bat ( <i>Eumops perotis</i> )		CSC	Presence is determined by the availability of significant rock features offering suitable roosting habitat. Foraging habitats include Dry desert washes, floodplains, chaparral, oak woodland, open ponderosa pine forest, grassland, agricultural areas, and high elevation meadows surrounded by mixed conifer forests.	High. Yosemite Valley has the highest population of the greater western mastiff bat of any locality surveyed in California.	Yes
Sierra Nevada mountain beaver ( <i>Aplodontia rufa californica</i> )		CSC	Well-vegetated, moist, cool environments. Require abundant riparian plants for harvesting and large amounts of small diameter woody debris or uprooted stumps.	Not likely. No confirmed observations in the Merced River corridor.	Dismissed
Sierra Nevada red fox ( <i>Vulpes vulpes necator</i> )		CT	High elevation barren, conifer and shrub habitats, montane meadows, talus slopes, subalpine woodlands, and fell-fields. Possible den sites include natural cavities in talus slopes or rockslides, earthen dens, boulder piles, or even the space beneath vacant cabins.	Not likely. No confirmed observations in Yosemite Valley (but several unconfirmed sightings in or near Yosemite Valley since 1977).	Dismissed
Pacific fisher ( <i>Martes pennanti</i> )	FC		Generally found in stands with high canopy closure, large trees and snags, large woody debris, large hardwoods, and multiple canopy layers. Avoid entering open areas that have no overstory or shrub cover.	Not likely. Believed to have limited potential for occurrence in Yosemite Valley. Habitat is present in the Valley; however, no recent records support their occurrence.	Dismissed

Footnotes:

<sup>1</sup> ESA = Endangered Species Act administered by the U.S. Fish and Wildlife Service.<sup>2</sup> CESA = California Endangered Species Act administered by the California Department of Fish and Game.

FT = Federal Threatened

FC = Federal Candidate

CE = California Endangered

CT = California Threatened

CFP = California Fully Protected Species

CSC = California Species of Concern

BSSC = California Bird Species of Special Concern

Source: Yosemite National Park Resources Management and Science Division, May 2011

## Special Status Wildlife Species Selected for Further Analysis

### Bird Species

#### Harlequin duck (*Histrionicus histrionicus*)

As of 2011, there are 43 records of harlequin ducks in Yosemite's Wildlife Observation Database. Of these records, 39 observations are from the Merced River corridor. From 1977 to 1985, harlequins were observed with some regularity in the Merced River. After a 15-year absence, harlequins were documented repeatedly in the Merced River between 2000-2007 (NPS 2011b). Harlequin ducks have disappeared from most of their historic breeding range in the Sierra Nevada (Beedy 2008), possibly due to hunting pressure from fishermen early in the 20th century

(Grinnell 1918, Brown 1998). In the Merced River corridor, harlequin ducks are susceptible to disturbance by hikers, rafters, and fisherman at suitable nesting sites. Such disturbances may discourage harlequin ducks from re-colonizing previously used streams and can reduce nesting success where breeding does occur (Beedy 2008).

***Northern goshawk (Accipiter gentilis)***

Northern goshawk observations have been recorded on 160 occasions in Yosemite National Park. Of these records, 54 observations were in the Merced River corridor, the majority were from Yosemite Valley. The greatest threats to northern goshawk populations are habitat loss and degradation due to the alteration of forests through timber harvest and changes in fire regimes (Keane 1999). Although timber harvest is not a concern within the park, changes in fire frequency could impact on park populations (Steel et al. 2011).

***Northern harrier (Circus cyaneus)***

Northern harriers observations have been recorded on 47 occasions in Yosemite National Park. Of these observations, 19 records are from the Merced River corridor (NPS 2011b). The majority of the records are from meadows in Yosemite Valley during the fall. Beginning in 1977, there are records of several northern harriers per decade in Yosemite Valley through 2006 (NPS 2011b). Meadow loss through conifer encroachment could reduce northern harrier habitat in Yosemite. Human disturbance and recreation activities near nest sites have also been linked to harrier decline (Burridge 1995, Unitt 2004).

***Golden eagle (Aquila chrysaetos)***

Golden eagle observations have been recorded on 273 occasions in Yosemite National Park. Of these observations, there are 74 records from the Merced River corridor. The majority of these observations are from locations in Yosemite Valley. The greatest outside threat to golden eagle populations stems from interactions with humans and human-built structures (Steel et al. 2011). In particular, collisions with structures and electrocution by power lines cause the majority of non-natural golden eagle deaths (Steel et al. 2011). Such interactions could have detrimental effects to golden eagle populations in Yosemite. Overall, the relatively intact habitats in Yosemite are beneficial to golden eagles.

***Bald eagle (Haliaeetus leucocephalus)***

Bald eagle observations have been recorded on 123 occasions in Yosemite National Park. Of those observations, 25 records are from the Merced River corridor (NPS 2011b). Roughly half of the bald eagle observations in the Merced River corridor are from areas downstream of Yosemite Valley. From the late 1970s to 1992 bald eagles were documented in the Merced River corridor at a rate of one every few years. Bald eagles may abandon territories in cases of recreational development or human disturbance near nests (Thelander 1973). Also of concern is mortality due to interactions with vehicles and human infrastructure (Steel et al. 2011).

***Peregrine falcon (Falco peregrinus)***

Peregrine falcon observations have been recorded on 118 occasions in Yosemite National Park. Of those observations, 65 records are from the Merced River corridor (NPS 2011b). By the early 1970s, peregrine falcons had all but disappeared in Yosemite National Park.

In 1978, nesting peregrine falcons were found in Yosemite Valley, the first time they had been recorded in the park for over 35 years. Since 1978, peregrine falcons have continued to recover in the park. Breeding surveys conducted in 2010 revealed eight active nests in Yosemite, the most

ever documented in one season. Primary threats to peregrine falcons include predation on young by golden eagles and great horned owls and competition with ravens for nest sites. Other threats include disturbances posed by helicopters during search and rescue flights or medical evacuations and conflicts between nesting falcons and rock climbers.

#### ***Long-eared owl (Asio otus)***

The long-eared owl has been recorded on 22 different occasions in Yosemite National Park, of which only three records are from Yosemite Valley (NPS 2011b). Long-eared owls are only known to have nested in Yosemite Valley on one occasion, in 1915. Two records in Yosemite Valley from 1987 are from the same date and general location (Yosemite School and Leidig Meadow). During one year of meadow surveys for great gray owls, long-eared owls were detected at five out of 15 meadows (Keane et al. 2011); none of these meadows were within the Merced River corridor. Known factors in the decline of long-eared owls in California are destruction and fragmentation of riparian woodlands, live oak habitats, and isolated tree groves, but other factors may also be present.

#### ***Great gray owl (Strix nebulosa)***

Great gray owl observations have been recorded on 204 occasions in Yosemite National Park. Of these observations, 21 records are from the Merced River corridor. Five of these observations were in Yosemite Valley (NPS 2011b). Human development and activities, including noise and light, and automobile traffic, may impact great gray owl presence, foraging success, and reproductive success both inside and outside Yosemite (Wildman 1992, Maurer 1999). Twenty-six cases of great gray owl mortality due to collisions with vehicles along major highways in the Yosemite region were documented between 1955-2005 (Maurer 2006, J. Maurer, S. Stock, unpubl. data). Disturbance to great gray owls from recreational activities has also been identified as a potential negative factor (Wildman 1992).

#### ***California spotted owl (Strix occidentalis occidentalis)***

California spotted owl observations have been recorded on 72 occasions in Yosemite National Park. Of these observations, 14 records are from the Merced River corridor. Sightings of California spotted owls are sporadic in Yosemite Valley. The California spotted owl is primarily threatened by habitat loss and fragmentation. Alterations of the natural fire regime in Yosemite and elsewhere have led to frequent stand replacing wildfires that destroy or reduce the quality of California spotted owl habitat (Weatherspoon et al. 1992).

#### ***Vaux's swift (Chaetura vauxi)***

Vaux's swift observations have been recorded on 24 different occasions in Yosemite National Park. Of these observations, five records are from the Merced River corridor (NPS 2011b). According to Breeding Bird Survey data from the Sierra Nevada, Vaux's swift is significantly and rapidly declining in the Sierra Nevada region (Sauer et al. 2008). Loss of roosting trees is the single greatest threat to Vaux's swifts (Shuford and Gardali 2008).

#### ***Black swift (Cyseloides niger)***

Black swifts have been observed on 32 occasions in Yosemite National Park. The vast majority of black swift observations in the park are in or near the main stem of the Merced River (NPS 2011b). Grinnell and Miller (1944) indicate Yosemite Valley and other locations in Mariposa County as nesting sites. Bridalveil Fall is suspected to be one of only three sites in California

where nesting populations of black swifts exceed 10 pairs (Roberson and Collins 2008). Habitat for black swifts within Yosemite is largely intact and protected as designated wilderness.

#### ***Olive-sided flycatcher (Contopus cooperi)***

Olive-sided flycatcher observations have been recorded on 81 occasions in Yosemite National Park. Of these observations, 15 records are from the Merced River corridor, including several observations in Yosemite Valley in the 1920s and 1970s. The most significant threat to the olive-sided flycatcher is habitat degradation and loss on both breeding and wintering grounds (Widdowson 2008). In the southern Sierra Nevada, where habitat remains essentially unchanged, declines probably have resulted from destruction of forests on wintering grounds in Central America (Marshall 1988).

#### ***Willow flycatcher (Empidonax trailii)***

Once a commonly-observed bird in Yosemite Valley, willow flycatchers are now exceedingly rare in Yosemite National Park as a whole. Gaines (1992) indicates that they had stopped breeding in Yosemite Valley by 1966. One observation from 1974 in Yosemite Valley is the most recent sightings of willow flycatchers in the Valley, though they are still seen on rare occasions elsewhere in the park. Within the Sierra Nevada, habitat degradation due to historic and/or ongoing grazing of riparian and meadow habitats appears to be associated with population declines (Siegel et al. 2008). Willow flycatcher are particularly vulnerable to brood parasitism by brown-headed cowbirds (*Molothrus ater*), which are frequently observed in Yosemite taking advantage of unnatural food sources at pack stations, stables, campgrounds, and in park residential areas.

#### ***Yellow warbler (Dendroica petechia)***

In 2010, bird surveys detected 49 individual yellow warblers in Yosemite Valley and confirmed breeding based on two specific observations: (1) an adult carrying food for young and (2) recently fledged young. Human population growth and resulting habitat degradation threaten yellow warbler populations given their sensitivity to decreases in deciduous habitat, riparian habitat heterogeneity, and riparian corridor width (Saab 1999). In Yosemite, the Monitoring Avian Productivity and Survivorship Program documented a significant decline in yellow warbler captures between 1993 and 2006 (Siegel et al. 2006).

### **Bat Species**

Special status bat species that have the potential to occur within the project area are pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), Western red bat (*Lasiurus blossevillei*), and the greater Western mastiff bat (*Eumops perotis californicus*). The majority of these bat species are somewhat specialized in their habitat requirements, preferring large trees, hollow trees, dense foliage, meadows, or snags for roosting or foraging habitat. There is suitable habitat for all 5 bat species in the project area.

A bat survey in July 1993 (Pierson and Rainey 1993) identified several pallid bat roost sites under the overhanging eaves on the east and west sides of the hotel. Night roosting sites for pallid bats were seen at "various sites around the periphery of the hotel," and at the second story balcony on the south side of the hotel.

In 2002 bats were informally identified roosting at The Ahwahnee as evidenced by guano stains on the building. Specialists were hired to exclude bats from one area of the building, and building modifications were made to prevent further roosting. In 2009, more guano was observed at The Ahwahnee on the 5th and 6th floor balconies. Specialists determined that bats were using the



building for “rests” during night time foraging but no evidence suggested a bat colony was roosting in that location (WBS 2009).

In 2010 acoustic surveys for special status bat species were performed at two locations in Yosemite Valley, at Yosemite Creek and at North Pines Campground. None of the 5 special status bat species listed above were detected in the 2010 Yosemite Valley survey (NPS 2011a).

## Environmental Consequences – Methodology

Federal agencies must consult with the U.S. Fish and Wildlife Service to ensure their actions would not jeopardize the continued existence of any federally listed or proposed threatened or endangered species, or adversely modify designated or proposed critical habitat (Endangered Species Act section 7 (a) (2)). If listed species or critical habitat are present, the federal agency must determine if the action could affect those species or their habitat.

The National Park Service makes the determination of effect for the alternatives following guidance outlined in the 1998 U.S. Fish and Wildlife Service and National Marine Fisheries Service *Endangered Species Act Consultation Handbook: Procedures for Conducting Section 7 Consultations and Conference Activities*. Although special status species include state listed and sensitive species, park sensitive species, and species with other federal (i.e., Bureau of Land Management or Forest Service sensitive), state, or local special status, in addition to species protected under the Endangered Species Act, impacts are determined following the same guidance. Potential effect determinations are as follows:

- **No Effect:** The project (or action) is located outside suitable habitat and there would be no disturbance or other direct, indirect, or cumulative impacts on the species. The action would not affect the listed species or its designated critical habitat (USFWS 1998).
- **May Affect, Not Likely to Adversely Affect:** The project (or action) occurs in suitable habitat or results in indirect impacts on the species, but the effect on the species is likely to be entirely beneficial, discountable, or insignificant. The action may pose effects on listed species or designated critical habitat but given circumstances or mitigation conditions, the effects may be discounted, insignificant, or completely beneficial. Insignificant effects would not result in take. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects or (2) expect discountable effects to occur (USFWS 1998).
- **May Adversely Affect:** The project (or action) would have an adverse effect on a listed species as a direct, indirect, or cumulative result of the proposed action or its interrelated or interdependent actions and the effect is not discountable, insignificant, or beneficial (USFWS 1998).

The impact evaluation for special status wildlife species was based on the following: (1) the known or likely occurrence of a species or its preferred habitat in the vicinity of the project area; (2) the direct physical loss or gain, or modification of habitat; (3) the effective loss of habitat (through avoidance or abandonment) due to construction activity or noise, or the species’ sensitivity to human disturbance.

As noted in the affected environment section above, there are no special status plants evaluated for this project.

## Environmental Consequences of the No Action Alternative

### Analysis

Current habitat disturbance from human activities at The Ahwahnee include noise, human presence, vehicle traffic, and artificial light. Under the No Action Alternative, there would be no new impacts on special status wildlife. Current levels of human use and vehicular disturbance would continue. Existing wildlife management activities to protect special status wildlife habitat and populations would continue.

**Conclusion:** Under the No Action Alternative, there would be no effect on special status wildlife habitat or populations.

### Cumulative Impacts

Past projects which contributed to habitat disturbance within the project area include the construction, expansion, and continuous use of facilities in the project area beginning in the late 1800s.

Other recent projects that have impacted special status wildlife within the project area include construction repairs conducted under the *2009 Interim Rockfall Parking Plan*, and the rehabilitation or replacement of braking pads and asphalt roads under the *Yosemite Valley Shuttle Bus Stop Improvements project*. These actions would have resulted in negligible, adverse, impacts on special status wildlife due to short-term disturbance associated with construction, including noise, increased human presence, and use of heavy equipment. The area impacted may include foraging habitat for bird species.

Current or reasonably foreseeable projects that could beneficially impact special status species within the project area include the *Merced Wild and Scenic River Comprehensive Plan*, the *Invasive Plant Management Plan Update* and the *2009 Fire Management Plan*. These plans may have long-term, moderate, beneficial impacts by addressing resource protection and restoration issues, including; development (and/or removal) of facilities, management of user capacities, removal of nonnative vegetation, protection from catastrophic fire, and other specific management measures that may improve habitat quality.

Improvement projects that may adversely impact special status species within the project area include the *Scenic Vista Management Plan* which could include mechanical thinning and trimming of vegetation to restore views, the *East Yosemite Valley Utilities Improvement Plan*, the *Ahwahnee Hotel Improve Porte Cochere Walkways and Fence project*, and the *Ahwahnee Dormitory Foundation Rehabilitation project*, which may result in short-term disturbance associated with construction. These projects would result in negligible, short-term adverse impacts on special status wildlife. Overall, the cumulative actions in combination with the No Action Alternative could result in local, short-term to long-term, negligible adverse impacts and local, long-term, moderate beneficial impacts on special status species.

## Environmental Consequences of Alternatives 1, 2, and 3

### Analysis

Short-term adverse impacts on wildlife habitat and populations resulting from construction activity would include increased noise, increased human presence, heavy equipment use, and increased vehicle traffic. In addition to ongoing impacts resulting from normal hotel operations and visitor use, the impacts of construction activity would be expected to be minor.

Impacts on bat species, particularly from actions that would involve physical alterations to structures, would be minimized or avoided with the implementation of mitigation measures described in the wildlife section of Appendix E. These measures would include preconstruction surveys and limits on construction activities during critical breeding and nesting times. To avoid adverse impacts on maternal or hibernating bat colonies, construction would occur between the end of August and the end of October. If work must occur outside this time frame, the hotel, cottages, and dormitory would be checked for bat occupancy just prior to construction and the park wildlife biologist would be consulted.

In addition, the vicinity of The Ahwahnee includes foraging habitat for the special status bird and bat species. The impact of project implementation on these species would be from disturbance associated with increased human presence, construction equipment use, and increased vehicle traffic. Construction may occur over several seasons as actions under this plan would be conducted through phased implementation as funding becomes available. Tree removal resulting from improvements to the fire department access road to the cottages would occur outside of the nesting season (after August and before April) in order to avoid impacts on special status bird species.

In addition, implementation of standard wildlife mitigation measures in Appendix E, including presence/absence surveys before and during the breeding season, limiting construction activities to before dusk and after dawn, and standard construction mitigation measures to protect habitat, potential impacts on these species would be minimized or avoided.

**Conclusion:** The project would occur in suitable habitat for special status bird and bat species. The implementation of mitigation measures in Appendix E with a focus upon avoidance, limiting tree removal, limiting construction activities to outside of breeding seasons, limiting construction activities to daytime hours, conducting detailed surveys immediately before construction, and limiting areas of disturbance, would minimize impacts on these species. Therefore, Alternatives 1, 2, and 3 may affect, but are not likely to adversely affect special status species.

### **Cumulative Impacts**

The list of past projects, current approved actions, or reasonably foreseeable actions that may have a cumulative impact on the project area would be the same as provided under the No Action Alternative. In conjunction with these, Alternatives 1, 2, or 3 may affect, but are not likely to adversely affect special status species.

## **Air Quality**

### **Affected Environment**

Yosemite National Park is classified as a mandatory Class I area under the 1970 Clean Air Act, as amended (42 USC 7401 et seq.). This air quality classification was enacted to protect national parks and wilderness areas from air quality degradation. Class I designation gives federal land managers the responsibility for protecting air quality related values in Class I areas from the adverse effects of new or modified sources of emissions. Vegetation, visibility, water quality, wildlife, historic and prehistoric structures and objects, cultural landscapes, and most other elements of a park environment are sensitive to air pollution and are considered by the National Park Service to be air quality-related values.

The 1970 Clean Air Act also requires the EPA to establish National Ambient Air Quality Standards and periodically reassess whether these standards are adequate to protect public health and the national welfare, including those resources and values associated with national parks and wilderness areas. The EPA has set national standards for six pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter larger than 2.5 and smaller than 10 microns in diameter (PM-2.5 and PM-10). Under the 1988 California Clean Air Act, the California Air Resources Board (CARB) applied additional standards for air pollution control beyond those established by national standards. In general, the California ambient standards are more stringent, particularly for ozone and PM-10, than federal standards.

The state of California is divided into air basins that are routinely monitored using both federal and state air quality standards. The Ahwahnee Hotel is located in Mariposa County, near the southern end of the Mountain Counties Air Basin. Currently, all of Mariposa County is a *nonattainment* area for the national and state 8-hour ozone standards and is in attainment or *unclassified* (meaning there are insufficient data to make determination) for other federal and state criteria pollutants (EPA 2010; CARB 2010). Activities that affect air quality in Mariposa County are regulated by the Mariposa County Air Pollution Control District, which is responsible for developing a state implementation plan for federal and state nonattainment pollutants.

Current county regulations for maximum discharges of fossil fuel steam generator facilities (new or expanded) are: 200 lbs/hour of sulfur dioxide (SO<sub>2</sub>), 140 lbs/hour of nitrogen dioxide (NO<sub>2</sub>), and 10 lbs/hour of combustion contaminants (i.e., particulate matter).

Air pollutants can affect both human health and ecosystem health, but human exposure is most aggressively protected by federal and state law. From a human health perspective, air quality throughout Yosemite is generally good, with the exception of: 1) spatially localized nighttime smoke accumulation due to prescribed fires, wildland fires, and camp fires; and 2) regionally high ozone in the front-country during hot stagnant summer days when upslope winds bring ozone precursors (i.e., nitrogen oxides [NO<sub>x</sub>] and volatile organic compounds [VOCs]) into the park from urban sources west of the park. Asthmatics, people with cardiovascular problems, the elderly, children, and actively exercising individuals are the most vulnerable to these pollutants.

Less is known about ecological impacts of air pollutants in Yosemite, but damage to Jeffrey pine (*Pinus jeffreyi*), generally at elevations below 6,000 to 7,000 feet on the western slopes of the park, has been well documented for several decades.

## Environmental Consequences – Methodology

A qualitative analysis of air quality was used to describe air emission impacts associated with demolition and removal activities. Pollutants resulting from the implementation of an alternative can impact air quality; however, air quality is a regional issue that is influenced by factors outside the immediate project area. This project is not expected to increase the number of non-construction vehicles in the project area. Therefore, non-construction vehicular emissions are not addressed in this analysis.

**Context:** For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park, and in particular Yosemite Valley. Regional impacts would be those related to the Mountain Counties Air Basin.

**Duration:** A short-term impact would be temporary in duration and would be associated with construction activity. A long-term impact would have an impact that would be detected after project implementation, such as changes in overall emissions from the project area.

**Intensity:** A negligible impact would have no measurable effect, a minor impact would have a slightly measurable effect, moderate impacts would be clearly detectable and appreciable effects, and major impacts would have highly measurable and substantial effects on existing air quality conditions. Both moderate and major impacts would be particularly measurable and noticeable to sensitive receptors.

**Type:** Beneficial air quality impacts would reduce emissions or lower air pollutant concentrations, while adverse impacts would increase emissions or raise pollutant concentrations.

## Environmental Consequences of the No Action Alternative

### Analysis

#### *Short-term impacts*

There would be no construction-related impacts on air quality under this alternative.

#### *Long-term impacts*

The heating system at the hotel was upgraded in 1990, but has since exceeded its design life and is deteriorating. Estimates based upon the age of the heating system predict that the unit continues to meet current county emissions codes, although precise measurements would be required to confirm this.

A chilled water system air conditioning unit was added to the hotel in 1990 to provide cooling to guestrooms, the Dining Room, the Sweet Shop, and the Gift Shop. The cooling system uses a HCFC (hydrochlorofluorocarbon) refrigerant that is scheduled to be phased out by 2020.

**Conclusion:** Under the No Action Alternative, there would be no new short-term or long-term impacts on air quality. Existing equipment would remain in place and regular maintenance activities would continue.

### Cumulative Impacts

Short-term adverse impacts on air quality could result from construction activities associated with some of the current and reasonably foreseeable actions planned or approved within the park. Particulate matter conditions in Yosemite Valley would be determined by both regional sources and local sources and could be beneficial or adverse.

Past actions in the project vicinity that may have impacted air quality include the *Yosemite Valley Shuttle Stop Improvements*, which may have included short-term, adverse impacts from construction activities and asphalt paving.

Current or reasonably foreseeable actions that may impact air quality in the project area include: the planned *Parkwide Rehabilitation of Concessioner Operated Fireplaces*, the *Merced Wild and Scenic River Comprehensive Management Plan*, the *East Yosemite Valley Utilities Improvement Plan*, the *2009 Fire Management Plan*, and the *Ahwahnee Dormitory Foundation Rehabilitation Project*. Adverse impacts of construction activities associated with the seismic upgrades at the dormitory and utility upgrades would be localized and short-term in nature. Wildland and prescribed fires in the park, managed in accordance with the *2009 Fire Management Plan*, could adversely impact local and regional air quality in the short-term.

Long-term beneficial impacts on air quality would result from the rehabilitation of concessioner-operated fireplaces (from a reduction in particulate emissions) and the implementation of the

*Merced Wild and Scenic River Comprehensive Management Plan*, which would include measures to guide the future protection and restoration of natural resources in the Valley.

In conjunction with adverse impacts associated with regional air quality influences, the No Action Alternative, in combination with cumulative projects would result in long-term, minor, beneficial impacts on local and regional air quality. The local, short-term, adverse effects associated with construction activities would not offset the long-term beneficial impacts of cumulative projects.

## Environmental Consequences of Alternatives 1, 2, and 3

Proposed actions that may impact air quality are generally the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

**Short-term impacts.** Air quality effects associated with construction activities would include temporary engine and dust emissions from a variety of sources. These activities could generate substantial amounts of dust, including PM-10. Dust emissions would vary from day to day, depending on the level and type of activity and weather conditions. Emissions generated from construction activities would also include tailpipe emissions from heavy-duty equipment, worker commute trips, and truck trips to haul construction equipment and materials to and from the site. Both mobile and stationary equipment would generate emissions of ozone precursors, carbon monoxide, PM-2.5 (all criteria air pollutants) and toxic air contaminants from use of diesel-powered equipment. Toxic air contaminants are less pervasive in the atmosphere than criteria air pollutants, but they are linked to short-term (acute) and long-term (chronic or carcinogenic) adverse human health effects. Toxic air contaminants do not have corresponding ambient air quality standards.

Construction activities would occur at times when recreational users would be present in the area. Depending on the availability of funding, implementation of any of the action alternatives would be expected to require several seasons of construction. The construction period could extend year-round; however, limiting the construction activities to periods of lower use (winter and early spring) would limit the exposure of sensitive receptors, such as children and the elderly, to tailpipe emissions and diesel particulates.

**Long-term impacts.** Under all action alternatives, the replacement of heating and cooling equipment with high-efficiency equipment that uses a non-HCFC refrigerant would be a beneficial impact on air quality. Improvements would be made to the ventilation systems throughout the hotel and cottages. New boilers would require county permits, and would not exceed the current regulations for emissions. Where feasible, new finish materials would include low VOC-content materials, which would improve the indoor air quality of the facility.

Overall emissions from hotel operations equipment are expected to be lower than existing conditions. If the diesel-fired boilers were replaced with propane-fired boilers, as proposed under Alternative 2, expected emissions may be lowered further. However, the lower BTU value of propane may require additional fuel and more frequent trips by tanker trucks to fill onsite tanks.

**Conclusion:** Implementation of Alternatives 1, 2, or 3 would result in short-term, minor, adverse impacts on local air quality due to construction-related dust, equipment and vehicle emissions. Efficiency upgrades throughout the hotel and cottages for equipment and materials would result in a long-term, minor, beneficial impact on indoor, local, and regional air quality.

## Cumulative Impacts

Short-term adverse impacts on air quality could result from construction activities associated with some of the current and reasonably foreseeable actions planned or approved within the park. With respect to particulate matter, conditions in Yosemite Valley would be determined by both regional sources and local sources and could be beneficial or adverse.

Past actions in the project vicinity that may have impacted air quality include the *Yosemite Valley Shuttle Stop Improvements*, which may have included short-term adverse impacts from construction activities and asphalt paving.

Current or reasonably foreseeable actions that may impact air quality in the project area include: population growth, the planned *Parkwide Rehabilitation of Concessioner Operated Fireplaces*, the *Merced Wild and Scenic River Comprehensive Management Plan*, the *East Yosemite Valley Utilities Improvement Plan*, the *2009 Fire Management Plan*, and the *Ahwahnee Dormitory Foundation Rehabilitation Project*. Adverse effects of construction activities associated with the seismic upgrades at the dormitory and utility upgrades would be localized and short-term in nature. Wildland and prescribed fires in the park, managed in accordance with the *2009 Fire Management Plan*, could adversely impact local and regional air quality in the short-term.

Long-term beneficial impacts on air quality would result from the rehabilitation of concessioner-operated fireplaces (from a reduction in particulate emissions) and the implementation of the *Merced Wild and Scenic River Comprehensive Management Plan*, which would include measures to guide the future protection and restoration of natural resources in the Valley.

Although cumulative growth in the region would tend to adversely affect air quality, implementation of ongoing state and federal mobile-source control programs would ameliorate this effect to a degree. In conjunction with adverse impacts associated with regional air quality influences, Alternatives 1, 2, and 3, in combination with cumulative projects would result in long-term, minor, beneficial impacts on local and regional air quality. The local, short-term, adverse effects associated with construction activities would not offset the long-term beneficial impacts of cumulative projects.

## Soundscapes

### Affected Environment

A soundscape refers to the total acoustic environment of an area. Both ambient and human generated sounds may be desirable and appropriate in a soundscape. By definition, “noise” is human-caused sound that is considered unpleasant and unwanted. Whether a sound is considered unpleasant depends on the individual listening to the sound and what the individual is doing when the sound is heard (e.g., working, playing, resting, or sleeping).

Protecting natural sounds is important both to the visitor experience and the ecological integrity of natural resources in Yosemite National Park. National parks provide visitors refuge from noise, where they can instead become attuned to the historic and natural character of the area. Natural soundscapes are also important to wildlife: birds use sound to define territories, attract mates, and even navigate dense forest canopies, while other animal species use sound to keep track of offspring, predators, and prey.

## National Park Service Standards and Regulations

NPS *Management Policies 2006* directs parks to “preserve, to the greatest extent possible, the natural soundscapes of parks.” This includes restoring soundscapes to natural conditions if they have become degraded by unnatural sound (noise) and protecting natural soundscapes from unacceptable impacts. It is up to park managers to decide what constitutes acceptable impacts on natural soundscapes, recognizing that “frequencies, magnitudes, and durations of acceptable levels of unnatural sound will vary throughout a park, being generally greater in developed areas” (NPS 2006a).

The current interpretation of these soundscape policies is that the National Park Service must protect natural sound environments, but also address what might be appropriate levels of human-generated sound in light of why a park was established. For instance, some human sounds may be entirely appropriate for the purposes of interpretation and increased understanding of park resources. Examples include interpretive talks or American Indian traditional cultural use (NPS 2010e).

## Existing Sources of Sound

Natural sounds at The Ahwahnee result from sources such as birds, animals, the rush of water in creeks, the Merced River, waterfalls (particularly in spring and early summer), and wind in the trees. The frequency and intensity of human-caused sound in the project area varies with the season, and generally includes human voices, such as talking and yelling. Background noises include mechanical sources such as motor vehicles, transit buses, maintenance equipment, mechanical devices associated with building operations and grounds maintenance, and aircraft flying overhead. Motor vehicle and aircraft noise are present year-round.

## Environmental Consequences – Methodology

The soundscapes impact assessment involves the identification and qualitative description of the types, characteristics, and sources of actions proposed under each alternative that could affect the ambient acoustic environment. For most sound sources, such characteristics would include the location and movement of the source, its operational features that produce sound, and how the sound would be distributed over time. The analysis of impacts on soundscapes is qualitative, with professional judgment applied to reach reasonable conclusions as to the context, duration, type, and intensity of impact, as discussed below.

Sound and noise levels are measured in units known as decibels (dB). For the purpose of this analysis, sound and noise levels are expressed in decibels on the “A” weighted scale (dBA). This scale most closely approximates the response characteristics of the human ear to low-level sound. Human hearing ranges from the threshold of hearing (0 dBA) to the threshold of pain (140 dBA). As a point of reference, a conversation between two people would typically measure about 60 dBA. A noise level above 80 dBA can cause hearing loss if prolonged.

**Context:** The impact would be detectable only within the vicinity of the proposed action. Thus, the setting or area within which impacts are analyzed would be local.

**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 or transitory in effect, such as construction noise or noise from passing vehicles. A long-term impact would have a permanent impact on the ambient environment.



**Intensity:** A negligible impact indicates the change in sound levels would not be perceptible. A minor impact indicates the change in sound levels would be perceptible, but not likely to have a substantial annoyance effect on visitors or residents in the area. A moderate impact indicates the change in sound levels would be easily perceptible and likely to result in annoyance to some park visitors and residents. A major impact indicates the change in sound levels would be very perceptible and likely to annoy most park visitors and residents who experience it.

**Type:** Adverse impacts are those impacts that result in more noise and beneficial impacts are those impacts that result in less noise.

## Environmental Consequences of the No Action Alternative

### Analysis

Noise generated by activities associated with regular operations at The Ahwahnee would continue to affect ambient sound in the vicinity of the project area. These noises include human voices primarily associated with overnight guests and visitors at The Ahwahnee hotel and grounds, as well as vehicle noise and noise from building operations and grounds maintenance. There would be greater amounts of noise affecting the project area in summer, when visitation to Yosemite Valley is at its highest, guest accommodations at The Ahwahnee are typically full, and the hotel is fully staffed.

**Conclusion:** Under the No Action Alternative, the project area would continue to be impacted by noise generated by regular operations and visitor use at The Ahwahnee. The No Action Alternative would result in no new impacts on soundscapes.

### Cumulative Impacts

Short-term, adverse impacts on soundscapes could result from construction activities associated with some of the current and reasonably foreseeable actions planned or approved within the park. Nearby work that could contribute to noise includes work associated with the *East Yosemite Valley Utilities Improvement Plan*, the *Ahwahnee Dormitory Foundation Rehabilitation Project*, and potential future actions associated with the *Merced Wild and Scenic River Comprehensive Management Plan*. Vegetation management in accordance with the *Invasive Plant Management Plan*, the *Scenic Vista Management Plan*, and the *2009 Fire Management Plan* could adversely impact the ambient noise environment. The adverse impacts of these activities would be localized and short-term in nature. In conjunction with the No Action Alternative, these projects would have a local, short-term, minor, adverse impact on soundscapes.

Past projects at and in the vicinity of The Ahwahnee would not have a cumulative impact project alternatives, because their impacts on soundscapes were temporary in nature and have ended.

## Environmental Consequences of Alternatives 1, 2, and 3

Proposed actions that may impact soundscapes are generally the same for all action alternatives, with only minor exceptions. Therefore, the action alternatives are analyzed together.

### Analysis

Impacts on soundscapes under all action alternatives would be limited to short-term impacts from construction activities. Because the proposed actions would not result in changes to levels of visitation at the park, a substantial change in the number of accommodations, employee staffing,

or changes to the basic operations of the hotel, there would be no long-term impact on soundscapes resulting from implementation of any of the action alternatives.

Depending on funding availability, construction periods could last for several seasons. The type of noise generated during each construction period would include the operation of heavy equipment, voices of workers, handheld manual and power tools (e.g., hammers, drills, and saws), noise associated with material haul vehicles, and noise associated with equipment used for excavation. Typical noise levels for equipment likely to be used during construction activities would range from 74 to 89 dBA at a distance of 50 feet. These noise levels are expected to be substantially higher than the existing ambient noise at The Ahwahnee, with some equipment potentially doubling the noise levels.

Heavy equipment use during excavation activities could generate substantial amounts of noise that would affect wildlife, onsite staff, guests, and nearby recreational users, particularly if construction takes place while The Ahwahnee is occupied and open for day use. Noise impacts outside of the hotel would vary depending upon a number of factors including the number and types of equipment in operation on a given day, usage rates, the level of background noise in the area, and the distance between receptors and construction activities. Disturbance of visitors and employees could be mitigated to some degree by scheduling high activity during periods of low use (e.g., late fall or late winter) and restricting construction hours to daytime periods when guests are least likely to be sleeping. In addition, scheduling construction activities outside of breeding seasons would reduce potential impacts on wildlife species (see Appendix E: Mitigation Measures).

**Conclusion:** Alternatives 1, 2, and 3 would result in short-term elevated levels of noise in the project area due to construction activities. This would potentially affect guests, onsite staff, and nearby recreational users; however, the number of people impacted would be lower if construction was scheduled during periods of low occupancy, low visitation, or during a hotel closure. In addition, wildlife may be impacted by noise generated during construction. Impacts on wildlife would be mitigated by scheduling construction activities outside of breeding seasons. Overall, Alternatives 1, 2, and 3 would result in a local, short-term, moderate, adverse impact on soundscapes.

### Cumulative Impacts

Short-term, adverse impacts on soundscapes could result from construction activities associated with some of the current and reasonably foreseeable actions planned or approved within the park. Nearby work that could contribute to noise includes work associated with the *East Yosemite Valley Utilities Improvement Plan*, the *Ahwahnee Dormitory Foundation Rehabilitation Project*, and potential future actions associated with the *Merced Wild and Scenic River Comprehensive Management Plan*. Vegetation management in accordance with the *Invasive Plant Management Plan*, the *Scenic Vista Management Plan*, and the *2009 Fire Management Plan* could adversely impact the ambient noise environment. The adverse impacts of these activities would be localized and short-term in nature. In conjunction with Alternatives 1, 2, or 3, these projects would have a local, short-term, moderate, adverse impact on soundscapes.

Past projects at and in the vicinity of The Ahwahnee would not have a cumulative impact project alternatives, because their impacts on soundscapes were temporary in nature and have ended.

# Sociocultural Resources

## Visitor Experience and Services

### Affected Environment

National Park Service stewardship of a National Historic Landmark requires the consideration of two integrated purposes: (1) preserving a unique cultural resource and (2) continuing to make this resource available to visitors for the benefit and enjoyment of present and future generations.

#### Overnight Accommodations at The Ahwahnee Hotel

The Ahwahnee hotel includes 99 guestrooms at varying levels of amenities. Each guestroom is accented with original designs; guests are assigned traditional keys for room access. Throughout the upper floors of the hotel there are 12 “featured” suites, most with private balconies; these rooms include the Presidential Suite, the Third Floor Suite, the El Dorado Diggins Suite, the Mary Curry Tresidder Suite, the Underwood/Tressider Suite, and a Sunroom Suite. There are also 12 “classic” rooms located throughout the hotel. These rooms include slightly fewer amenities than the suites, but are still finely furnished and decorated and include sweeping views of the hotel grounds and spectacular scenery. There are 75 “standard” rooms with views of Half Dome, Yosemite Falls, or Glacier Point. Four rooms include a sitting room (parlor) that adjoins the hotel room. Each of these Ahwahnee parlors has its own unique décor.

The Ahwahnee cottages offer 24 rooms available to overnight guests. The buildings are single-story, wood-framed structures located on the southeastern edge of the hotel grounds. The cottages are accessible by pathways providing a connection to the hotel. Pedestrian paths include both asphalt paths and unpaved paths. The main asphalt path provides access to the cottages; there are two “spine” paths that link to individual cottages; and smaller asphalt paths connect to the cottage terraces.

#### Day Use Opportunities at The Ahwahnee Hotel

The Ahwahnee hotel was originally designed to attract overnight guests. However, today many visitors to Yosemite National Park make The Ahwahnee hotel a day use destination. Much of the hotel is open to the public, including the main floor lounges and Solarium. The expansive public rooms have outstanding displays of artwork, stencils, murals, tapestries and rugs, furniture, and fixtures for visitors to enjoy.

Upon arriving at the hotel, visitors and guests pass through the protected Porte Cochere and along an open, timber-framed entry gallery to the Registration Lobby. Guests arriving by bus are dropped off outside the Porte Cochere because modern buses are too tall to fit under the structure. Passenger luggage is unloaded and buses back out of the dropoff area and continue elsewhere to find parking. There are six accessible parking spaces set aside for guests visiting the hotel. The ADA-ABA spaces are located near the Porte Cochere, east of the reflecting pond (Figure 2-1).

Entering the building, the Registration Lobby provides comfortable seating areas. The Registration Lobby is typically very busy, with a steady stream of guests and visitors flowing through the area or registering for rooms. The Ahwahnee Bar is located off of the Registration

Lobby to the east, and provides a relaxed setting for drinks or a light meal. There are two retail stores located off the lobby, the Sweet Shop and the Gift Shop.

The Elevator Lobby is at the center of the first floor and is therefore the primary circulation space. The main area is rectangular with two hallways extending to the Great Lounge and a hallway connecting to the Dining Room. A large fireplace is centered on the south wall; a seating area is located in the center of the lobby. Stencils, textiles, and artwork add composure to the ambiance of this busy area.

Off of the Elevator Lobby, the Great Lounge is the largest space in the South Wing. This room is vast, with proportions of 80 feet long by 50 feet wide and 30 feet tall. Everything in the room is oversized; huge iron chandeliers hang from the ceilings, and several enormous tables and large pieces of furniture anchor the space. The floor is wood and partially covered by rugs. A large stone fireplace is centered on the north side of the room. Comfortable, well-lit seating areas are located throughout the room for visitors and guests to relax and enjoy views out the near full height windows. The windows are topped with original, hand-stained glass panels. The ceiling beams are covered with decorative stenciling, which add to the warmth and comfortable ambiance of the room. Multiple sets of large, multipane double doors swinging to outside patios are on either side of the Great Lounge.

The Under Lounge (or South Lounge) is the single-story area at the south end of the Great Lounge that is dominated by a large stone fireplace on its south wall. The Winter Club Room, Mural Room, and Solarium are located off of this area on the ground floor. The Winter Club Room is a comfortable sitting room with floor to ceiling display cases, a winter sports theme, vintage photographs, and large windows. The Mural Room has a spectacular mural of Yosemite's flora and fauna on the north wall. A copper-hooded fireplace and French doors looking out on the landscaped grounds make it a quiet place to read, write, or entertain a small group. The Solarium offers natural light from windows on three sides and a view of Glacier Point. Access to the wedding lawn from this area is by an uneven flagstone and unpaved path.

The Dining Room is off of the Elevator Lobby on the ground floor. This cavernous room is two stories high with open-sloped ceilings exposing the log wood truss structure. Each end of the room is supported by four large granite-faced columns. Another pair of columns supports the roof of the alcove off the west end of the Dining Room. The south wall is filled with large picture windows with doors on either side of each window. Walls and ceiling have decorative stencils. The concrete floor is stained in an elaborate pattern with red, green, tan, and brown stains. The Dining Room offers service for breakfast, lunch, Sunday brunch, and dinner.

There are three public restrooms available to visitors at The Ahwahnee hotel. The men's room is on the ground floor, the women's room is on the first floor, and a unisex family room is located on the first floor. Fixture counts in the women's restroom include four toilets and four sinks. The men's room has four toilets, three urinals, and three sinks. An accessible toilet compartment is provided in each of the women's and the men's restrooms. A unisex restroom is provided adjacent to the women's restroom.

### **Fire and Life-Safety**

Fire suppression sprinklers, detectors, alarms, smoke curtains, new fire department connections, and secondary egress from the fifth and sixth floors of the hotel were installed in 2010-2011. Even with these upgrades to the sprinkler, detection, and alarm systems, The Ahwahnee hotel and associated buildings are not fully compliant with current fire and life-safety systems codes. In particular, emergency egress from floors above ground level, interior emergency signage, fire wall

separations, open shafts and laundry chutes between floors, expedient firefighter and emergency access to rooms, detectors and alarms at the cottages and dormitory, and fire engine access around the exterior of the building and to the cottages are insufficient.

At the second floor of the East Wing, the noncompliant egress stair to the first floor is narrow, steep, and unenclosed, and the exterior stair to ground level has open risers. The third and fourth floors also use this route for egress. This path of egress is not well marked, potentially causing confusion for those exiting the building.

Due to inadequate means of egress, public use of the South Mezzanine meeting rooms was recently revoked in accordance with the recommendation of the Yosemite National Park Fire Marshal. Nonpublic, business-only occupancy of two of the South Mezzanine meeting rooms (Tudor Lounge and Colonial Room) is now limited to 30. All use of the Tresidder Room has been suspended.

There currently are no code-required interior fire separations in the hotel between the Dining Room and Kitchen; between the Dining Room and North Mezzanine and Elevator Lobby; or in the elevator, laundry, and mechanical shafts. Without these separations, smoke and flames could spread between floors and throughout the hotel in the event of a fire.

The current door lock system for guest and supply rooms in the hotel was recently upgraded, but is still not a uniform, integrated system. Supply closets and mechanical rooms are separately keyed. In an emergency, firefighters would have difficulty accessing all rooms in a timely manner to ensure evacuated rooms and access spaces.

### **Seismic and Structural Stability**

Based on a seismic evaluation of The Ahwahnee (Degenkolb Engineers 2010), there are some inherent qualities of the hotel and cottages that might present safety hazards to visitors and employees in the event of a BSE-1 (500-year) or BSE-2 (2,500-year) earthquake (see the ‘Geohazards’ analysis, above). Potential safety hazards would include falling stones from the granite veneer above the entrance to the Dining Room and from stone columns at the west end of the Dining Room, and shattering of the large bay windows in the Dining Room and Solarium. Other hazards to visitor and employee safety in a 500-year event would include chimneys toppling from the main hotel or the cottages, stones detaching from the exterior granite veneer and potentially falling onto egress paths, and failure of the two-story gypsum block walls in the Great Lounge.

### **Accessibility**

As noted above under ‘Fire and Life-Safety,’ the South Mezzanine meeting rooms can only be accessed by a single stairway. Use of the three meeting rooms at the South Mezzanine is limited to nonpublic, business-only occupancy of up to 30 employees in the Tudor Lounge and Colonial Room. Employee access to these meeting rooms does not comply with ADA-ABA requirements.

There are currently three accessible guestrooms in the hotel and two accessible guestrooms at the cottages. These rooms do not have the clearances available in a modern facility; however, they meet the spirit and intent of the law and have been approved by the authorities having jurisdiction. The accessible guestroom count is two fewer than required under ADA-ABA guidelines. In addition, the hotel does not currently have an accessible suite or room with a balcony available.

The main front door to the hotel is heavy and does not have an automatic door opener. Exit doors from the Great Lounge have tall jambs, and the concrete paths leading from the doors are cracked, impeding their use by the mobility-impaired.

The public restrooms available at The Ahwahnee hotel were originally designed to support guests staying at the hotel. Over the years, day use of the facility has become very popular, and fixture counts are low by today's standards. Accessible facilities are available, although not at the number that would be available in a modern facility. An accessible toilet compartment is provided in the men's room on the ground floor and in the women's room on the North Mezzanine. A unisex restroom with accessible fixtures is provided adjacent to the women's restroom, although clearances do not fully meet ADA-ABA standards for wheelchairs.

The existing Registration Lobby area is not set up to provide ADA-ABA-compliant low areas for registration transactions. Concierge and registration personnel meet guests with disabilities in the main area. Wheelchair access through the ground floor thresholds is difficult.

Parking lot configuration, number and size of parking spaces, and path of travel to the hotel from the parking area are not currently sufficient to meet ADA-ABA requirements. A 2009 rockfall resulted in the removal of 41 parking spaces from service due to safety concerns; several of these spaces were ADA-ABA accessible. Their removal has resulted in an overall shortfall in ADA-ABA-accessible parking for The Ahwahnee hotel.

The main path of travel to the cottages is paved and accessible; other paths in the cottage area are uneven. The path of travel to the wedding lawn from the hotel is an uneven flagstone surface that is not accessible.

### **Heating/Cooling**

Guestrooms in the hotel are heated and cooled with a four-pipe system carrying hot and/or cold water. Guestroom ventilation in its current configuration does not function in the manner it was designed to perform. Originally, the hotel guestrooms had operable transom windows above the interior guest doors and operable outside windows. Fans exhausted the guestroom corridors and helped draw air through the rooms, thus providing natural ventilation. The original interior transom windows have been permanently closed for fire safety precautions, leaving guestrooms with only outside windows and no cross ventilation to assist in summer cooling.

The cottages have temporary air conditioning units installed and are minimally heated with small electric resistance heaters.

## **Environmental Consequences – Methodology**

This analysis evaluates the quality of visitor experiences in terms of how they might be altered as a result of the action alternatives. Professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts.

The analysis of the type of impact was based on whether there would be a complete loss or change in access to or availability of a recreation opportunity, a change in the type or amount of visitor services available, a change in code compliance that would affect visitor experience, a change in the quality of visitor experience or recreational opportunities, or a change in safety.

**Context:** For the purposes of this analysis, only local impacts are considered. This includes impacts specific to visitor experience in The Ahwahnee hotel area.

**Duration:** In terms of duration, short-term impacts on the visitor experience would be those impacts that occur during implementation (i.e., construction). Long-term impacts would have a permanent effect on the visitor experience.

**Intensity:** In terms of intensity, impacts are defined as negligible, minor, moderate, and major. Negligible impacts are effects considered not detectable and would result in little noticeable change in visitor experience. Minor impacts would result in changes in desired experiences, but without appreciably limiting or enhancing the overall effect. Moderate impacts would be clearly detectable and could change the desired experience appreciably. Major impacts would eliminate or greatly enhance characteristics, thereby creating a substantial, highly noticeable influence.

**Type:** In terms of type, impacts were evaluated in terms of whether they would be beneficial or adverse on visitor participation, quality of visitor experience, or service level.

## Environmental Consequences of the No Action Alternative

### Analysis

The Ahwahnee hotel and associated structures would remain in their existing conditions with no comprehensive plan for future facility rehabilitation. Periodic maintenance of the public areas and guestrooms would continue, finishes in public areas would continue to deteriorate over time, and nonhistoric additions and windows would remain.

In the event of an emergency evacuation, egress routes would remain inadequate and access to all hotel spaces by emergency personnel during an evacuation would remain difficult due to varied key systems. Unsealed ventilation and mechanical shafts and laundry chutes would contribute to the potential spread of smoke and fire throughout the building in the event of fire. Threats to visitor safety in a seismic event from building elements such as stone veneers, unbraced walls, chimneys, and large bay windows on the ground floor would remain. Ventilation at hotel guestrooms would remain inadequate during the summer, and temporary air conditioning would remain at the cottages.

Accessibility would remain difficult in some areas of the hotel, and some public areas would remain inaccessible. The single means of egress from the South Mezzanine meeting rooms would remain noncompliant with ADA-ABA requirements. The ground floor exterior door thresholds would remain difficult to negotiate. The concierge and registration desks would remain in an inaccessible configuration. The number of accessible rooms and room types would remain noncompliant with ADA-ABA requirements. Accessible parking would remain inadequate, and the path to the wedding lawn from the hotel would remain noncompliant with ADA-ABA requirements.

Public restroom fixture counts would remain inadequate, particularly for women, and hotel visitation would continue to result in restroom queues at the dining hours. The distance to public restrooms from the main hotel entrance would continue to pose challenges for some visitors.

**Conclusion:** Visitor experience, services, and safety would generally remain in their current condition. Emergency egress at the hotel would remain noncompliant with fire/life-safety codes and standards. The meeting rooms at the South Mezzanine would remain closed to public use. The potential for injury to building occupants during a seismic event from falling hazards would remain. Accessibility would remain difficult in some areas of the hotel, and some public areas of the hotel would remain inaccessible. The number of ADA-ABA-compliant guestrooms and parking spaces would remain inadequate. Bathroom fixture counts would remain insufficient for

the facility. Guestroom air conditioning and ventilation would remain ineffective and uncomfortable during the summer. Historically incompatible aluminum windows would remain in guestrooms. Historic finishes and fabric would continue to deteriorate with no comprehensive plan for their rehabilitation.

Overall, the No Action Alternative would result in a local, long-term, moderate, adverse effect on visitor experience resulting from safety hazards, limited accessibility, insufficient ventilation, and deterioration of historic finishes.

### **Cumulative Impacts**

Recently completed projects improved visitor experience and services through repairs and rehabilitation to existing facilities. Projects evaluated in conjunction with the No Action Alternative include the following: *The Ahwahnee Fire and Life Safety Improvements Project*, *Provide Secondary Egress from 5th and 6th Floors Project*, *The Ahwahnee Hotel Kitchen FRP Board Installation Project*, *The Ahwahnee Rehabilitate Historic Light Fixtures Project*, *The Ahwahnee Hotel Interior Decoration Projects*, *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project*, and *Recondition Pool Project*.

Current and/or reasonably foreseeable future actions, projects, and plans that would have a cumulative impact on visitor experience at The Ahwahnee hotel include the *East Yosemite Valley Utilities Improvement Plan*, which provides for utility needs of the aging, inadequate, and inaccessible utility infrastructure within the park, and the *Merced Wild and Scenic River Comprehensive Management Plan*, which addresses development (and/or removal) of facilities, user capacities, and specific management measures to protect and enhance the river's outstandingly remarkable values.

Cumulatively these actions, projects, and plans, when combined with the No Action Alternative, would result in a local, long-term, minor, adverse impact on visitor experience, services, and safety at The Ahwahnee.

## **Environmental Consequences of Alternative 1**

### **Analysis**

Proposed egress improvements at the East Wing would increase the likelihood that building occupants would be able to safely evacuate in the event of an emergency. Four standard guestrooms would be lost on the mezzanine level due to emergency egress improvements at the East Wing. Two guestrooms would be permanently lost; the remaining space would be redefined as two accessible suites, thus reducing the total room count to 121. The South Mezzanine would remain closed to all public use; visitors would not be able to explore the area and view the Solarium and Great Lounge from above or use the space for private meetings and events.

Fire/ life-safety improvements to the ventilation systems, linen chutes, and exhaust shafts would slow the spread of smoke and fire in an emergency. Automatic sprinkler protection, a fire alarm system, and carbon monoxide detection system in the cottages would provide a reliable means of notifying guests during a smoke or carbon monoxide condition. Improvements to the master key system would facilitate evacuation in an emergency. The proposed seismic improvements would decrease the potential for injury to occupants from falling hazards.

In addition to seismic improvements proposed in all action alternatives, implementation of Alternative 1 would include bracing the Dining Room in the north-south direction, reinforcing



stone chimneys at the hotel, and pinning the exterior granite veneer above egress points. The proposed seismic improvements would decrease the potential for injury to occupants from falling hazards.

Proposed accessibility improvements at ground floor entrances/exits, the service elevator, the Registration Lobby, the event and facility manager offices, and along exterior pathways to the wedding lawn and cottages would bring the hotel further into compliance with ADA-ABA requirements. Two new accessible guestroom suites, one with an accessible balcony, would be added at the mezzanine level in the East Wing, increasing the total number of accessible rooms to seven. Increasing the total number of accessible parking spaces to seven and providing accessible paths of travel from the parking lot to the hotel would also be compliant with ADA-ABA requirements.

New bathroom facilities on the ground floor would include a unisex restroom, and on the mezzanine the women's restroom would be expanded to increase the fixture count. The Ahwahnee Bar would be reconfigured. The Ahwahnee Bar back bar and food preparation area would be moved to the north end of the space, and glazing would be added to the east wall, replacing incompatible, nonhistoric additions. These actions would enhance the visitor's sense of arrival at the main entrance to the hotel. Operational improvements at the Ahwahnee Bar would improve visitor service.

Throughout the building, historic features with 'poor' condition ratings (see Appendix C) would be rehabilitated or stabilized; historic features of Very Significant and Significant spaces in 'fair' condition would be rehabilitated or preserved. The proposed work would help preserve the National Historic Landmark for present visitors and future generations.

The heating system and cooling systems at the hotel and cottages would be replaced. The emergency generator would be replaced, and critical electrical upgrades completed. Aluminum guestroom windows at the hotel would be replaced with historically compatible wood-framed, double-paned casement windows with insulated, low-emissivity (low-e) glass. These actions would make indoor spaces, including guestrooms, more comfortable in temperature extremes and during power outages.

**Conclusion:** Proposed fire/life-safety and seismic stability improvements under Alternative 1 would result in long-term beneficial impacts on visitor safety at The Ahwahnee. The loss of two standard guestrooms would slightly affect room availability. Accessibility improvements, rehabilitation of historic features, increased restroom fixture counts, and improved heating and cooling systems would enhance the visitor experience at the facility. Reconfiguration of the Ahwahnee Bar would improve visitor services through operational upgrades. The addition of glazing to the bar's east wall would enhance the sense of arrival at the main entrance to the hotel. Upgrades to building systems would maintain the level of service for day visitors and overnight guests. Overall, improvements proposed with Alternative 1 would result in a local, long-term, minor to moderate, beneficial impact on visitor experience, services, and safety.

### Cumulative Impacts

Recently completed projects improved visitor experience, safety, and services through repairs, conformance with fire/life-safety codes, and rehabilitation to existing facilities. These projects included *The Ahwahnee Fire and Life Safety Improvements Project*, the *Provide Secondary Egress from 5th and 6th Floors Project*, *The Ahwahnee Hotel Kitchen FRP Board Installation Project*, *The Ahwahnee Rehabilitate Historic Light Fixtures Project*, *The Ahwahnee Hotel Interior Decoration*

*Projects, The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project, and the Recondition Pool Project.*

Current and/or reasonably foreseeable future actions, projects, and plans that would have a cumulative effect on visitor experience at The Ahwahnee hotel include the *East Yosemite Valley Utilities Improvement Plan*, which provides for utility needs of the aging, inadequate, and inaccessible utility infrastructure within the park, and the *Merced Wild and Scenic River Comprehensive Management Plan*, which addresses development (and/or removal) of facilities, user capacities, and specific management measures to protect and enhance the river's outstandingly remarkable values.

Cumulatively these actions, projects, and plans, when combined with the Alternative 1, would result in a local, long-term, moderate, beneficial impact on visitor experience, services, and safety.

## Environmental Consequences of Alternative 2

### Analysis

Proposed egress improvements at the East Wing and South Mezzanine with Alternative 2 would increase the likelihood that building occupants would be able to safely evacuate in the event of an emergency. One standard guestroom would be lost and one standard guestroom would be converted to an accessible suite due to the egress improvements at the East Wing, thus reducing the total room count to 122. The new exterior egress at the Tresidder Room would allow full public use of the South Mezzanine to resume.

Fire/life-safety improvements to the ventilation systems, linen chutes, and exhaust shafts would slow the spread of smoke and fire in an emergency. Improvements to the master key system would facilitate evacuation in an emergency. Automatic sprinkler protection, a fire alarm system, and carbon monoxide detection system in the cottages would provide a reliable means of notifying guests during a smoke or carbon monoxide condition.

In addition to seismic improvements proposed in all action alternatives, implementation of Alternative 2 would include pinning of all exterior granite veneers; reinforcing walls in the Solarium and Elevator Lounge; bracing all mechanical, electrical, and plumbing equipment; and providing structural bracing improvements to the Porte Cochere and Entry Gallery. The proposed seismic improvements would decrease the potential for injury to occupants from falling hazards.

Proposed accessibility improvements at ground floor entrances/exits, the service elevator, at the check-in and concierge desk, and at the event and facility manager offices, along exterior pathways to the wedding lawn and cottages, and the addition of a limited use/limited access elevator to access the South Mezzanine would bring the hotel further into compliance with ADA-ABA requirements. The addition of two new accessible guestrooms, including a guestroom suite with an accessible balcony on the mezzanine level of the East Wing and a standard guestroom on the fourth floor, would increase the number of accessible guestrooms to seven.

Bathroom facilities on the ground floor would include a new accessible women's restroom and a reconfigured men's restroom to increase fixture count. The Ahwahnee Bar would be remodeled, and incompatible, nonhistoric additions on the north and east side would be replaced with more sensitive design solutions, including a new wood-framed glass wall. These improvements would enhance the visitor's sense of arrival at the main entrance to the hotel, and would also enhance visitor service through operational improvements behind the bar.

Throughout the building, features with ‘poor’ condition ratings would be rehabilitated or stabilized; Very Significant and Significant spaces in ‘fair’ condition would be rehabilitated or preserved. All non-maintenance treatment recommendations for historic fabric and features, as specified in the Historic Structures Report (ARG 2011), would be implemented in Contributing and Historic Utilitarian spaces (see Appendix C). The proposed work would help preserve the National Historic Landmark for present visitors and future generations.

With implementation of Alternative 2, the heating system and cooling systems at the hotel and cottages would be replaced; additional air conditioning would be provided in public indoor spaces, including the South Wing; and guestroom ventilation would be improved. The emergency generator would be replaced, and critical electrical upgrades completed. Aluminum guestroom windows at the hotel would be replaced with historically compatible wood-framed, double-paned casement windows that have insulated, low-emissivity (low-e) glass. These actions would make indoor spaces, including guestrooms, more comfortable in temperature extremes and during power outages.

**Conclusion:** Proposed fire/life-safety and seismic improvements under Alternative 2 would result in long-term, beneficial impacts on visitor safety at The Ahwahnee. The loss of one standard guestroom would have a negligible impact on room availability. Re-established public access to the South Mezzanine, accessibility improvements, rehabilitation of historic features, increased fixture counts in the restrooms, and improved and expanded heating and cooling systems would enhance the visitor experience throughout the facility. The remodeled Ahwahnee Bar would improve visitor services through operational upgrades behind the bar. The addition of wood-framed glass at the north wall would enhance the visitor’s sense of arrive at the main entrance to the hotel. Overall, improvements proposed under Alternative 2 would result in a local, long-term, moderate, beneficial impact on visitor experience, services, and safety.

### **Cumulative Impacts**

The cumulative impact of Alternative 2 would be the same as under Alternative 1.

## **Environmental Consequences of Alternative 3**

### **Analysis**

Proposed egress improvements at the East Wing under Alternative 3 would increase the likelihood that building occupants would be able to safely evacuate in the event of an emergency. Four standard guestrooms would be lost on the mezzanine level due to emergency egress improvements at the East Wing. Two guestrooms would be permanently lost; the remaining space would be redefined as two accessible suites, thereby reducing the total room count to 121. The new exterior exit at the Tresidder Room would allow public use of the South Mezzanine to resume.

Fire /life-safety improvements to the ventilation systems, linen chutes, and exhaust shafts would slow the spread of smoke and fire in an emergency. Improvements to the master key system would facilitate evacuation in an emergency. Automatic sprinkler protection, a fire alarm system, and carbon monoxide detection system in the cottages would provide a reliable means of notifying guests during a smoke or carbon monoxide condition.

In addition to seismic improvements proposed in all action alternatives, implementation of Alternative 3 would include providing structural bracing improvements to the Porte Cochere and

Entry Gallery. The proposed seismic improvements would decrease the potential for injury to occupants from falling hazards.

Proposed accessibility improvements at ground floor entrances/exits, the service elevator, the check-in and concierge desk, the event and facility manager offices, and the addition of a limited use/limited access elevator to access the South Mezzanine would bring the hotel further into compliance with ADA-ABA requirements. Two new accessible guestroom suites, one with an accessible balcony, would be added at the mezzanine level in the East Wing, thus increasing the total number of accessible rooms to seven.

The men's public restroom on the ground floor and the women's public restroom on the mezzanine level would be expanded, and the numbers of fixtures would be increased. These additional fixtures would reduce lines for the facilities, particularly during dining hours. A new, escorted-access-only, unisex accessible restroom would be provided within the footprint of the maintenance building.

The Ahwahnee Bar would be remodeled, and incompatible, nonhistoric additions on the north and east sides would be replaced with more sensitive design solutions, including a new wood-framed glass wall. The improvements would enhance the visitor's sense of arrival at the main entrance to the hotel, and also would enhance visitor service through operational improvements behind the bar.

Throughout the building, historic features with 'poor' condition ratings would be rehabilitated or stabilized. Historic fabric and features in Very Significant and Significant spaces in 'fair' condition would be rehabilitated or preserved, and rehabilitation work associated with the proposed actions would help preserve the integrity of the National Historic Landmark and continue to make the facility available to visitors of today and future generations.

The heating system and cooling systems at the hotel and cottages would be replaced, but no additional air conditioning would be provided. The emergency generator would be replaced and critical electrical upgrades completed. Aluminum guestroom windows at the hotel would be replaced with historically compatible wood-framed, double-paned, insulated, low-emissivity (low-e) glass casement windows. These actions would make indoor spaces more comfortable in temperature extremes and during power outages.

**Conclusion:** Proposed fire life-safety and seismic improvements under Alternative 3 would result in long-term beneficial impacts on visitor safety at The Ahwahnee. The loss of two standard guestrooms would slightly affect room availability. Restored public access to the South Mezzanine, accessibility improvements, rehabilitation of historic features, increased restroom fixture counts, and improved heating and cooling systems would enhance the visitor experience at the facility. The remodeled Ahwahnee Bar would improve visitor service through operational upgrades behind the bar. The addition of wood-framed glass would enhance the sense of arrival at the main entrance to the hotel. Overall, improvements proposed in Alternative 3 would result in a long-term, moderate, beneficial impact on visitor experience, services and safety.

### **Cumulative Impacts**

The cumulative impact of Alternative 3 would be the same as under Alternative 1.

## **Facility Operations and Infrastructure**

### **Affected Environment**

The Ahwahnee hotel is a year-round, concessioner-operated, luxury hotel and day-use destination in Yosemite Valley. The facility provides services for overnight guests and day-use visitors that include dining, meeting facilities, retail outlets, private rooms, special events, and areas to relax or congregate. Operations at The Ahwahnee hotel can be categorized as either NPS or concessioner functions.

### **National Park Service**

In general, the National Park Service is responsible for maintaining the infrastructure outside the building (i.e., water lines, wastewater disposal, storm water management, electrical service, and roads), and providing visitor interpretation, protection, and emergency services. The National Park Service does not maintain a physical or operational presence at The Ahwahnee hotel. NPS operations are based from either outside the park in El Portal or elsewhere in Yosemite Valley.

### **Concessioner**

The concessioner is responsible for operating the facility as both a luxury hotel for guests and a day use destination for park visitors. The concessioner operates the hotel as an AAA®-rated, four-diamond hotel with dining, seasonal special events, wedding facilities, overnight accommodations, interpretive services, and retail outlets. The concessioner is responsible for maintaining the exterior and interior of the building, including seasonal repairs to roofing, balconies, and the exterior of the building. The concessioner is also responsible for maintaining entrance roads, parking areas, walkways, and grounds. Interior upkeep of all spaces, including painting and the maintenance and repair of mechanical, electrical, and plumbing systems, are ongoing.

### **Fire and Life-Safety**

Recent fire and life-safety upgrades at the hotel include secondary egress from the 5th and 6th floors and installation of fire sprinklers, detectors, and alarm systems throughout the hotel, as well as smoke curtains and fire department connections. Fire alarm and sprinkler systems are regularly tested and maintained by the concessioner. Several unresolved fire and life-safety issues remain.

At the recommendation of the Yosemite National Park fire marshal, the South Mezzanine meeting rooms were closed to public use in March 2011 due to inadequate emergency egress. Currently, business use by either concessioner or park staff only (up to a maximum occupancy of 30 people in the Colonial Room and Tudor Room) is allowed. All uses of the Tresidder Room have been suspended by the fire marshal. Hotel staff carry food, beverages, and meeting equipment up and down the single staircase to service these rooms.

The existing East Wing secondary egress from the second floor to the first floor (mezzanine) is via a narrow, non-compliant, exterior spiral staircase. At the mezzanine level this egress route connects to an exterior stair to ground level at the east and south side of the Ahwahnee Bar.

Fire code-compliant fire separation does not exist between the wood-framed Dining Room and the concrete and steel main hotel and Kitchen wing. In addition, the linen chutes and

ventilation/mechanical shafts throughout the hotel are not sealed at the top, bottom, or between floors at openings, and the elevator shafts have several unsealed penetrations.

The current master key system for guestrooms and supply rooms in the hotel is not a uniform, integrated system. In an emergency, firefighters would have difficulty accessing rooms in a timely manner to ensure guests and employees evacuate rooms and access spaces.

Site access around the hotel and to the cottages for emergency vehicles is not adequate. The driving surface around the perimeter of the building is narrow, not maintained to fire code, and lacks the ability to safely support the weight of a fully equipped fire engine. In addition, the hardened access does not extend fully around the South Wing of the hotel. Access by emergency vehicles to the cottages is not compliant with current fire code; the existing road is narrow and lacks adequate drainage crossing structures and areas to turn emergency vehicles around. The majority of the cottages are more than 50 feet from a fire department access road and several of the cottages are more than 150 feet from the existing fire department access road. Neither the cottages nor the employee dormitory have fire sprinklers, and smoke detectors and alarm systems are not fully code compliant.

### **Accessibility Compliance**

#### ***South Mezzanine Meeting Rooms***

The South Mezzanine is accessible only by a single, open, interior stairway. The three very significant historic rooms (Tressider Room, Tudor Lounge, and the Colonial Room) and the two flanking balconies are not accessible to the mobility-impaired.

#### ***Locker Room and Employee Breakroom***

There are about 200 employee lockers with men's and women's changing and shower facilities located above the Gift Shop, and these lockers are accessed from the loading dock area. The employee breakroom is located off the Kitchen; employees using the existing breakroom must cross through the Kitchen to access the area. Access or equal facilitation for disabled employees to these main facilities is not provided.

#### ***Administrative Offices***

Administrative offices are located in three general locations:

- behind the front desk for the Assistant Manager and General Manager, with space for other staff;
- on the first floor (mezzanine level);
- at the Business Center located on the North Mezzanine.

Office space is limited and insufficient; none of the offices is accessible by mobility impaired guests or employees.

At the North Mezzanine exit stair (near the service elevator), the existing door configuration opens onto a stair, which creates a falling hazard and is not in compliance with ADA-ABA requirements.

#### ***Ahwahnee Bar***

The Ahwahnee Bar is located in what was originally designed to be the Porte Cochere. The food preparation area and the bar are not accessible for employees.

## **Operational Efficiency**

### ***Kitchen***

Kitchen facilities are located on the ground floor of The Ahwahnee hotel in a separate wing adjacent to the Dining Room. All food preparation is done on site in the Kitchen. On-site coolers/freezers and food storage are insufficient in size; additional temporary facilities are set up for special events during the winter season.

The overall layout of the Kitchen is problematic, with safety concerns caused by the placement of hot cooking stations and food pick up areas. The Kitchen also lacks a dedicated plating area for banquets. Hotel employees must cross through the Kitchen to access the breakroom in the back of the Kitchen.

Additional health and operational issues include the following:

- The walls and doors of the Kitchen are not completely sealed, thus allowing rodents and insects to access the area.
- The Kitchen ceiling height is very high and the material is impossible to sanitize.
- In the main Kitchen area, some areas lack individual hand washing stations.
- Food prep sinks are old and difficult to clean in the main Kitchen.
- The dishwasher area lacks a three compartment sink.

### ***Ahwahnee Bar***

Food ordered in the Ahwahnee Bar is served from the main Kitchen, and the bar service station lacks hand sinks and required clearances for employees with disabilities.

### ***Storage Shed / Bellhop Area***

The existing storage shed / bellhop area is undersized.

## **Mechanical, Electrical, and Plumbing Systems**

### ***Mechanical***

Over the years, the mechanical systems serving the main hotel, cottages, and dormitory building have consisted of a number of systems and system types that have been maintained, modified, and improved. Maintenance requirements and emergency repairs increase as the systems age.

### ***Heating Systems***

When the hotel was completed in 1927, the heating system consisted of two low-pressure steam boilers located in the basement and steam radiators located throughout the building, including the guestrooms. The original boilers were replaced in 1956 and again in 1984. The original steam radiators and piping system in the public spaces and a few “back of house” spaces are still in operation.

In 1990, the hotel heating system was upgraded. The majority of the steam distribution piping and radiators were replaced with the current system that uses steam to hot water heat exchangers. The hot water piping system was extended at this time, and new air handling units were installed to heat public spaces, including the Dining Room, Gift Shop, Sweet Shop, and the women’s restroom. A new hot water distribution system for heating was installed to distribute hot (and chilled) water to individual four-pipe fan coils units located in each guestroom. This system relies

on electrical power for distribution. Access to the mechanical fan coils in rooms to service this system is very limited, and the fan coil units are reaching the end of their design life.

The steam boilers also heat the domestic hot water system via heat exchangers, provide heat for the pool through equipment located in the boiler room, and heat the dormitory building. The steam is distributed from the hotel to the dormitory building through piping that was recently replaced. The boiler room lacks proper ventilation.

In 2005 new heating, cooling, and exhaust systems were installed for the Kitchen area. The propane-fired, hot water boiler system used for heating is located on the Kitchen mezzanine.

Until recently, each cottage was heated by two electrical heaters. In 2009, split-system heat pumps were installed and one of the electrical heaters in each cottage was replaced with an indoor fan coil. The second electrical heater located in the bathroom remains and is integral to the toilet exhaust system.

### ***Cooling Systems***

A chilled water system for air conditioning was added to the hotel in 1990. The chilled water and hot water system together create the four-pipe system that provides cooling (and heating) to the guestrooms, the Dining Room, the Sweet Shop, and the Gift Shop. The remaining spaces in the hotel are not air conditioned.

The water system capacity was originally designed to heat and cool the cottages in addition to the hotel. The systems were never connected, and the chiller has never operated at full capacity. During the original installation, louvers in the cooling tower were not adequately sized according to the manufacturer's recommendations. However, since the chiller has never operated at full capacity, the lack of louvers has not been detrimental. The chilled water system uses R-22 (a HCFC) refrigerant, which will be phased out in 2020. The chiller room lacks ventilation.

The dormitory is generally not air conditioned; some through-the-wall individual electric air conditioners have been installed in the building.

At the cottages, temporary exterior heat pumps with indoor fan coils for air conditioning were installed in 2009.

### ***Guestroom Ventilation***

Ventilation, in its current configuration, does not function in the manner it was designed to perform. Originally, The Ahwahnee hotel guestrooms had operable transom windows above the interior guest doors and operable outside windows. Fans exhausted the guestroom corridors and helped draw air through the rooms and provided natural ventilation. The original interior transom windows have been permanently closed for fire safety precautions, thus leaving guestrooms with only outside windows and no cross ventilation to assist in cooling during the summer.

### ***Electrical Systems***

Electrical service is provided to the hotel by two separate services. One utility-owned transformer is located in an in-ground vault just outside the cooling tower shed, adjacent to the northwest corner of the Kitchen wing. This service provides power to the Kitchen, the supplementary Kitchen equipment in the mezzanine, and the hotel's mechanical air conditioning system.

The majority of the building's electrical load comes from a utility-owned transformer that resides in a room within The Ahwahnee hotel footprint at the northwest corner of the Kitchen wing. This



transformer feeds a main distribution panel in the main electric room located adjacent to the transformer. The main distribution panel feeds numerous other panelboard systems for building distribution. The system is in poor condition, with multiple code violations and equipment installed in hazardous locations. The hotel's main electrical distribution panels are located in the basement; water intrusion from seasonally high groundwater results in hazardous conditions for maintenance staff.

The original cloth-wrapped wiring is found throughout the hotel. The wiring for Kitchen equipment consists of conduit and wire. Wiring underneath the Kitchen floor is in poor shape, and some wiring is exposed and corroded.

In a power outage, the emergency generator is connected to the main distribution panel through a transfer switch in the boiler room. The backup generator can only partially service the hotel due to the two-volt systems that exist in the hotel.

### **Plumbing**

In general, the plumbing systems serving the main hotel consist of a number of systems and system types that have been maintained, repaired, modified, and added to over the years. Maintenance requirements increase with aging systems and leaks and emergency repairs are common.

### ***Sanitary System***

The interior sanitary system for The Ahwahnee hotel was installed in 1927 during the hotel construction. For the guestrooms, sanitary waste risers for toilets, lavatories, and bathtubs are located in plumbing chases between each pair of guestrooms. These risers discharge into horizontal mains that run in the ceiling spaces of the floors below. The horizontal mains discharge to vertical risers in various locations throughout the Great Lounge and Solarium, and then into the building drain located in the crawl space. The main vertical riser in the north tower chase (through the Great Lounge) has no supports. This has caused it to tilt and bend through the years.

In its current state, the sanitary system handles a fraction of its intended design due to buildup in the pipe system. Cleanouts were not installed on the upper floors, which causes difficulties in clearing drains when blockages occur. Due to the design life of the piping, the current system is in very poor condition throughout the hotel. The fittings and horizontal sanitary piping in the ceiling and crawl spaces are in very poor condition and are a constant source of leaks needing repair. Leaks above the Great Lounge have caused substantial damage to historic stenciling on the ceiling beams in that very significant public space. The main waste risers in the hotel crawlspace serve bathrooms on the South and East Wing floors above the crawlspace.

Waste lines beneath the kitchen were replaced in the early 1990s. Due to minerals in the water, these pipes are in poor condition from corrosion and oxidation. One of the dishwasher lines drains high-temperature hot water directly into the grease interceptor disposal line; this does not allow the grease trap to work properly.

### ***Domestic Water System***

The hotel's domestic water system was installed in the early 1990s and begins with a 6-inch line entering the south end of the crawlspace under the hotel. The domestic water passes through a hydraulically operated pressure-reducing station. The station is in poor condition, shows signs of corrosion, and is not functioning. Code-compliant water pressure following this valve should be

80 pounds per square inch (psi) or less, but pressure readings upstream and downstream of the device are approximately 114 psi.

The domestic hot water system is heated by the hotel's hot water heating system and stored in two 1,500-gallon tanks located in the basement. One of these tanks has been abandoned; the second storage tank is currently being used but is in extremely poor condition and requires patch work to maintain its operation. Most of the current domestic water supply plumbing system was upgraded to copper from galvanized piping in the 1990s. Fixtures are low-flow when possible and are generally in good working order.

### **Hazardous Materials**

Early coats of paint on The Ahwahnee hotel, cottages, and the dormitory building likely contain lead. Asbestos has been identified in steam pipe insulation and a few other materials. Asbestos abatement has been performed at the hotel during previous projects; however, some asbestos could still be present in the facility.

## **Environmental Consequences Methodology**

This analysis evaluates how operation and infrastructure might be altered as a result of the No Action and action alternatives. Analysis was based on whether there was a loss, gain, or change in the efficiency of operations or infrastructure or a change in public and employee safety. The proposed action alternatives in this comprehensive rehabilitation plan environmental assessment were evaluated in terms of the context, intensity, and duration of impacts on concessioner or NPS operations and facilities, and whether the impacts would be considered beneficial or adverse. Professional judgment was applied to reach reasonable conclusions as to the intensity and type of potential impacts.

**Context:** For the purposes of this analysis, only local impacts are considered. This includes impacts specific to operation and facilities within The Ahwahnee hotel, grounds, and cottages.

**Duration:** The duration of the impact considers whether the impact would occur in the short term or long term. A short-term impact would be temporary in duration and associated with construction-related activities. A long-term impact would have a permanent effect on operations and facilities.

**Intensity:** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major on operations and facilities. Negligible impacts are effects considered not detectable and would have no discernible effect. Minor impacts on operations and facilities would be slightly detectable but not expected to have an overall effect. Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable influence on operations and facilities and include those impacts that would reduce the ability to provide adequate services and facilities to visitors and staff.

**Type:** Impacts were evaluated in terms of whether they would be beneficial or adverse to operations or facilities. Beneficial impacts would improve operations, maintainability, and/or facilities. Adverse impacts would negatively affect operations, maintainability, and/or facilities or could impede the ability to provide adequate services and facilities.

## Environmental Consequences of the No Action Alternative

### Analysis

The No Action Alternative would be a continuation of the current condition and management as described in Chapter 2 and in the “Affected Environment” section above.

Impacts on facility operations and infrastructure, fire and life-safety concerns, and code violations would continue to result from the following conditions:

- Fire truck access around the hotel and to the cottages would remain limited.
- Route of egress in the hotel exiting the mid-level floors would remain unclear and difficult to follow.
- Non-compliant vertical chutes and shafts could act as conductors for smoke and flame in a fire emergency.
- The hotel key system would remain difficult to manipulate in an emergency.
- Electrical panels and systems would remain in the basement location, an area that periodically floods.
- Elevator shafts and controls would not meet current fire code.

The Ahwahnee Bar would remain in its current configuration and employee accessibility and health code concerns would persist. Food service would rely on the main Kitchen. The work area would not be accessible to all employees. The Kitchen area would remain in poor condition with an inefficient layout, and health code violations (e.g., a lack of dedicated sinks, a cleanable ceiling, and a clear separation of kitchen functions). The Kitchen would continue to lack sufficient storage for banquet events. Employees would continue to access the common breakroom located in the back of the Kitchen.

Office space for managers would remain limited and insufficient. The maintenance storage shed and bellhop area would remain undersized.

Mechanical, electrical, and plumbing systems throughout The Ahwahnee hotel would remain obsolete, with critical elements of most major systems having exceeded their expected service lifetimes. Regular, ongoing maintenance, as well as emergency repairs and piecemeal component replacements would be expected to increase with the age of the systems. Access to mechanical systems would remain challenging. Seasonally high groundwater would continue to create hazardous conditions for maintenance staff servicing electrical systems in the hotel basement. Sanitary plumbing systems would continue to require frequent emergency repairs and spill cleanup.

**Conclusion:** The No Action Alternative would continue noncompliance with fire/life-safety, accessibility, and health codes. Deterioration of portions of the facility, increasingly greater maintenance needs, and noncompliant employee work areas would persist. Therefore, the No Action Alternative would result in a local, long-term, moderate, adverse impact on operations, maintenance requirements, and facility infrastructure at The Ahwahnee.

### Cumulative Impacts

Past projects that have been evaluated in conjunction with the impacts of proposed action alternatives include *Install ADA Compliant Elevator Controls*, *Yosemite Valley Shuttle Bus Stop Improvements*, *The Ahwahnee Hotel Kitchen FRP Board Installation Project*, *The Ahwahnee Hotel*

*Interior Decoration Projects, Interim Rockfall Parking Plan for The Ahwahnee, The Ahwahnee Fire and Life Safety Improvements Project, Secondary Egress from 5th and 6th Floors Project, The Ahwahnee Hotel Kitchen FRP Board Installation Project, The Ahwahnee Rehabilitate Historic Light Fixtures Project, The Ahwahnee Hotel Interior Decoration Projects, The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project, and Recondition Pool Project.* These past projects have improved existing facilities and reduced ongoing maintenance requirements.

Current and/or reasonably foreseeable future actions, projects, and plans that would have a cumulative effect on The Ahwahnee hotel facility and operations include the *East Yosemite Valley Utilities Improvement Plan*, which would provide for utility needs of the aging, inadequate, and inaccessible utility infrastructure within the park, and the *Correct Grease Trap Design Deficiencies Project*.

Cumulatively, these actions, projects, and plans, when combined with the No Action Alternative, would result in a local, long-term, moderate, adverse impact on operations and facility infrastructure at The Ahwahnee hotel.

## Environmental Consequences of Alternative 1

### Analysis

Actions to improve conformance with fire and life-safety codes at The Ahwahnee hotel and cottages would include the following:

- Improving fire truck access around the hotel building and to the cottages;
- Adding compliant egress at the East Wing;
- Continuing closure of South Mezzanine meeting rooms (Tresidder Lounge, Colonial Room, and Tudor Lounge) to public use, although per fire code the Colonial Room and Tudor Lounge could remain available for employee meetings with up to 30 park or concessioner staff;
- Upgrading vertical shafts, chutes, venting systems, and fire separation throughout the building to provide protection to inhibit the uncontrolled spread of fire or smoke;
- Re-keying hotel locks for ease of fire department access in the event of an emergency;
- Installing a central fire alarm system, carbon monoxide detection system, and sprinkler system at the cottages and dormitory that would improve emergency personnel response and allow for more expedient evacuation of the buildings;
- Addressing hazardous conditions in the basement by waterproofing and installing proper grounding at electrical distribution panels.

Kitchen health code compliance and operational improvements would be accomplished as part of the construction of the new Kitchen mezzanine designed to brace the Dining Room in a seismic event. The new Kitchen layout would increase efficiency and address the health code compliance issues; however, refrigerated space would remain inadequate during special events.

Reconfiguration of the main Kitchen would improve defined areas for food preparation, cooking, plating, and service by separating work stations. Employee safety would be improved by moving hot surfaces from busy areas and creating a more functional layout. Upgrades to Kitchen infrastructure would improve food preparation and service conditions for employees and contribute to a more efficient Kitchen.

Relocating the employee locker/changing facilities to the new Kitchen mezzanine area would reroute the path of travel out of the main Kitchen, thereby improving the overall function of the

Kitchen. The locker rooms would be increased in size and made ADA-ABA accessible. Reconfiguration of existing administrative office spaces and the addition of new offices on the new Kitchen mezzanine would provide sufficient, accessible space for managers. Improvements to the Ahwahnee Bar and prep kitchen would include improved ADA accessibility to the workstation, expanded storage capacity, and expanded health-code-compliant facilities at the bar. The limited use/limited access elevator installed for the South Mezzanine would provide accessible spaces for NPS or concessioner employee meetings.

Improvements to mechanical, electrical, and plumbing systems throughout the facility would reduce regular maintenance requirements and the frequency of emergency repairs. Waterproofing the hotel basement would reduce risks to maintenance staff working with electrical equipment. New heating and cooling systems would be easier to access and replacement parts would be more readily available.

**Conclusion:** Implementation of Alternative 1 would address fire/life-safety code issues throughout the building; upgrade critical mechanical, electrical, and plumbing systems; provide a code-compliant Kitchen and Ahwahnee Bar; provide a limited use/limited access elevator to the South Mezzanine, and provide accessible work and break areas for employees. Overall, implementation of Alternative 1 would result in a long-term, moderate, beneficial impact on operations, maintenance, requirements, and facility infrastructure at The Ahwahnee.

### Cumulative Impacts

Past projects that have been evaluated in conjunction with the impacts of proposed action alternatives include *Install ADA Compliant Elevator Controls*, *Yosemite Valley Shuttle Bus Stop Improvements*, *The Ahwahnee Hotel Kitchen FRP Board Installation Project*, *The Ahwahnee Hotel Interior Decoration Projects*, *Interim Rockfall Parking Plan for The Ahwahnee*, *The Ahwahnee Fire and Life Safety Improvements Project*, *Secondary Egress from 5th and 6th Floors Project*, *The Ahwahnee Hotel Kitchen FRP Board Installation Project*, *The Ahwahnee Stabilize Kitchen Floor Project*, *The Ahwahnee Rehabilitate Historic Light Fixtures Project*, *The Ahwahnee Hotel Interior Decoration Projects*, *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project*, and *Recondition Pool Project*. These past projects have improved existing facilities and reduced ongoing maintenance requirements.

Current and/or reasonably foreseeable future actions, projects, and plans that would have a cumulative effect on The Ahwahnee hotel facility and operations include the *East Yosemite Valley Utilities Improvement Plan*, which would provide for utility needs of the aging, inadequate, and inaccessible utility infrastructure within the park, and the *Correct Grease Trap Design Deficiencies Project*.

Cumulatively, these actions, projects, and plans, when combined with Alternative 1 (i.e., address fire/life-safety code issues throughout the building; upgrade critical mechanical, electrical, and plumbing systems; improve operational efficiencies in the Kitchen and Ahwahnee Bar; and provide code-compliant, accessible work and break areas for employees), would result in a local, long-term, moderate, beneficial impact on operations, maintainability, and the facility.

## Environmental Consequences of Alternative 2

Conformance with fire/life-safety codes at The Ahwahnee hotel and cottages would include the following:

- Improving fire truck access around the hotel building and to the cottages.
- Adding compliant egress at the South Mezzanine and East Wing.
- Upgrading vertical shafts, chutes, venting systems and fire separation throughout the building to provide protection to inhibit the uncontrolled spread of fire or smoke.
- Replacing exhaust shafts in the guestroom bathrooms with a new metal fully ducted system; sealing the bottom of shafts, and installing wood-blocking or fire-proofing at all floor penetrations, improving fire resistance between floors.
- Providing an electronic card reader system for hotel locks that would allow use of one master key for emergency access;
- Installing a central fire alarm system, carbon monoxide detection system, and sprinkler system at the cottages and dormitory that would improve emergency personnel response and allow for more expedient evacuation of the buildings.
- Addressing hazardous conditions in the basement by waterproofing and installing proper grounding at electrical distribution panels.

The new mezzanine area above the Kitchen would be larger than the structure proposed in Alternatives 1 and 3 and would provide the maximum area for additional offices and meeting facilities. Kitchen code compliance would be accomplished as part of the construction of the new Kitchen mezzanine designed to brace the Dining Room in a seismic event. The new Kitchen layout would increase efficiency and address the health code compliance issues. Refrigerated space would be increased, thereby allowing for sufficient storage during special events.

The new mezzanine also would provide a cleanable ceiling over the food preparation areas. Reconfiguration of the main Kitchen would improve defined areas for food preparation, cooking, plating, and service by separating work stations. Employee safety would be improved by moving hot surfaces from busy areas and creating a more functional layout. Upgrades to Kitchen infrastructure would improve food preparation and service conditions for employees and contribute to a more efficient Kitchen.

Relocating the employee locker/changing facilities to the new Kitchen mezzanine area would reroute the path of travel out of the main kitchen, improving the overall function of the kitchen. The locker rooms would be increased in size and made ADA-ABA-accessible. Reconfiguration of existing administrative office spaces and the addition of new offices on the new Kitchen mezzanine would provide sufficient, accessible space for managers.

Improvements to the Ahwahnee Bar back bar and prep kitchen would include improved ADA accessibility to the workstation, health-code compliance upgrades in the form of a handwashing sink and a food preparation sink, expanded storage capacity, and expanded facilities at the bar. Installation of a limited use/limited access elevator for the South Mezzanine would provide accessible spaces for public or NPS or concessioner employee meetings, and would provide a mechanized system to assist in transferring food and service items.

Vertical clearance at the Porte Cochere would be increased to provide clearance for tour buses. Bellhops would unload buses in the protected entry area. Buses would not need to back out of the

parking lot as they currently do but could continue through the Porte Cochere parking area to exit.

The new maintenance shed proposed with Alternative 2 would provide operational improvements, including additional storage for the Gift Shop, enclosed garbage and recycling spaces, an enlarged luggage and valet/bellhop area, and an escorted-access-only unisex bathroom. The footprint of the new maintenance building would restrict service vehicle parking and access at the loading dock.

Improvements to mechanical, electrical, and plumbing systems throughout the facility would reduce regular maintenance requirements and the regularity of emergency repairs to operations. Waterproofing the hotel basement would reduce risks to maintenance staff working with electrical equipment. New heating and cooling systems would be easier to access, and replacement parts would be more readily available. Additional upgrades to plumbing and wiring; bracing all mechanical, electrical, and plumbing, and kitchen equipment for stability in a seismic event; and providing a new main point of entry for telecommunications, are additional safety upgrades that would be provided under Alternative 2.

**Conclusion:** Implementation of Alternative 2 would include the same beneficial impacts on operations and facilities outlined in Alternative 1. In addition, Alternative 2 would provide secondary emergency egress from the South Mezzanine; provide additional upgrades or replacement of mechanical, electrical, and plumbing systems; provide a new point of entry for telecommunications; maximize the use of a kitchen mezzanine for employee facilities; provide an enlarged maintenance shed with an additional public restroom; and raise the Porte Cochere to accommodate buses. Overall, implementation of Alternative 2 would result in a local, long term, moderate to major, beneficial impact on operations, maintenance requirements, and facility infrastructure at The Ahwahnee.

### **Cumulative Impacts**

The actions, projects, and plans that would have a cumulative impact on operations at The Ahwahnee would be the same as those identified under Alternative 1. In combination with Alternative 2, the cumulative actions, project, and plans would result in a local, long-term, moderate to major, beneficial impact on park operations.

## **Environmental Consequences of Alternative 3**

Conformance with fire and life-safety codes at The Ahwahnee hotel and cottages under Alternative 3 would include the following:

- Improving fire truck access around the hotel building and to the cottages.
- Adding compliant egress at the South Mezzanine and East Wing.
- Upgrading vertical shafts, chutes, venting systems and fire separation throughout the building to provide protection to inhibit the uncontrolled spread of fire or smoke.
- Rekeying hotel locks for ease of evacuation in the event of an emergency.
- Installing a central fire alarm system, carbon monoxide detection system, and sprinkler system at the cottages and dormitory that would improve emergency personnel response and allow for more expedient evacuation of the buildings.
- Addressing hazardous conditions in the basement by waterproofing and installing proper grounding at electrical distribution panels.

Kitchen code compliance would be accomplished as part of the construction of the new Kitchen mezzanine designed to brace the Dining Room in a seismic event. The new Kitchen layout would increase efficiency and address existing health code compliance issues. Refrigerated storage space would remain insufficient during special events.

Reconfiguration of the main Kitchen would improve defined areas for food preparation, cooking, plating, and service by separating work stations. Employee safety would be improved by moving hot surfaces from busy areas and creating a more functional layout. Upgrades to Kitchen infrastructure would improve food preparation and service conditions for employees and contribute to a more efficient Kitchen.

Relocating the employee locker/changing facilities to the new Kitchen mezzanine area would reroute the path of travel out of the main kitchen and improve the overall function of the Kitchen. The locker room would be increased in size and made ADA-accessible. Reconfiguration of existing administrative office spaces and the addition of new offices on the new kitchen mezzanine would provide sufficient, accessible space for managers. Improvements to the Ahwahnee Bar back bar and prep kitchen would include improved ADA accessibility to the workstation, expanded storage capacity, and expanded facilities at the bar. The limited-use/limited access elevator installed for the South Mezzanine would provide accessible spaces for NPS or concessioner employee meetings.

The new maintenance shed proposed with Alternative 3 would provide operational improvements, including additional storage for the Gift Shop, an enlarged luggage and valet/bellhop area, and an escorted-access-only unisex bathroom. The service area on the east side of the building would keep the area functional for deliveries.

Improvements to mechanical, electrical, and plumbing systems throughout the facility would reduce regular maintenance requirements and the regularity of emergency repairs to operations. Waterproofing the hotel basement would reduce risks to maintenance staff working with electrical equipment. New heating and cooling systems would be easier to access, and replacement parts would be more readily available. Additional upgrades to plumbing and wiring; bracing all mechanical, electrical, and plumbing, and kitchen equipment for stability in a seismic event; and providing a new main point of entry for telecommunications are additional safety upgrades provided under Alternative 3.

**Conclusion:** Implementation of Alternative 3 would include the same beneficial impacts on operations and facilities outlined in Alternative 1. In addition, Alternative 3 would provide secondary egress from the South Mezzanine; additional upgrades or replacement of mechanical, electrical, and plumbing systems; a new point of entry for telecommunication systems; and an enlarged maintenance shed that would improve bellhop storage, provide an additional restroom and increase maintenance storage capacity. Overall implementation of Alternative 3 would result in a local, long-term, moderate, beneficial impact on operations, maintenance requirements, and facility infrastructure.

### Cumulative Impacts

The cumulative impacts of Alternative 3 would be the same as under Alternative 1.



## **Socioeconomics**

### **Affected Environment**

This section presents information on the social and economic environment in the area that is anticipated to be most affected by decisions made in *The Ahwahnee Comprehensive Rehabilitation Plan*. The Ahwahnee hotel is located in Mariposa County and has a direct fiscal impact on that county. Therefore, this section discusses Mariposa County and the community of Mariposa.

#### **Mariposa County**

##### ***Population***

Mariposa County is located in the western foothills of the Sierra Nevada. The eastern portion of Mariposa County contains a large part of Yosemite National Park, including Yosemite Valley and the administrative headquarters in El Portal. According to the census (U.S. Census Bureau 2010a) population estimates, Mariposa is one of the smallest counties in the state in terms of population (52nd of 58). Population increased slightly less than 4% from 2000 to 2009 to 17,792. With a land area of 1,451 square miles, the population density is just over 12 persons/square mile (U.S. Census Bureau 2009). The population of Mariposa County increased at a faster rate than the state from 1990 to 1997, but has lagged the state since then (CDOF 2007; 2010c). Recent state statistics show that the rate of population increase in Mariposa County from 2009 to 2010 was one of the lowest in the state (CDOF 2010a). State Department of Finance population projections for Mariposa County for 2010 are 18,243, an increase of less than 1% from the 2009 population estimate (CDOF 2010b). The county has no incorporated cities. There are three census designated places, including the town of Mariposa and Yosemite Valley, and 13 other small unincorporated communities, such as El Portal, which serves as a major residential area for park employees and contains park warehouse and administrative facilities. Mariposa serves as the county seat.

##### ***Employment***

The labor force in Mariposa was 564 in 2000, an increase of 63% over 1990 (U.S. Census Bureau 1990c, 2000b). The leisure service industry sector accounted for the most employment at over 21%. Construction was the second-most important sector, accounting for 16% of employment. Government employment accounted for almost 14%, reflecting Mariposa's role as the county seat. Compared to 1990, the retail trade and financial sectors were less important in 2000. Government employment was consistently one of the most important employment sectors over the decade.

Between 1999 and 2009 the labor force in Mariposa County increased almost 43% from 6,650 to 9,500 (CEDD 2010a). The total wage and salary employment labor force in the county was 5,360 in 2009 (CEDD 2010a). County employment is dominated by the leisure and hospitality sector, which accounted for 39-40% of employment between 2000 and 2009. Government employment also plays a major role, making up 39% of total county employment in 2009. These industries are becoming even more significant in the county over time. Employment in goods-producing industries has been decreasing. In 1990, goods-producing industries (agriculture, mining, logging construction, and manufacturing) made up about 10% of total employment, compared to just over 5% in 2009. An estimated 4,090 jobs were supported by travel spending in 2008; this is a decrease from the estimated 4,300 jobs supported by visitors in 2004 (Dean Runyan Associates 2010).

Over the last decade, the annual average unemployment rate in the county decreased slightly but then increased, from 7.2% in 1999 to 10.6% in 2009 (CEDD 2010b). This is lower than the state's 2009 rate of 11.4%. The county's unemployment rate has historically been close to, and often higher than the state's unemployment rate. The gap between the county and the state unemployment rates has stayed fairly steady over the last decade, with the difference remaining less than 1%.

### ***Fiscal Status***

County revenues in 2009-2010 were \$70 million (Mariposa County 2010). Approximately 28% of the revenues were generated by taxes. Transient Occupancy Taxes accounted for over 53% of total taxes, or almost 15% of total county revenues. Public assistance expenses accounted for 31% of total county expenditures, and another 27% of expenditures were related to public protection services (Mariposa County 2010).

The total property tax base for the county in 2009-2010 was \$2.1 billion dollars, an increase of almost 2% from the previous year (CBOE 2009a).

Total taxable sales for Mariposa County were \$171 million in 2008, an increase of 2.3% from 2007 (CBOE 2009b). Retail store sales accounted for 36% of total taxable sales. Of retail sales, food stores accounted for 20% of total sales and eating and drinking places accounted for 19% of sales (CBOE 2009c).

Visitor-generated tax receipts were estimated at over 90% of county receipts from local sales taxes and Transient Occupancy Taxes in 2008 (Dean Runyan Associates 2010). Travel spending in Mariposa County has increased 69% from \$184.4 million in 1992 to \$311.6 million in 2008. Almost 37% of visitor spending was related to accommodations and another 29% was related to food and beverage services. Another 16% was spent on arts, entertainment, and recreation and 13% on retail sales. The remainder was spent on transportation and food stores. Transient Occupancy Taxes receipts for Mariposa County increased from \$6 million in 1999 to \$9.7 million in 2009, an increase of 62%.

### ***Visitor Levels/Spending***

A study of travel spending impacts was completed for California in 2009 (Dean Runyan Associates 2010). The study evaluated travel expenditures at the point of sale, employment, and earnings associated with travel expenditures and local and state traveler-related tax receipts. The study documents \$87.7 billion of direct travel spending in California in 2009, which was a decrease of 10% from 2008 in current dollars. Travel spending is estimated to have supported 881,000 jobs with earnings of \$30 billion. Approximately 57% of those jobs were in accommodations and food service; another 25% were in arts, entertainment, and recreation. Travel spending generated \$10.3 billion in tax receipts in 2009, including \$1.9 billion of local tax revenues.

Visitor spending generated over \$24 million in local sales tax receipts in the region in 2008. Travel spending was greatest in Mono and Mariposa Counties. Travel spending is estimated to have supported 13,580 jobs in the region in 2008. The employment generated by travel spending accounts for 76% of total wage and salary employment in Mariposa County.

The National Park Service recently issued a study on the impact of Yosemite National Park visitor spending on the economy within 50 miles of the park (Stynes 2007). The study found that park visitors spent a total of \$255 million in 2005. Over 65% of this, or \$147 million, was spent outside the park but within a 50-mile radius of the park. Over 50% of visitor spending was on accommodations; another 22% was spent in restaurants and bars. Park visitor spending in the

region supported 5,281 jobs and resulted in \$124.6 million in personal income, when direct and indirect economic impacts are considered. Although most park visitors indicated that visiting the park was their primary objective for visiting the area, some visitors indicated that they would have visited the area in any event. Thus, the study estimates that only 90% of the impact from visitor spending should be considered to have been generated due to the park.

Spending by visitor parties varies significantly between day-use visitors and overnight visitors, primarily due to the significance of lodging costs for overnight visitors. The average visitor spending by day use parties in 2005 was \$71 compared to an average of \$394 for all visitor parties (Stynes 2007). Day use visitor parties spent 55% of this total within the park and 45% in the communities outside the park but within 50 miles. Overnight visitors who stayed in the park spent 12-22% in the communities outside the park, while overnight visitors who stayed outside the park spent 68-89% in these communities.

### ***National Park Service Spending***

Yosemite National Park employed 710 people in 2005 and had a total payroll of \$35.2 million (Stynes 2007). A 2007 study estimates that the 2005 park employment and payroll supported an additional 1,000 jobs in the region. Park employment also increased personal income by \$42 million in the region.

### ***The Ahwahnee Operations***

The park concessioner operates visitor services in the park, including The Ahwahnee hotel and associated facilities. The Ahwahnee includes 99 hotel rooms and 24 guest cottages. The occupancy rate is high year-round, with peak park visitation in the summer and for special events (such the Bracebridge dinners, Chef's Holiday, and Vintners Holiday) in the fall, winter, and spring. These special events have a high rate of return visitors each year and contribute a substantial portion of the overall revenues for The Ahwahnee. In addition to serving overnight guests, meals and retail services are provided to a high number of day visitors throughout the year. The hotel also hosts other events, such as weddings and conferences. The Ahwahnee is staffed 24 hours per day, but the day shift has more employees than the overnight shift. Most employees work year-round but work fewer hours in the off-peak season, typically February and March. Many of the concessioner employees at The Ahwahnee are long-term employees who have been employed there for over 10 years. Some concessioner employee housing is provided in Yosemite Valley, but many employees live outside Yosemite Valley and commute to work.

Although specific revenues generated by The Ahwahnee are confidential, revenues from The Ahwahnee operations are known to make up a significant income source for the park. In addition, Transient Occupancy Taxes and sales taxes generated at The Ahwahnee make up a significant portion of total Transient Occupancy Taxes and sales taxes for the county, which depends heavily on these revenue sources for general government funding.

## **Environmental Consequences Methodology**

The socioeconomics section evaluates potential effects on the social environment, visitor populations, the local economy, and the park and its primary concessioner. Social and economic environments are primarily affected by changes in visitor levels, visitor spending, park and concessioner employment, and park and concessioner spending in the economy. The action alternatives were reviewed to determine how they would affect these factors. Construction activities related to the improvements included in each alternative would likely require short-term disruption of visitor services, including lodging, temporary reductions in the numbers of

rooms available, and temporary closures of other services (gift shops, restaurants, and bars) that could reduce visitation to the park and/or visitor spending in the park. Due to the uncertainties related to the timing of project implementation, the analysis of effects was qualitative, and professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts.

### **Visitor Population and Spending**

This analysis identifies potential changes in park visitor levels and visitor spending that could result from implementation of the alternatives. This section describes possible changes in the number of rooms and other visitor services and how that might result in potential changes in visitor spending.

### **Concessioner and Park Revenues**

This analysis identifies potential changes in revenues to the concessioner, and related changes in revenues to the park from the concessioner, resulting from the implementation of the various alternatives. Changes in revenues are addressed qualitatively, based on changes in the level of visitor services provided as well as possible disruptions of sales and services based on construction activities.

### **Concessioner Employment and Spending**

This analysis identifies potential changes in concessioner employment and spending for operations at The Ahwahnee. Concessioner information on employment and spending is addressed qualitatively due to confidentiality requirements related to the concession contract.

### **Local and Regional Economy**

The analysis identifies how potential changes to the hotel under each alternative would affect the potential for increased or decreased employment and wages. This section also addresses potential changes in employment and wages associated with the construction expenditures associated with each alternative. Those local economies most dependent on concessioner employment and wages and visitor spending are identified where relevant.

### **Mariposa County Tax Revenues**

This analysis identifies potential changes in tax revenues to Mariposa County from implementation of the proposed alternatives. Changes in revenues are addressed qualitatively, based on changes in the amount of lodging available and changes in other visitor services provided at The Ahwahnee hotel.

### **Impact Assessment**

Proposed actions under each alternative are evaluated in terms of the context, intensity, and duration of the socioeconomic impacts, and whether the impacts are considered to be beneficial or adverse to the socioeconomic environment.

**Context:** The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park and Mariposa County. Regional impacts are not expected.

**Intensity:** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts are effects that are considered not detectable or to affect

spending, employment, or wages by less than one percent. Minor impacts are effects on the socioeconomic environment that would be detectable but would not be expected to have a substantive overall effect, or would affect spending, employment, or wages by less than 5 percent. Moderate impacts would be clearly detectable and could have an appreciable effect, or would affect spending, employment or wages by between 5 and 10 percent. Major impacts would have a substantial, highly noticeable, and lasting influence on the socioeconomic environment, or would affect spending, employment or wages by more than 10 percent.

**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 associated with transitional types of activities. A long-term impact would have a permanent effect on the socioeconomic environment.

**Type:** Impacts are evaluated in terms of whether the impact 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. These would typically be associated with an increase in revenues, employment, and/or wages. 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 effects would typically be associated with decreases in revenues, employment, and/or wages.

## Environmental Consequences of the No Action Alternative

### Analysis

The No Action Alternative would not result in any short-term or long-term changes in the availability of visitor services or lodging and therefore would not impact visitor spending or concessioner revenues. Revenues to the park and Mariposa County would not be impacted.

**Conclusion:** The No Action Alternative would not impact local or regional employment or wages. There would be no impact on Mariposa County tax revenues.

### Cumulative Impacts

Many of the recent and current remediation actions in and around The Ahwahnee (such as the *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life Safety Improvements Project*, *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project*, *The Ahwahnee Hotel Replace Crawl Space Utilities Project*, *Parkwide Rehabilitate Concessioner Operated Fireplaces Project*, and *The Ahwahnee- Stabilize Kitchen Floor Project*) have had a moderate beneficial impact on the local economy through construction spending and employment. The actions required temporary closures of some facilities offsetting the beneficial cumulative impacts and resulting in short-term moderate adverse impacts on spending in the park while the facilities were closed.

The *Merced Wild and Scenic River Comprehensive Management Plan* is under development and its impacts are difficult to anticipate. If the plan were to reduce park visitor capacity this could have a long-term major impact on spending within the park and the region because it would reduce the number of visitors to the park. This would in turn impact local and regional employment, which would have secondary output impacts throughout the region.

The overall impact of the cumulative projects is anticipated to be negligible to minor and beneficial to the local and regional economy and negligible to the social environment. This

cumulative analysis assumes that the *Merced River Wild and Scenic River Comprehensive Management Plan* would not result in a substantive reduction in park visitor capacity.

## Environmental Consequences of Alternative 1

### Visitor Population and Spending

Implementation of Alternative 1 would require the short-term closure of some guestrooms to complete some of the proposed improvements, such as the replacement of windows and toilets. Phasing of these improvements has not been finalized at this time, but it is assumed that the number of rooms closed for improvements would be limited to the minimum required at any one time and that the duration of the closures would be minimized. The reduction in available guestrooms would be expected to reduce visitor spending in the short-term while the rooms are closed. Similarly, other improvements in the Dining Room, Ahwahnee Bar, and Gift Shop might result in some temporary closures during certain construction activities and reduce visitor spending on these services.

Although the National Park Service does not expect the short-term closure of some guestrooms and other visitor services to result in a detectable change in overall park visitation, it might result in a negligible to minor decrease in visitor spending in the park as visitors substitute other less expensive lodging and services for those normally obtained at The Ahwahnee hotel. The loss of two guestrooms would result in a minor decrease in visitor spending because any guests displaced from these rooms are likely to spend less on lodging at other facilities in the area.

### Concessioner and Park Revenues

Revenues to the concessioner would be reduced in the short-term based on the temporary reduction in lodging and other visitor services being provided, as described above. Since concessioner payments to the park are related to concessioner revenues, this would result in a reduction in concessioner revenues to the park. The long-term loss of two standard guestrooms would not be expected to result in a long-term decrease in concessioner and park revenues because the proposed conversion of four standard rooms to two guestroom suites would result in approximately the same revenue to the concessioner.

### Concessioner Employment and Wages

The vast majority of the changes in visitor services provided are expected to be short-term in nature. Given that the facility improvements would be implemented in a phased manner over a period of up to 20 years, the disruption of facilities and services is expected to be minimized to the greatest extent possible. Therefore, changes in the level of concessioner employment and wages are expected to be minimal and short-term in nature. In the long-term, only two standard guestrooms would be permanently lost, which would have a negligible effect on local and regional employment and wages. No long-term impacts on employment or wages are anticipated related to food and beverage or retail services.

### Local and Regional Economy

Impacts to regional employment and wages in both the short term and long term would be negligible. The Ahwahnee hotel is located in Mariposa County, and a majority of the concessioner employees live in the county. Mariposa County is also highly dependent on the visitor industry for employment and tax revenues. Therefore, it is likely that any economic effects from

implementation of the alternative (changes in employment and wages) would be felt most strongly by Mariposa County.

Alternative 1 is expected to result in construction spending of \$45 million over a period of about 20 years, or an average of approximately \$2.25 million per year. These construction expenditures are anticipated to result in approximately 20 direct full-time equivalent jobs each year and 12 indirect jobs (SRRI 2009). The impact on the state economy from the injection of \$2.25 million in construction spending each year is anticipated to result in an increase of \$5.2 million in the total output of the state economy and an increase of \$1.7 million in total earnings in the state (U.S. Bureau of Economic Analysis 2002). Because the multipliers used to generate these numbers is for the state of California as a whole, the economic impacts on the region in terms of employment and spending would likely be less because many construction workers might come from outside of the region and spend their earnings in other areas of the state. If half of the employment generated in the state were generated in Mariposa County, the economic area most closely affected by employment in the park, then it would still account for less than 1 percent of the county's employment.

The temporary closure of guestrooms during various construction activities would reduce Transient Occupancy Taxes revenues to the county during periods when guestrooms are temporarily closed. The extent of this impact would depend on the number of rooms closed, the duration of the closure, and to some degree, the timing of the closure. It is assumed that guestroom closures would be scheduled during the off-season, when vacancy rates are somewhat lower. It is also assumed that only a small number of rooms would be closed at any one time and that they would be closed for a short period of time. Therefore, the short-term effects on Mariposa County tax revenues over the implementation period would be mitigated to the extent possible. The permanent loss of two guestrooms would have a long-term, negligible adverse impact on county Transient Occupancy Taxes revenues because the lost revenue from two standard rooms would be offset by the addition of two ADA-compliant guestroom suites.

**Conclusion:** Under Alternative 1, visitor populations are not likely to be impacted and visitor spending displaced from lodging or other services at The Ahwahnee is likely to be captured at other establishments in the region. Therefore, the impact on visitor spending in both the local and regional economy would be negligible. Concessioner and park revenues would be reduced to some extent during the closure of various facilities and services. The impacts on concessioner and park revenues could be negligible to moderate, depending on construction phasing. Short-term decreases in concessioner employment and/or wages would likely be more than offset by the short-term increases in construction employment and wages, resulting in a short-term, beneficial impact on the local and regional economies. Impacts on Mariposa County could be minor to major and adverse in the short term, depending on the extent of guestroom closures (number of guestrooms and duration) over the 20-year implementation period. Long-term impacts on Mariposa County Transient Occupancy Taxes revenues would be negligible and adverse with the permanent loss of two standard guestrooms (the lost revenue would be offset by the conversion of four standard rooms to two accessible guestroom suites).

### Cumulative Impacts

The list of cumulative plans and projects evaluated under Alternative 1 are the same as listed under the No Action Alternative. The moderate beneficial impacts of the cumulative projects in the regional economy would be somewhat offset by the temporary lodging and facility closures. It is anticipated that many visitors might choose to simply move their business to a different facility,

with the region still benefiting from their spending. Therefore, cumulative actions in combination with Alternative 1 would likely result in local and regional, short-term, negligible to minor, beneficial impacts on the economy. Long-term, local impacts are expected to be negligible to minor and adverse due to the loss of two guestrooms. This cumulative analysis assumes that the upcoming *Merced River Wild and Scenic River Comprehensive Management Plan* would not result in a substantive reduction in park visitor capacity.

## Environmental Consequences of Alternative 2

### Visitor Population and Spending

Implementation of Alternative 2 would require the short-term closure of some guestrooms to complete some of the proposed improvements, such as the replacement of windows and toilets. Phasing of these improvements has not been finalized at this time, but it is assumed that the number of rooms closed for improvements would be limited to the minimum required at any one time, and that the duration of the closures would be minimized. The reduction in available guestrooms would reduce visitor spending in the short-term while the rooms are closed. Similarly, other improvements in the Dining Room, Ahwahnee Bar, and Gift Shop would result in some temporary closures during certain construction activities and reduce visitor spending on these services.

Although the National Park Service does not anticipate that the short-term closure of some guestrooms and other visitor services would result in a detectable change in overall park visitation, it might result in a negligible to minor decrease in visitor spending in the park as visitors substitute other, less expensive lodging and services for those normally obtained at The Ahwahnee hotel. No long-term impacts on visitor population or spending would occur related to the room or facility closures.

### Concessioner and Park Revenues

Revenues to the concessioner would be reduced in the short-term, based on the temporary reduction in lodging and other visitor services being provided, as described above. Since concessioner payments to the park are related to concessioner revenues, this would result in a reduction in concessioner revenues to the park. The long-term loss of one standard guestroom would not be expected to result in a long-term decrease in concessioner and park revenues because the proposed conversion of two standard rooms to a guestroom suite would result in approximately the same revenue to the concessioner.

### Concessioner Employment and Wages

The vast majority of the changes in visitor services provided would be short term in nature. Given that the facility improvements would be implemented in a phased manner over a period of up to 20 years, the disruption of facilities and services is expected to be minimized to the greatest extent possible. Therefore, changes in the level of concessioner employment and wages are expected to be minimal and short term in nature. In the long-term, only one standard guestroom would be permanently lost, which would have a negligible impact on local and regional employment and wages. No long-term impacts on employment or wages would be anticipated related to food and beverage or retail services.



## Local and Regional Economy

Impacts on regional employment and wages in both the short term and long term would be negligible. The Ahwahnee hotel is located in Mariposa County and a majority of the concessioner employees live in the county. Mariposa County is also highly dependent on the visitor industry for employment and tax revenues. Therefore, it is likely that any economic impacts from implementation of the alternative (changes in employment and wages) would be felt most strongly by Mariposa County.

Alternative 2 is expected to result in construction spending of \$68 million over a period of 20 years or an average of approximately \$3.40 million per year. These construction expenditures would result in an average of 30 direct jobs each year and 18 indirect jobs (SRRI 2009). The impact on the state economy from the injection of \$3.40 million in construction spending each year would result in a \$7.8 million increase in total state output and a \$2.6 million increase in total earnings in the state (U.S. Bureau of Economic Analysis 2002). Again, the economic impacts to the region in terms of employment and spending would likely be less because many construction workers might come from outside of the region and spend their earnings in other areas of the state. If half of the employment generated in the state were generated in Mariposa County, the economic area most closely affected by employment in the park, it would still account for less than 1 percent of the county's employment.

The temporary closure of guestrooms during various construction activities would reduce Transient Occupancy Taxes revenues to the county during periods when guestrooms are temporarily closed. The extent of this impact would depend on the number of rooms closed, the duration of the closure, and to some degree, the timing of the closure. It is assumed that guestroom closures would be scheduled during the off-season, when vacancy rates are somewhat lower. It is also assumed that only a small number of rooms would be closed at any one time and that they would be closed for a short period of time. Therefore, the short-term impacts on Mariposa County tax revenues over the implementation period would be mitigated to the extent possible. The permanent loss of one guestroom would have a long-term, negligible, adverse impact on county Transient Occupancy Taxes revenues because the lost revenue from the standard room would be offset by the addition of one ADA-compliant guestroom suite.

**Conclusion:** Under Alternative 2, visitor populations are not likely to be impacted, and visitor spending displaced from lodging or other services at The Ahwahnee is likely to be captured at other establishments in the region. Therefore, the impact on visitor spending in both the local and regional economy would be negligible. Concessioner and park revenues would be reduced to some extent during the closure of various facilities and services. The impacts on concessioner and park revenues could be negligible to moderate, depending on construction phasing. Short-term decreases in concessioner employment and/or wages would likely be more than offset by the short-term increases in construction employment and wages, resulting in a short-term, beneficial impact on the local and regional economies. Impacts on Mariposa County could be minor to moderate and adverse in the short term, depending on the extent of guestroom closures (number of guestrooms and duration) over the 20-year implementation period. Long-term impacts on Mariposa County Transient Occupancy Taxes revenues are anticipated to be negligible with the permanent loss of one standard guestroom (the loss would be offset by the conversion of two standard rooms into one accessible guestroom suite).

### **Cumulative Impacts**

The moderate, beneficial impacts of the cumulative projects in the regional economy would likely be somewhat offset by the temporary lodging and facility closures. It is anticipated that many visitors might choose to simply move their business to a different facility, with the region still benefiting from their spending. Therefore, cumulative actions with Alternative 2 would likely result in local and regional, short-term, negligible to minor, beneficial impacts on the economy. Long-term, local impacts are expected to be negligible to both the regional and local economy. This cumulative analysis assumes that the *Merced River Wild and Scenic River Comprehensive Management Plan* would not result in a substantive reduction in park visitor capacity.

## **Environmental Consequences of Alternative 3**

### **Visitor Population and Spending**

Implementation of Alternative 3 would require the short-term closure of some guestrooms to complete some of the proposed improvements, as described previously. Phasing of these improvements has not been finalized at this time, but it is assumed that the number of rooms closed for improvements would be limited to the minimum required at any one time, and that the duration of the closures would be minimized. The reduction in available guestrooms would reduce visitor spending in the short-term while the rooms are closed. Similarly, other improvements in the Dining Room, Ahwahnee Bar, and Gift Shop might result in some temporary closures during certain construction activities and reduce visitor spending on these services. Egress improvements between the ground and first floor would result in the permanent loss of two standard guestrooms. Although the short-term closure of some guestrooms and other visitor services would not result in a detectable change in overall park visitation, it might result in a negligible to minor decrease in visitor spending in the park as visitors substitute other, less expensive lodging and services for those normally obtained at The Ahwahnee hotel. The long-term closure of two guestrooms would result in a minor decrease in visitor spending because any guests displaced from these rooms are likely to spend less on lodging at other facilities in the area.

### **Concessioner and Park Revenues**

Revenues to the concessioner would be reduced in the short-term based on the temporary reduction in lodging and other visitor services being provided, as described above. Since concessioner payments to the park are related to concessioner revenues, this would result in a reduction in concessioner revenues to the park. Similarly, the long-term loss of two guestrooms would result in a long-term decrease in concessioner and park revenues. This impact of this would be minor.

### **Concessioner Employment and Wages**

The vast majority of the changes in visitor services provided are expected to be short term in nature. Given that facility improvements would be implemented in a phased manner over a period of up to 20 years, the disruption of facilities and services would be minimized to the greatest extent possible. Therefore, changes in the level of concessioner employment and wages would be minimal and short term in nature. In the long term, only two guestrooms would be permanently lost, which would have a negligible impact on local and regional employment and wages. No long-term impacts on employment or wages would be anticipated related to food and beverage or retail services.

## Local and Regional Economy

Impacts on regional employment and wages in both the short term and long term would be negligible. The Ahwahnee hotel is located in Mariposa County, and a majority of the concessioner employees live in the county. Mariposa County is also highly dependent on the visitor industry for employment and tax revenues. Therefore, it is likely that any economic impacts from implementation of the alternative (changes in employment and wages) would be felt most strongly by Mariposa County.

Alternative 3 is expected to result in construction spending of \$52 million over a period of about 20 years, or an average of approximately \$2.6 million per year. These construction expenditures would result in approximately 23 direct full-time equivalent jobs each year and 14 indirect jobs (SRRI 2009). The impact on the state economy is estimated at an increase of \$6 million in total state output and an increase of \$2 million in total earnings (U.S. Bureau of Economic Analysis 2002). Again, the economic impacts on the region in terms of employment and spending would likely be less than the impact on the state overall. If half of the employment generated in the state were generated in Mariposa County, the economic area most closely affected by employment in the park, it would still account for less than 1 percent of the county's employment.

The temporary closure of guestrooms during various construction activities would reduce Transient Occupancy Taxes revenues to the county during periods when guestrooms are temporarily closed. The extent of this impact would depend on the number of rooms closed, the duration of the closure, and to some degree, the timing of the closure. It is assumed that guestroom closures would be scheduled during the off-season, when vacancy rates are somewhat lower. It is also assumed that only a small number of rooms would be closed at any one time and that they would be closed for a short period of time. Therefore, the short-term impacts on Mariposa County tax revenues over the implementation period would be mitigated to the extent possible. The permanent loss of two guestrooms would have a long-term, minor, negligible impact on county Transient Occupancy Taxes revenues.

**Conclusion:** Under Alternative 3, visitor populations are not likely to be impacted, and visitor spending displaced from lodging or other services at The Ahwahnee is likely to be captured at other establishments in the region. Therefore, the impact on visitor spending in both the local and regional economy would be negligible. Concessioner and park revenues would be reduced to some extent during the closure of various facilities and services. The impacts on concessioner and park revenues could be negligible to moderate, depending on construction phasing. Short-term decreases in concessioner employment and/or wages would likely be more than offset by the short-term increases in construction employment and wages, resulting in a short-term, beneficial impact on the local and regional economies. Impacts on Mariposa County could be minor to major and adverse in the short term, depending on the extent of guestroom closures (number of guestrooms and duration) over the 20-year implementation period. Long-term impacts on Mariposa County Transient Occupancy Taxes revenues would be negligible and adverse with the permanent loss of two standard guestrooms (the loss would be offset by the conversion of four standard rooms to two accessible guestroom suites).

## Cumulative Impacts

The moderate beneficial impacts of the cumulative projects in the regional economy would likely be somewhat offset by the temporary lodging and facility closures. It is anticipated that many visitors might choose to simply move their business to a different facility, with the region still benefiting from their spending. Therefore, cumulative actions with Alternative 3 would likely

result in local and regional, short-term, negligible to minor, beneficial impacts on the economy. Long-term, local impacts would be negligible to minor and adverse due to the loss of two guestrooms. This cumulative analysis assumes that the *Merced River Wild and Scenic River Comprehensive Management Plan* would not result in a substantive reduction in park visitor capacity.

## **Energy Consumption and Climate Change**

### **Affected Environment**

#### **Regulations, Policies, and Planning Objectives**

There are a great number of federal, park, and state policies that address the need to design and operate facilities in a manner that minimizes energy consumption and carbon emissions and maximizes the use of renewable energy sources. In particular, Executive Order 13123 calls on federal agencies to take the lead in implementing energy conservation, maximizing the use of renewable resources, and reducing greenhouse gas emissions by setting goals for reduced energy consumption by federal agencies. The National Park Service has incorporated requirements for energy efficiency into its management policies for design, construction, and operation of park facilities.

In recent years, the National Park Service has hosted or participated in a series of regional and interagency workshops to explore climate change impacts and coping strategies. The National Park Service initiated the Climate Friendly Parks Program in 2004 to promote sustainable operations in parks and create climate action plans to reduce greenhouse gas emissions; almost 60 parks now participate. The National Park Service has also formed a system-wide Climate Change Response Steering Committee to foster communications, provide recommendations, and serve as an advisory body to National Park Service leadership on this issue.

#### **Yosemite National Park Climate Action Plan**

Yosemite National Park participates in the Climate Friendly Parks Program and has been designated a “Climate Friendly Park.” To obtain this designation, Yosemite has conducted a baseline greenhouse gas emissions inventory; developed a Climate Action Plan; and committed to educating park staff, visitors, and community members about climate change. The objective of the Climate Action Plan is to identify actions that Yosemite can undertake to reduce greenhouse gas emissions and thus address climate change. The plan recommends three strategies: reducing fuel use and greenhouse gas emissions, increasing climate change outreach and education efforts and performing subsequent emission inventories to evaluate progress, and developing future emission mitigation actions.

#### **Energy Consumption**

Energy consumption at The Ahwahnee hotel occurs year-round. The hotel has a central plant for generating chilled water, steam, and space-heating hot water. The chilled water system was installed in approximately 1990; the refrigerant used is R-22. Steam is generated in The Ahwahnee basement by two oil-fired boilers installed in the mid-1980s. The steam feeds heat exchangers that generate space-heating hot water, domestic hot water, and direct steam-fired radiators in The Ahwahnee public spaces. Hot water is distributed to the guestrooms, the Dining Room, Gift Shop, Sweet Shop, and bathrooms. The cottages have electric wall heaters, and the dormitory has a forced air heating system.

The energy consumption numbers listed below include operations at The Ahwahnee hotel and associated concessioner operated buildings. The average annual energy consumption by the concessioner from 2003 to 2007 includes the following:

- Electricity - 1,717,715 kWh. The facility is currently fed from the medium-voltage Yosemite Valley feeder system to two service transformers in the Kitchen and the basement at The Ahwahnee hotel.
- Propane - 40,950 gallons. Liquefied petroleum gas (LPG) tanks are located approximately halfway between the northwest corner of The Ahwahnee and the Employee Dormitory. These tanks feed the Kitchen of The Ahwahnee and the Employee Dormitory.
- Heating fuel - 185,523 gallons. A large underground oil tank in the service yard feeds The Ahwahnee boilers.
- Water - 26,427,344 gallons. Water is supplied to the facility by the National Park Service.
- Sewer - 26,392,487 gallons. The sanitary sewer system connects to the sewer main that extends to a waste water treatment plant located in El Portal and operated by the National Park Service.

## Environmental Consequences - Methodology

There is no clear consensus in the scientific community regarding the sources or causes of climate change, and there is limited guidance available on how to properly analyze the impact of local development projects on climate change. This is particularly true where the project is unlikely to result in large changes in local or regional emissions. This evaluation includes an assessment of changes in energy consumed and related levels of direct and indirect greenhouse gas emissions.

**Context:** The context of the impact considers whether the impact would be local, regional, national, or global. For the purposes of this analysis, local impacts would pertain to energy consumption within Yosemite National Park or specific to The Ahwahnee hotel.

**Intensity:** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts are impacts considered not detectable and that would have no discernible impact on the amount of energy consumed or the amount of emissions. Minor impacts are impacts that would be slightly detectable but would not be expected to have an overall impact on those conditions. Moderate impacts would be clearly detectable and could have an appreciable impact on energy use or emissions. Major impacts would have a substantial, highly noticeable influence on and could permanently alter those conditions.

**Duration:** The duration of the impact considers whether the impact would occur in the short term or long term. A short-term impact would be temporary in duration and be associated with transitional types of activities, such as construction. A long-term impact would have a protracted or permanent impact on energy use or emissions.

**Type:** Impacts were evaluated in terms of whether they would be beneficial or adverse in terms of energy consumption and climate change. Beneficial impacts would reduce energy consumption or reduce emissions. Adverse impacts would increase energy consumption or increase emissions.

## Environmental Consequences of the No Action Alternative

### Analysis

Under the No Action Alternative, existing hotel facilities would remain in operation as described in Chapter 2. No upgrades would occur to outdated heating and cooling systems. Inefficient

windows, inadequate insulation, and unsealed doors would remain. Energy use and emissions would stay at or near current levels.

**Conclusion:** Under the No Action Alternative, there would be little or no change to energy use and emissions, resulting in a local, long-term, negligible, adverse impact on energy consumption.

### Cumulative Impacts

Many of the current actions taking place in and around The Ahwahnee hotel might result in short-term increases in fuel and emissions during construction. These include the *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life Safety Improvements* project, and *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence*. The *Merced Wild and Scenic River Comprehensive Management Plan* is under development and its impacts on energy consumption are therefore difficult to anticipate.

Although the impacts of the No Action Alternative would remain locally adverse, the level of emissions overall in this area would be negligible in a regional or larger perspective. The National Park Service will continue to work toward overall reductions in energy consumption and greenhouse gas emissions to reduce park impacts on global climate change.

## Environmental Consequences of Alternative 1, 2, and 3

The difference among the action alternatives with regard to impacts on energy consumption and climate change would be negligible; minor exceptions are noted. Therefore, the action alternatives are analyzed together.

### Analysis

One of the National Park Service management objectives for park operations is to upgrade facilities and utility systems to conserve energy. Accordingly, design techniques and the application of new technology to reduce energy and water consumption have been incorporated into *The Ahwahnee Comprehensive Rehabilitation Plan*. The facility upgrades proposed under all action alternatives would reduce the overall use of energy by replacing inefficient windows, upgrading plumbing throughout the facility with low-flow fixtures, adding insulation, and completely replacing outdated heating and cooling systems to optimize operation of all heating, ventilation, and air conditioning systems.

Alternatives 1 and 3 would use high-efficiency, oil-fired boilers for steam heating. Kitchen equipment would be refurbished and reused whenever possible. Alternative 2 would offer additional reductions in emissions with the use of alternative energy to supplement high-efficiency propane boilers for hot water heating. Proposed dimming switches would allow the shutdown of heating, ventilation, and air conditioning (HVAC) and lighting systems at sections of the building that are unoccupied when the hotel is not full. All kitchen equipment would also be replaced with more efficient models under Alternative 2.

Short-term increases in fuel and emissions would occur during construction of any of the action alternatives.

**Conclusion:** Under Alternatives 1, 2, or 3, improved efficiency and reduced energy use would result in a local, long-term, minor to moderate, beneficial impact on overall energy consumption and resulting emissions at The Ahwahnee hotel and a regional, long-term, negligible, beneficial impact on energy consumption and climate change.

## Cumulative Impacts

Many of the recent actions in and around The Ahwahnee hotel resulted in short-term increases in fuel and emissions during construction. These include the *East Yosemite Valley Utilities Improvement Plan* and *The Ahwahnee Fire and Life Safety Improvements*, *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence* projects and others. The *Merced Wild and Scenic River Comprehensive Management Plan* is under development and its impacts on energy consumption are therefore difficult to anticipate.

The impacts of the proposed rehabilitation project under Alternatives 1, 2, or 3 would be locally beneficial; however, the level of emissions overall from this facility would be negligible in a regional or larger perspective. The National Park Service will continue to work toward overall reductions in energy consumption and greenhouse gas emissions to reduce park impacts on global climate change.

# Historic Properties

## Historic Sites, Buildings, and Landscapes

### Affected Environment

The Ahwahnee is located on a 35-acre site near the east end of Yosemite Valley at the base of the Royal Arches formation, north of the Merced River. The Ahwahnee historic site includes the main hotel building, eight guest cottages, a maintenance building, an employee dormitory, and a relatively recent mechanical building. The historic site boundary encompasses all of the historically significant features within The Ahwahnee area. As defined under section 106 of the National Historic Preservation Act, the area of potential affect (APE) for this project comprises The Ahwahnee hotel, its ancillary structures, and the area immediately surrounding these buildings (see Appendix A, Attachment A).

### Significance of The Ahwahnee

The Ahwahnee was originally listed on the National Register of Historic Places (NRHP) in 1977 and was designated a National Historic Landmark (NHL) in 1987 for its significance in architecture.

### ***National Register of Historic Places Eligibility Criteria***

The criteria of the National Register of Historic Places provide the basis under which a structure, site, building, district, or object can be considered significant for listing on the National Register. A potential resource needs to meet only one of the four criteria to achieve significance. The criteria include resources that:

- (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.

### ***Previous Evaluations of Significance***

The Ahwahnee's significance was originally documented in a 1977 NRHP nomination form and was updated in a 1987 NHL nomination form. The Ahwahnee was also included as part of the Yosemite Valley Historic District NRHP nomination form in 2006. A summary of previous National Register nominations is provided as Table 3-4.

**Table 3-4**  
**Summary of Previous National Register Nominations for The Ahwahnee**

Nomination	Date of Listing	Significance Level	Significance Criteria	Period of Significance	Contributing Resources Documented in Nomination
National Register of Historic Places	1977	National	C	1925-1927	The Ahwahnee hotel, exterior, interior, and ancillary buildings
National Historic Landmark	1987	National and Regional	C	1925-present	The Ahwahnee hotel exterior, hotel interior, meadow, stone gate house, parking lots, pond, and walkways north of Porte Cochere
Yosemite Valley Historic District (as The Ahwahnee Developed Area)	2006	National	A,C	1855-1942 (entire district)	The Ahwahnee hotel, guest cottages, linen building, entry road, gate lodge and post, west parking area, pond, paths to guest cottages, footbridge to guest cottages, footbridge near Merced River, bridle trail ford, drainage ways, tennis courts, terrace
Yosemite Valley Archeological District	1978		D		Not disclosed

Source: Architectural Resources Group 2010

### ***Current Statement of Significance***

The following statements are excerpted from *The Ahwahnee Historic Structures Report* (HSR) (ARG 2011), which provides the current statement of significance for The Ahwahnee.

Built in 1927 and designed by architect Gilbert Stanley Underwood, The Ahwahnee is one of the nation's most acclaimed buildings and a National Historic Landmark. The Ahwahnee achieves high levels of significance under National Register criteria. Primarily significant for architectural merit, under National Register criterion C, The Ahwahnee is considered one of the greatest of the national park lodges. Architecturally, it is a symbol of design excellence, 1920s architectural ideals, and Rustic style architecture on a previously unimagined scale.

#### **Potential Significance of The Ahwahnee under Criterion A**

Historically, The Ahwahnee is significant for its role in the development of tourism, national parks, and the concessions industry and for American citizens' then-emerging appreciation of the National Park System and the great outdoors. The Ahwahnee is significant for its stature among the great lodges of the West and as a representation of the developing resorts that attracted wealthy visitors in the country's new National Park System.

#### **Potential Significance of The Ahwahnee under Criterion B**

Although not designated for significance under Criterion B, The Ahwahnee is associated with numerous nationally renowned Americans who made great contributions in their fields; landscape architect Frederick Law Olmsted, Jr.; Steven T. Mather, first director of the National Park Service; and Horace Albright, the second director of the National Park Service.

#### **Significance of The Ahwahnee under Criterion C**

Primarily significant for architectural merit, under National Register Criterion C, The Ahwahnee is considered one of the greatest of the national park lodges. Previous designations, specifically



the National Historic Landmark nomination, note the Rustic monumentality of The Ahwahnee's architecture. Exhibiting indigenous materials and tenets of the Rustic style, but on a grand scale, The Ahwahnee is significant for its site, setting, materials, highest-quality design and artistic values, and craftsmanship.

#### **Importance of The Ahwahnee Property under Criterion D**

The Ahwahnee hotel facilities and associated built environment are not significant under Criterion D. However, important archeological features and sites are present in the vicinity of The Ahwahnee, and these resources are significant under Criterion D, as documented in the Yosemite Valley Archeological District nomination (1978).

#### **Period of Significance**

A building's period of significance is defined as the span of time in which a property attains the significance for which it meets the National Register criteria. The years 1925 to 1942 mark the period of significance of The Ahwahnee. The year 1925 corresponds to the initiation of the hotel's design and planning phase in addition to site selection. The end date of 1942 marks the year The Ahwahnee ceased to operate as a hotel and the beginning of the wartime use as a naval hospital.

By 1942, the design and construction of the hotel and grounds, which continued to be refined after the hotel's inauguration in 1927, were complete, representing the building's apex in terms of original design concept and integrity. Its site orientation and setting are crucial to The Ahwahnee's significance to the present time.

#### **Contributing and Non-Contributing Structures in the Project Area**

Information regarding contributing and non-contributing structures of The Ahwahnee has been extracted from the HSR (ARG 2011) and *The Ahwahnee Cultural Landscape Report* (AECOM and ARG 2011). See Appendix C for a complete list of the significance, historic integrity, and condition assessment classifications for features and spaces at The Ahwahnee.

#### **Contributing Structures**

##### **The Ahwahnee Hotel**

The dominant building in the project area is The Ahwahnee hotel. The hotel was constructed with a steel frame, reinforced concrete, and granite masonry. Three building wings form a Y shape—where the wings meet, the building is seven stories high. The central core of the building rises above the other wings and creates a tower of the fifth and sixth floors and the elevator penthouse.

The architect of The Ahwahnee, Gilbert Stanley Underwood, designed the exterior in what he called the "environmental" style. This style is now known as Rustic, Park Rustic, or Park Service Rustic. Because of the grand scale of The Ahwahnee, it is often described as "Monumental Rustic," meaning that it uses Rustic elements on a massive scale. Rustic architecture incorporated local natural materials, most notably stone and wood, and attempted to create buildings that blended with their natural setting and environment. Underwood specified that granite was to be placed with the weathered side to the exterior of the wall, so that the weathered walls would blend with the weathered granite cliffs surrounding the building.

Because of the history of hotels burning down in Yosemite, Stephen T. Mather insisted that The Ahwahnee be fireproof. In accordance, the exterior walls, rafter ends, and posts which look like wood were actually formed and stained concrete. The Dining Room, Porte Cochere, and

entrance walkway were the exception with their peeled log columns and trusses: a classic Rustic design element.

The large windows on the first floor provide views to the walls of Yosemite Valley. Balconies extend from each floor of the building to take advantage of the views. Concrete terraces, stamped to resemble flagstone, surround the hotel's east, south, and west sides; they are used as large, open sitting areas. Attached to the terraces on the east side of the hotel is an irregularly shaped concrete pool deck with a faceted scored pattern.

### **Guest Cottages**

Across Royal Arch Creek from the hotel are eight single-story cottage buildings, divided into a total of twenty-four units, and one storage building. Designed by Eldridge T. Spencer, construction on the cottages was completed in 1928. The cottages are sited east of the hotel and are sheltered in a wooded enclave. The cabins are set apart from the main hotel building as they were historically. The apparently haphazard arrangement of the cottages may be a result of an attempt to maintain the privacy for each, as well as to situate the cottages within the existing grove of trees.

The cottages were designed in a contrasting style to the main hotel building. Although they incorporate a few Rustic elements, like the stone chimneys, they are not Rustic-style buildings. They are a style uniquely their own, which cannot be easily categorized into other known styles. Each cottage is a single-story, wood-framed structure on a concrete foundation. Although the plans and roof forms are simple, great care was taken in detailing the buildings, as is appropriate for a luxury hotel. Some of the key details include: the vertical and horizontal wood siding, the projecting windows, the wide stenciled door frames, refined exterior wood-molded trim at the projecting windows, decorative wood vents at the gables, wood signs at gables, and notched rafter tails. The details of each cottage vary slightly from the others: the notching at the rafter tails, the stencils at the doors, and the signs at the gables. The cottage interiors were simple, but elegant, with furniture, Persian rugs, and other furnishings similar to those used in the main building. The wood floors and walls tied them to their forest setting. The stencils in the cottages are abstracts of birds, insects, and flowers in contrast to the basket-inspired stencils in the main building.

### **Bridges**

Stretching south of the hotel are several bridges crossing Royal Arch Creek. The bridges are constructed with abutments of stone or concrete. The design of the bridges, with their log construction, echoes the Rustic style of the hotel, though no one bridge is exactly like another.

### **Circulation**

Other circulation features in the project area include sidewalks, flagstone paths, and unpaved paths. One path leaves the terraces from the eastern corner near the pool; this path is approximately 6 feet wide and paved with asphalt, and connects the hotel terrace to a bridge and the cottages beyond. A flagstone path set in earth connects the terrace south of the hotel to the meadow. A smaller flagstone path connects these two along the west bank of Royal Arch Creek.

### **Non-Contributing Structures**

#### **Employee Dormitory**

Originally built by the Navy in 1943 as the Cooks and Supply Building, the building was moved to its current location and converted to employee housing in 1946 under the direction of Eldridge T. Spencer. The long, narrow, wood-framed, wood-sided structure is simple and utilitarian, which is a great contrast to the refined detailing of The Ahwahnee main building and cottages.

The wood-framed structure, located west of the hotel, is supported on concrete pier footings. A long corridor, extending almost the entire length of the building, divides the building in half. Employee rooms flank both sides of the corridor.

The dormitory exterior is horizontal wood siding, painted grey with an asphalt shingle roof. There are two doors on the north walls and one on the west wall. Each door opens onto a small wood deck and stairs. The main door has a ramp built over the stair. When the building was converted, it was designed to be a women's dorm, but it now houses some couples. Therefore, a small men's toilet room and a men's shower room have been added.

### **Character-Defining Features**

A character-defining feature is an aspect of a building's design, construction, or detail that is representative of the building's function, type, or architectural style. Character-defining elements include the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment (NPS 1988). Generally, character-defining features date to a property's period of significance. For a historic resource to retain its significance, its character-defining features must be retained to the greatest extent possible.

The Ahwahnee hotel site includes character-defining features that contribute to the property's ability to convey its significant associations, as well as to all seven aspects of its integrity: location, design, setting, materials, workmanship, feeling, and association (see 'Integrity,' below). These characteristics include buildings and structures as well as spatial organization, land use, circulation related to the buildings and their interrelationships, topography, vegetation, and views and vistas. The overall spatial organization and land use patterns are defined by walkway(s) between the buildings and remain unchanged since the period of significance. Views of the dramatic architecture of The Ahwahnee and the beauty of the natural surroundings contribute to the site's historic setting.

With The Ahwahnee's significant spaces there may exist non-contributing individual elements (e.g., the Dining Room). Conversely, within altered and modified spaces there remain elements of historic importance (e.g., the Ahwahnee Bar). This is especially true in the public spaces on the ground floor. On the upper floors, guestrooms retain their original configuration with fairly uniform treatment of character-defining features throughout.

### **Integrity**

Integrity is a key component of the overall building evaluation. For the National Register of Historic Places, integrity is the authenticity of an historical resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity involves several aspects, including location, design, setting, materials, workmanship, feeling and association. These aspects closely relate to the resource's significance and should be primarily intact for designation. This discussion of integrity concentrates equally on the building's exterior envelope and interior. While the exterior has been subjected to many modifications over the years, the original exterior architectural expression remains intact. On the interior, original circulation patterns remain, though some room configurations have been modified.

The Ahwahnee hotel historic site includes a substantial amount of intact and significant features and characteristics from its period of significance. Despite growth and site maintenance, the site continues its original use and its landscape features have undergone few physical changes. Alterations that have occurred to The Ahwahnee hotel and its ancillary buildings and surrounding

landscape have not compromised the overall design and materials of the site. The site as a whole possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and therefore retains sufficient integrity to convey its significance for the entire period of significance from 1925 to 1942.

### ***Location***

Location is the place where the historic property was constructed or the place where the historic event occurred. The main building, cottages and maintenance building are all in their original locations. The dormitory has been moved a short distance from the area of the parking lot, south to its current location. Although it has been moved, its close proximity to the original location has minimal impact on the integrity of the property. Therefore, The Ahwahnee has a high level integrity of location.

### ***Design***

Design is the combination of elements that create the form, plan, space, structure, and style of a property. The exterior of The Ahwahnee retains a high degree of the original design elements. In contrast to the Rustic style of the main hotel, the cottages are residential in design. Like the main hotel they retain a high degree of design integrity. The dormitory is a simple utilitarian building and also retains a high degree of design integrity. The greatest impact of the design integrity of all three types of structures is the replacement of the original wood windows with aluminum windows.

### ***Setting***

Setting is the physical environment of an historic property, constituting topographic features, vegetation, manmade features, and relationships between buildings or open space. The setting of The Ahwahnee at the west end of Yosemite Valley, under the Royal Arches formation, remains largely unchanged. Although there have been changes to the immediate site around the buildings, the integrity with regard to setting remains high.

### ***Materials***

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form an historic property. At the time of construction, a great deal of care was used to select high quality materials and finishes for The Ahwahnee. The integrity of exterior materials has been reduced by the replacement of windows, roofs, balcony paving, rafter ends and lamp beams. The materials of the Porte Cochere and entrance walkway have been entirely replaced and therefore have no integrity with regard to materials.

The material integrity of the interiors have been reduced by the replacement of carpets, removal of much of the original furniture and some of the furnishings, replacement of plumbing fixtures, painting over of a substantial amount of original stenciled artwork, and replacement of other finishes. The overall integrity of materials is moderate. The cottage exterior materials have been altered by the replacement of the windows, the roofs, the patio paving and the replacement of the exterior doors. The interior materials have been altered with entirely new finishes in the bathrooms, replacement of the lighting fixtures, the removal of all original furnishings and the partial removal of the stencils. The cottages have a moderate integrity of materials. The dormitory exterior materials have been altered by the replacement of windows, doors and roofing. The dormitory interior materials have been slightly altered by the replacement of lighting and flooring. The overall material integrity of the dormitory is moderate.

### ***Workmanship***

Workmanship is the physical evidence of the crafts of a particular culture, people, or artisan during any given period in history or pre-history. Because of the reduction in the material integrity, the integrity of workmanship is also reduced. The covering over of about half of the original stenciled artwork in the public areas and guestrooms has reduced the integrity of the artist workmanship. However, the overall integrity of the workmanship still remains high.

### ***Feeling***

Feeling is a property's expression of the aesthetic or historical sense of a particular period of time. The feeling of The Ahwahnee has been slightly impacted by the deterioration and replacement of finishes and materials and by the reduced maintenance of the grounds, but despite this still retains much of its original feeling. The feeling of the cottages has been largely retained in the wooded site. The feeling of the dormitory is also largely retained. Overall, The Ahwahnee has a high level of integrity of feeling.

### ***Association***

Association is the direct link between an important historic event or person and an historic property. Because The Ahwahnee retains its original use and design, the building retains its historical association with the development of national park concessions, Yosemite National Park, and the National Park Service. The association with Dr. Donald B. Tresidder and Mary Curry Tresidder (who were originally responsible for management of the hotel) has been somewhat reduced by the remodeling of the sixth floor. The cottages retain their association with their designer Eldridge T. Spencer because they retain the design. The dormitory retains its association with the Navy use. Therefore, The Ahwahnee as a whole retains a high level of integrity of association.

In summary, other than the Navy use during World War II, the main building and cottages have continued to be used for their original purpose as a grand hotel. The majority of the changes to the building were in response to trends in the hospitality industry and the replacement of deteriorated and worn materials. In terms of volume, massing, materials and original design intent, the building is intact. While some aspects of integrity have been diminished over time, The Ahwahnee retains sufficient integrity to convey its significance.

### **Landscape Characteristics**

The extraordinary natural features in The Ahwahnee project area were key factors in the siting and orientation of the hotel. The design of the site was informed by the Rustic style that was being established at this time by "landscape engineers" Charles Punchard, Daniel Hull, and Thomas Vint, and practiced by firms such as the Olmsted Brothers, and landscape gardeners such as Carl Purdy.

The following landscape characteristics include features that contribute to The Ahwahnee project area's cultural landscape and therefore historic significance:

- Buildings and Structures (as they relate to the surrounding environment)
- Circulation
- Views and Vistas
- Vegetation
- Natural Systems and Features

- Topography
- Land Use
- Spatial Organization
- Small-scale Features

### ***Buildings and Structures***

The central organizing element of the landscape is The Ahwahnee main building, designed to recall the cliff face, which is its backdrop. Other buildings within The Ahwahnee project area include the cottages and the dormitory, although these were sited to be obscured or unobtrusive from the main building. Additional structures within the project area include stone culverts, bridges, and service buildings.

### ***Circulation***

The cottages are accessible by means of pedestrian pathways and vehicle traffic (only for service and fire access). Pedestrian paths include asphalt paths and unpaved paths, providing a connection from the hotel to the cottages via two pedestrian bridges crossing Royal Arch Creek. The main asphalt path provides access to the cottages; there are two “spine” paths which link to individual cottages with smaller asphalt paths connecting to the cottage terraces (which are discussed below in ‘Buildings and Structures.’) The larger asphalt path continues east from the pedestrian bridge and leads towards the service and storage area east of the cottages. As this path crosses a small culvert, its asphalt paving disappears, and it is unpaved for the rest of its length. This unpaved path connects to the unpaved access roads which circle the cottages to the south, and becomes the valet parking area to the north and west.

Just east of the cottages, on the other side of an unnamed seasonal tributary, is a large, fragmented concrete pad, approximately 165 by 45 feet, used for equipment storage.

### ***Views and Vistas***

Scenic views and vistas are available from many areas of The Ahwahnee. Particularly notable are the views of Royal Arches, Yosemite Falls, Half Dome, and the views towards Royal Arches Cascade and Glacier Point (especially the former Fire Fall location). From the meadow, there are views back to the hotel. Many of these designed views have been compromised by the growth of vegetation over the years.

### ***Vegetation***

The vegetation at The Ahwahnee evokes the hotel’s natural surroundings. The mature evergreens, black oaks, and smaller understory shrubs and herbaceous plants define spaces within the grounds, screen views, and create garden spaces. The tall pines, firs, and sequoias dominate many areas of the landscape, and provide a thick ring of vegetation around the project area.

### ***Natural Systems and Features***

The Merced River runs along the southeastern boundary of the project area. Royal Arch Creek, a tributary of the Merced River, creates a physical separation between the hotel and the cottages. This seasonal creek flows during the winter, spring, and early summer, when it is fed by groundwater and snow melt, and it runs dry by the later summer. Lined with boulders, trees, and shrubs, the creek bed is quite deep. There is an unnamed seasonal tributary along the eastern edge of the cottages area that flows during rainfall and in the winter when groundwater levels are high, running dry in the summer. Its channel is composed mainly of stones and sandy soil.

### **Topography**

Yosemite Valley is relatively flat and bounded by enormous cliffs. The Ahwahnee area includes a slope down to the Merced River, the curvilinear channel of Royal Arch Creek, the shallow depression of the unnamed seasonal tributary east of the cottages, and the constructed drainage channel north of the dormitory. The major topographic modifications at The Ahwahnee include the raised plinth on which the hotel was constructed, which is evident on its western side.

### **Land Use**

The primary land use in the project area is lodging. This use has provided the basis for the design of the hotel and its grounds, including the cluster of cottages. Other secondary land uses include recreation. The dormitory supports the residential use of the grounds. Service and storage are supported in the service yard of the hotel, a storage building near the cottages, and the storage and service area east of the cottages.

### **Spatial Organization**

The entire project area is enclosed by the cliffs to the north, the river and thick band of woods and bicycle trail to the south, and dense evergreen woods to the east and west. The area immediately surrounding the hotel building contains the Porte Cochere and designed planted spaces.

The terraces are included in this area, as is the lawn and swimming pool. East of the hotel is the cottages area—a densely wooded area with an asymmetrical organization of the plantings and buildings.

## **Environmental Consequences Methodology**

In accordance with the Advisory Council on Historic Preservation's (ACHP) regulations implementing NHPA section 106, effects to cultural resources were identified and evaluated by:

- Determining the Area of Potential Effect (APE)
- Identifying cultural resources present in the APE that are either listed in or eligible for listing in the NRHP (Historic Properties)
- Applying the criteria of adverse effect to affected historic properties
- Considering ways to avoid, minimize, or mitigate adverse effects

Under ACHP regulations, a determination of *no historic properties affected*, *no adverse effect*, or *adverse effect* must be made for affected National Register of Historic Places (NRHP) eligible cultural resources. A determination of *no historic properties affected* occurs when there are no historic properties present, or the action will have no effect on historic properties. A determination of *no adverse effect* means that there is an effect, but the effect would not diminish, in any way, characteristics of a cultural resource that would qualify it for inclusion in the NRHP. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource which qualifies it for inclusion on the NRHP, by diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur at a later time or that would be cumulative over the course of time.

In accordance with 36 CFR 800 criteria of effect, The Ahwahnee historic site was analyzed qualitatively, based on modifications that would be made to character-defining features (features that qualified the property for inclusion in the NRHP and in 1987 as a NHL).

Alternatives and action items were considered individually and in relation to each other, to ensure that the analysis fully considers what elements of each action and/or linked actions would result in an adverse effect.

## Environmental Consequences of No Action Alternative

### Analysis

Under the No Action Alternative, code compliance recommendations would not be followed, including actions to bring the NHL structure into compliance with current seismic, building, plumbing, and electric codes and standards. Non-compliant or deteriorating mechanical, electrical, and plumbing (MEP) systems would not be replaced, upgraded, and/or refurbished. Recommended improvements to energy, water use, and operational efficiencies would not occur. The existing condition of historic spaces and features as detailed in Appendix C would persist.

Current maintenance and upkeep at The Ahwahnee would continue to provide interim repairs to aging MEP systems. However, due to the deteriorating condition of some of these systems, routine maintenance would not be sufficient to prevent system failure, which could lead to the catastrophic loss of historic features (e.g., failure of plumbing systems causing extensive water damage).

In addition, current maintenance and upkeep does not include repair or restoration of historic features. Historic spaces or features that are worn or in need of repairs and/or restoration would not be treated and no preemptive historic rehabilitation work would be performed to prevent further deterioration.

Therefore, the No Action Alternative would have the potential to diminish the integrity of The Ahwahnee, its contributing structures and features, and the ability for the property to represent its significant associations.

**Conclusion:** The No Action Alternative would have the potential to alter, directly or indirectly, characteristics of the historic site that qualified the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Therefore, the No Action Alternative would have an adverse effect on the historic property and on the Yosemite Valley Historic District.

### Cumulative Impacts

In general, past development, operation, and maintenance of facilities throughout Yosemite National Park have protected and preserved the integrity of historic properties. Past projects that have been evaluated in conjunction with the impacts of proposed action alternatives include the installation of ADA-compliant elevator controls within The Ahwahnee, the *Interim Rockfall Parking Plan for The Ahwahnee*, and the *Yosemite Valley Shuttle Bus Stop Improvements* project. These projects contribute to beneficial cumulative impacts, particularly the ADA compliance actions and related improvements that enabled visitors to access the historic property without impacts on historic integrity, contributing spaces, and character-defining features. Additional past projects evaluated include the *Fire and Life Safety Improvements Project*; *Provide Secondary Egress from 5th and 6th Floors Project*; *The Ahwahnee Hotel Kitchen Install FRP Board project*; *The Ahwahnee Stabilize Kitchen Floor project*; *The Ahwahnee Rehabilitate Historic Light Fixtures project*; and *The Ahwahnee Hotel Interior Decorations Projects 2010-11*.



*The Ahwahnee Fire and Life Safety Improvements Project* installed fire sprinklers, detectors, and alarm systems throughout the NHL, affecting every room of the building and involving varying levels of disruption to historic finishes. These actions enabled the NHL to be protected into the future and provided substantial life safety that otherwise was absent within the structure.

*The Secondary Egress from 5th and 6th Floors Project* addressed inadequate life-safety egress issues. The action altered public spaces and related character-defining features and materials. The project was determined to have an adverse effect on the NHL. The 2011 Programmatic Agreement (Appendix A), developed through consultation between the National Park Service and the California State Historic Preservation Officer (SHPO) (Appendix A), was implemented to resolve the adverse effect.

*The Ahwahnee Hotel Kitchen FRP Board Installation Project* installed fiberglass on the vertical walls of the Kitchen for cleanliness and moisture abatement. All work was fully removable and reversible and sensitive to the historic walls of the Kitchen.

*The Ahwahnee Hotel Stabilize Kitchen Floor* project structurally strengthened and stabilized portions of the kitchen floor at the hotel. This project addressed the immediate concern of stabilization prior to implementing a more comprehensive kitchen rehabilitation.

*The Ahwahnee Rehabilitate Historic Light Fixtures Project* addressed immediate safety concerns related to original fixtures which are character-defining features of the NHL.

*The Ahwahnee Hotel Interior Decoration Projects* enhanced the historic character of the NHL by restoring finishes appropriately to the period of significance of the building (1927-1942), and appropriately decorating spaces in the buildings to reflect or be compatible with that significance.

Current and/or reasonably foreseeable future actions, projects, and plans that would have a cumulative effect on the historic property include:

*The Scenic Vista Management Plan* creates a program for the park to comprehensively prioritize viewpoints for management. Historic viewpoints from the Dining Room, Great Lounge, front lawn, Winter Club Room, and Solarium have become overgrown and resulted in altered views that would be addressed as part of the plan.

*East Yosemite Valley Utilities Improvement Plan* would provide for utility needs of the aging, inadequate, and inaccessible utility infrastructure within the park, leading to a potential benefit for the historic property and especially The Ahwahnee hotel.

*The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project* would provide a more appropriate sense of arrival to the NHL, replacing rotted wood components along the wood-plank walkway and the service yard fence, allow better foundation for each component of the Porte Cochere, walkways, and fence, and address some drainage issues. These actions would benefit the entrance and its character-defining features to ensure the entire entrance does not further degrade from wood rot and water issues, and that the entrance to the NHL is not obstructed or uneven, rendering it not able to be used by visitors to the historic property. Previous alterations to the Porte Cochere supports and other wooden members render the proposed actions less impactful to historic design and fabric.

*The Ground Floor Extended Door Replication Test* would replace one set of exterior ground floor doors to serve as a design for replacement of the most severely damaged ground floor doors.

Cumulatively these actions, projects, and plans, when combined with the No Action Alternative, would result in an adverse effect to the NHL. Although the historic property would be

maintained, existing threats to the property and its systems from a lack of more substantial rehabilitation would continue.

## **Environmental Consequences of Alternative 1**

### **Fire/Life-Safety Compliance**

#### ***East Wing Egress***

The existing East Wing egress from the second floor to the ground is via a narrow, non-compliant spiral stairway at the second floor balcony. Alternative 1 would remove the non-compliant spiral stairway and provide a new interior stairway from the second floor to the mezzanine level.

Additional actions associated with the new stairway include reconfiguration of the Ahwahnee Bar and the addition of an accessible room with a balcony (see ‘Other Accessibility Actions,’ below).

Improved and compliant access would allow the historic property to be code-compliant and to better meet the needs of its original and on-going historic use. These alterations would be to non-historic additions and previously altered spaces.

#### ***Other Fire/Life-Safety Upgrades***

All of the action alternatives include the addition of a fire separation between the Dining Room and the hotel, with concealed overhead fire doors at the openings at the Dining Room entry, Kitchen door, and the Diggins Suite.

The Diggins Suite has been modified several times since the period of significance. The proposed roll-down doors at the Diggins Suite (mezzanine level) would be concealed in the ceiling except in the event of fire, at which time they would be deployed. The dropped ceiling location allows sufficient space to fully conceal the roll-down door from public view when it is not deployed.

In addition, Alternative 1 would provide code-required upgrades to electrical and ventilation systems. These actions are all considered necessary for the continued protection and preservation of the NHL and would not impact the integrity of the NHL or its contributing spaces and character-defining features.

### **Seismic Safety Recommended Practice and Structural Strengthening**

#### ***Kitchen Modifications***

Alternative 1 would brace the Dining Room from the Kitchen side with a minimally sized mezzanine. This would alter a character-defining volume of the Kitchen space, but structural stabilization of the wood-framed Dining Room is necessary to meet current seismic standards.

The existing floor, substrate, walls, and finishes in the Kitchen area would be altered and/or removed as necessary for structural work. This alternative would reuse as much existing equipment as feasible in the new, efficient, main kitchen layout. The existing north end of the Kitchen (with refrigerators and mezzanine) would be retained as much as possible. Partitions, doors, windows, slab, and finishes would be altered and/or removed along the south elevation, where necessary, to accommodate the seismic improvements.

Alternative 1 would include a partial mezzanine at the south and north of the Kitchen space. It would leave a portion of the original mezzanine space and a small area of the original double height of the Kitchen to convey its original design and configuration. These actions would retain and protect the character-defining features and materials of the Kitchen. The smaller mezzanine,

which addresses seismic engineering concerns while maintaining the character-defining volume of the space, allows Alternative 1 to less aggressively address the need for seismic strengthening of the Dining Room and improvements to operations within the Kitchen spaces than Alternative 2. Alternative 1 would minimize modification of the Kitchen's spatial configuration and original design.

The Kitchen is an important Contributing space due to its utilitarian function and design. The space reflects the original and continued function of the historic property and represents how such utilitarian spaces were designed and used. Under Alternative 1, a substantial amount of original volume within the space would be retained, as would a substantial amount of original partition walls. Original features and materials would be preserved to the extent feasible within the requirements of the rehabilitation process, and in particular the seismic stabilization effort. Alternative 1 would preserve an open area of two-story volume between the existing north mezzanine and the new brace-frame mezzanine on the south side of the Kitchen. The integrity of the historic spaces would be retained during rehabilitation actions, including the integrity of workmanship, materials, and feeling.

### ***Other Seismic Safety Actions***

Other seismic safety actions with the potential to affect the historic property under Alternative 1 would include the following:

- Columns at the west side of the Dining Room would be capped. The Dining Room would be braced in the east/west direction and the stone veneer on columns at the east side would be pinned. The proposed glazing would meet seismic life-safety requirements and would be installed without altering the original window frame profile.
- The exterior granite veneer at the hotel would be pinned with stainless steel pins at egress paths.
- Stone chimneys would be stabilized at five locations with an exterior collar strap and external guy wires. The alteration proposed for the stone chimneys stabilization would impact historic fabric and be visible on the exterior.
- Two-story walls at the Solarium and Great Room fireplaces would be braced to the building structure with strong backing at selected locations.
- Stone chimneys at the cottages would be reinforced with 2x blocking, clips, and straps in the attic space.
- Splice plate connections at the truss would be replaced and a snowmelt/retention system would be replaced at the roof. These actions would provide stabilization and strengthening.

These seismic strengthening actions are considered necessary to protect the structure and its character-defining spaces, features, and materials are protected and continue to be preserved into the future.

### **Accessibility Compliance**

#### ***South Mezzanine Meeting Rooms***

The South Mezzanine above the Solarium space is isolated and can be accessed only by a stairway in the Solarium. The Solarium as well as the three historic meeting rooms in the South Mezzanine (Tresidder Room, Tudor Lounge, and the Colonial Room) are identified as Very Significant in the HSR (see Appendix C). Under Alternative 1, the Tudor Lounge and Colonial Room would remain

closed to public use, but available for employee meetings of up to 30 people. The Tresidder Room would remain closed to all use.

In order to provide ADA-compliant employee accessibility to the Tudor Lounge and Colonial Room, Alternative 1 would provide a limited use/limited access elevator in an existing storage closet space to the northeast of the Solarium and would also re-route the existing mezzanine stairway leading from the northwest end of the Solarium to the meeting rooms.

Installation of a limited use/limited access elevator would require modifying the beam and slab at the ground floor and installing a new structure. The proposed elevator would be concealed within the walls of an existing storage closet space. Entry doors would be installed with a compatible wood-plank design, consistent with the original historic wood closet door. Adjacent plaster finishes would be restored. The action would also rebuild the centrally located stairway along the north elevation of the Solarium within the original rise + run ratio, as permitted, and include a handrail and signage improvements.

Actions that would impact historic fabric under Alternative 1 would include installing new doors and elevator controls to plaster wall elevations in Very Significant areas, altering the existing stairway above the landing over the fountain, removing the guardrail at the mezzanine, raising the light fixture over the stair, and installing new railings and handrails.

The proposed location of the elevator under Alternative 1 would result in a modification with less of a visual effect and less impact to the original configuration of the space than options such as in Alternative 2, which would require removal of partitions and altering of the Solarium area. The intent of the area would not be affected and the features representative of the area's original purpose, including existing spatial relationships and extant architectural features and materials (such as the dramatic fenestration along the south elevation), would be retained.

### ***Restrooms***

Alternative 1 would maintain the existing men's restroom in its current condition on the ground floor, while expanding the existing women's restroom on the mezzanine level to increase the fixture count and maintain accessibility. A unisex restroom would be added to the ground floor.

The existing women's restroom is a non-historic space that is identified in the HSR as Contributing with low integrity (see Appendix C). The existing women's restroom space has undergone previous modifications. Due to the modifications this area has already sustained, Alternative 1 is considered less impactful than relocating the women's restroom (Alternative 2), as it retains the original configuration of the space and does not introduce additional restrooms on the ground floor (other than a unisex restroom to be installed near the men's restroom).

Maintaining the original and historic separation of the women's and men's restrooms, and refraining from significant change to the spatial sequence of ground floor spaces, would meet the goal of providing more restrooms. In addition, introducing a single unisex restroom would not have an impact on the ground floor, because one additional restroom fixture would not lead to a significant change in function or aesthetic of the ground floor public spaces.

In summary, maintaining the men's restroom as-is, expanding the women's restroom on the mezzanine, and adding a unisex restroom on the ground floor would not significantly alter the original function, configuration, or design of character-defining spaces and features.

### **Other Accessibility Actions**

Other accessibility issues addressed under Alternative 1 include providing reversible ramps and hardware at selected ground floor exterior entrances, improving accessibility to the hotel's main front doors and improving accessibility at the front desk, concierge, and lobby spaces. Improvements would include changes to the existing counter to allow for accessible check-in, replacing the non-historic concierge counter with furnishings and a desk for service, and providing two additional ADA guestroom suites.

Under Alternative 1, the Ahwahnee Bar would be reconfigured to improve service and accessibility by removing the existing service bar and kitchen on the east side of the bar, removing non-historic additions at the east and north ends of the bar, and constructing a new kitchen and bar in a new projecting addition at the north end of the bar space. The roof of the projection would provide an accessible balcony for a new guestroom suite on the mezzanine level.

The above ADA compliance actions would provide improved and compliant access for visitors throughout the NHL, allowing the historic property to be code-compliant and to better meet the needs of its original and on-going historic use.

### **Historic Rehabilitation**

Under all action alternatives, historic rehabilitation actions would rehabilitate and stabilize features of the hotel in “poor” condition (see Appendix C). Features in “fair” condition in Very Significant and Significant spaces would be preserved and rehabilitated following the Secretary of the Interior's Standards for Rehabilitation (the *Standards*)(USDI 2005). Rehabilitation work also includes work directly associated with other actions that would affect historic fabric or features in the hotel and cottages.

Proposed historic rehabilitation actions allow for the continued protection and preservation of the NHL and its contributing spaces and character-defining features at each level of condition.

### **Operational Efficiency**

See ‘Seismic Strengthening,’ above, for the impacts of proposed changes to the Kitchen.

### **Locker Room Modifications**

Alternative 1 would provide a south Kitchen mezzanine that allows for new employee facilities (e.g., ingress, lockers, changing, breakroom, etc.) above the Kitchen.

Locker room modifications are linked to proposed actions within the Kitchen space. The locker room space is not architecturally articulated, although it is identified as a Contributing Historic Utilitarian space in the HSR (see Appendix C). The locker room modifications would occur in spaces that are essentially unmodified. The modifications would remove original partitions to accommodate a significant differential of nearly three feet along the floor where a proposed wheelchair lift would be added. The differential is between the area of the lift and the opposite (south) end, and there is a stairway at the wall where the differential occurs.

In summary, by modifying the Kitchen to include a partial mezzanine and correcting the differential along the floor, improved accessibility would be accommodated and operational goals can be met. In total, the configuration of the Kitchen and locker room spaces would not be substantially modified under Alternative 1.

### ***Other Operational Efficiency Actions***

Action items related to improving operational efficiency within The Ahwahnee include improvements to maintenance facilities and storage spaces as well as upgrades to electrical and mechanical systems. More extensive operational efficiency tasks include reconfiguration of the existing Gift Shop/Retail Storage space. Alternative 1 would also waterproof the basement, which would allow for fire safety and improved conditions in the historic structure.

The operational efficiency actions related to improving maintenance facilities and storage spaces, as well as upgrades to electrical and mechanical systems would have no impact on the integrity of the NHL or its contributing spaces and character-defining features.

### **Visitor Experience and Visitor Services**

Visitor experience and/or visitor service actions involving features related to historic fabric, or actions located near historic spaces and features, would include: removal of non-historic additions and finishes, rehabilitation of historic finishes at the Dining Room service bar, and reconfiguration of the Ahwahnee Bar. In addition, the lobby and guest arrival experience would be altered with the removal of the built-in counter and a provision of a moveable desk for the concierge near the Sweet Shop. Mechanical changes would be made to maintain capacity and improve heating and cooling in guestrooms. The non-historic passenger elevator would also be rehabilitated with design finishes and replacement fixtures of compatible historic character.

These actions would alter non-historic spaces, features, and materials. Rehabilitation of historic finishes at the wine bar and service bar would have a beneficial effect on the Dining Room.

### **Energy Efficiency**

Energy efficiency actions involving features related to historic fabric, or actions located near historic spaces and features, would include: removal of existing aluminum guestroom windows and replacement with historically compatible wood-framed, double-paned, insulated, low-e casement windows, and refurbishing historic fixtures in ground floor public areas.

In addition, HVAC units in guestrooms would be replaced. The majority of existing HVAC units are located in existing guestroom soffits, with some installed in adjacent storage rooms. New HVAC units would be installed in the same locations and would not be visible to guests. The majority of the existing walls adjacent to the HVAC units were previously altered to metal stud and gypsum board construction during installation of the existing HVAC units. Any remaining historic fabric would be preserved to the greatest extent possible. Historic registers and register openings would be reused wherever feasible.

### **Landscape Actions**

The proposed actions in the landscape outside of the hotel would allow the property to be code compliant for fire safety and also bring the property further into compliance with ADA-ABA requirements. None of the actions proposed would impact the integrity of the NHL or impact its contributing spaces and character-defining features.

**Conclusion:** Although the majority of proposed actions would not impact the characteristics that make The Ahwahnee eligible for inclusion on the NRHP, or diminish its integrity, as a whole Alternative 1 would result in an adverse effect to the historic property.

The 2011 Programmatic Agreement (Appendix A) would be implemented to resolve the adverse effect. In addition, NPS historical architects and the park historic preservation officer will

continue to work with the project design team and SHPO to minimize the adverse effect on the historic property during and construction planning and implementation.

Alternative 1 would result in no adverse effect to the Yosemite Valley Historic District.

### **Cumulative Impacts**

The list of past, present, and reasonably foreseeable actions that may affect the NHL and/or the Yosemite Valley Historic District is the same as under the No Action Alternative.

Cumulatively these actions, projects, and plans, when combined with Alternative 1 would result in an adverse effect on the historic property, but would not result in an adverse effect on the Yosemite Valley Historic District to which it contributes.

## **Environmental Consequences of Alternative 2**

### **Fire/Life-Safety Compliance**

#### ***East Wing Egress***

The existing East Wing egress from the second floor to the ground is via a narrow, non-compliant spiral stairway at the second floor balcony. Alternative 2 would remove the non-compliant spiral stairway and provide a new code-compliant exterior stairway from the second floor to the ground floor. Additional actions associated with this stairway include reconfiguration of the Ahwahnee Bar and the addition of an accessible room with a balcony (see ‘Other Accessibility Actions’ below).

Improved and compliant access would allow the historic property to be code-compliant and to better meet the needs of its original and on-going historic use. These alterations would be to non-historic additions and previously altered spaces.

#### ***South Mezzanine Egress***

A second, code-compliant means of egress is required at the South Mezzanine in order to allow public use of this space. The three Very Significant meeting rooms at the South Mezzanine (Tresidder Room, Tudor Lounge, and the Colonial Room) are distinctive, and the attached east and west balconies (off of the Colonial and Tresidder Rooms, respectively) provide unique first-level views to the surrounding hotel grounds, meadow, and iconic geologic formations.

To re-establish visitor access and enjoyment of the South Mezzanine spaces and balconies, Alternative 2 would provide code-compliant egress with a new door through the north wall of the Tresidder Room to an exterior fire escape. The proposed new door would further alter the space and the historic property. However, the proposed location represents the best overall solution to assure continued public access to these spaces while minimizing further visual effects on the building exterior in the vicinity of the non-historic fire escape. The interior door opening would be designed to be compatible with the character and finishes of the Tresidder Room. The exterior door opening would be situated in an existing niche behind a pilaster column projection at the mezzanine elevation of the existing non-historic fire escape, thereby minimizing visual effects on the significant exterior of the hotel building.

#### ***Other Fire/Life-Safety Upgrades***

All of the action alternatives include the addition of a fire separation between the Dining Room and the hotel, with concealed overhead fire doors at the openings at the Dining Room entry,

Kitchen door, and Diggins Suite. As noted under Alternative 1, the Diggins Suite has been modified several times since the period of significance and the proposed roll-down doors would be concealed in the ceiling, where they would be fully concealed from public view when not deployed.

In addition, Alternative 2 would replace the elevator service side pocket door and cage, provide a fully metal ducted shaft system, install wood blocking or fire-safing at all floor penetrations, and improve the fire resistance in the vicinity of the first floor linen room. Alternative 2 would provide a new corridor ventilation system for guestroom corridors and would upgrade ventilation in the Elevator Machine Room by providing a permanent air conditioning unit with an exterior vent through an existing window opening.

The proposed ventilation system for the Elevator Machine Room would involve removing the abandoned exhaust fan unit on the north-facing side of the penthouse and installing a new louver within the same, already-modified window. The venting for the preferred cooling system would affect only previously altered openings from the penthouse; no remaining historic fabric would be altered by the new ventilation system.

These actions are all considered necessary for the continued protection and preservation of the NHL.

## **Seismic Safety Recommended Practice and Structural Strengthening**

### ***Kitchen Modifications***

Alternative 2 would brace the Dining Room to the Kitchen side with a partial south mezzanine at the Kitchen that would alter a character-defining volume of the Kitchen space. Alternative 2 would also provide a new, efficient Kitchen layout and would remove existing refrigerators and the mezzanine to build a new north Kitchen mezzanine.

Alternative 2 would have an extensive impact on the existing partitions, doors, windows, slab, and finishes in the Kitchen. The existing floor, substrate, walls, and finishes in the Kitchen area would be removed for structural work. All appliances and major equipment would also be removed and the historic refrigerator doors salvaged for reuse. Partitions, doors, windows, slab, and finishes would also be removed in the Kitchen along the south elevation. Under Alternative 2, the Kitchen space would be completely void of original partitions.

Kitchen spaces and ancillary spaces (along the north end) that include the freezers and refrigerators would be, for the most part, removed. A new elevator would be accommodated through the removal of original walls, slab, beam, and finishes; shoring of existing structure would be done as required. A new exterior opening would be cut out of a concrete wall with selective removal of stone veneer as necessary. Historic doors would be removed and salvaged for reuse where partitions at freezers/refrigerators would be removed.

The Kitchen is an important Contributing space due to its utilitarian function and design. The space reflects the original and continued function of the historic property and represents how such utilitarian spaces were designed and used. Alternative 2 would remove features and materials from the Kitchen that are paramount to understanding the original construction and configuration of this utilitarian space and its representation of the utilitarian spaces within The Ahwahnee.



### ***Other Seismic Safety Actions***

Other seismic safety actions with the potential to affect the historic property under Alternative 2 would include the following:

- Columns at the west side of the Dining Room would be capped. The Dining Room would be braced in the east/west direction and the stone veneer on columns at the east side would be pinned. The proposed glazing would meet seismic life-safety requirements and would be installed without altering the original window frame profile.
- The exterior granite veneer at the hotel would be pinned with stainless steel pins throughout the exterior of the hotel.
- Stone chimneys at the hotel would be stabilized at five locations using non-visible internal reinforcing rods with a concrete ring in the attic.
- Two-story walls at the Solarium and Great Room fireplaces would be braced to the building structure with strong backing at selected locations.
- Stone chimneys at the cottages would be reinforced with 2x blocking, clips and straps in the attic space.
- Splice plate connections at the truss would be replaced and a snowmelt/retention system would be replaced at the roof.

These seismic strengthening actions are considered necessary to protect the structure and its character-defining spaces, features, and materials are protected and continue to be preserved into the future.

### **Accessibility Compliance**

#### ***South Mezzanine Meeting Rooms***

The South Mezzanine above the Solarium space is isolated and can be accessed only by a stairway in the Solarium. The Solarium as well as the three historic meeting rooms in the South Mezzanine (Tresidder Room, Tudor Lounge, and the Colonial Room) are identified as Very Significant in the HSR (see Appendix C). Under Alternative 2, the South Mezzanine meeting rooms would be re-opened to public use (see ‘Fire/Life-Safety Compliance, South Mezzanine Egress,’ above).

In order to provide ADA-compliant access to the South Mezzanine, Alternative 2 would provide a limited use/limited access elevator at the Solarium. Installation of the limited use/limited access elevator would require modifying the beam and slab at the ground floor to install the new structure. The location of the new elevator under Alternative 2 would require the removal of partitions of existing walls and would further alter the Solarium and the South Wing of the hotel. Shear wall installation at the east and west ends of the Solarium would coincide with the work proposed, with new walls to match existing adjacent walls.

The impact on historic fabric from the proposed action would include installing new doors and elevator controls to plaster wall elevations in Very Significant areas, altering the existing stairway above the landing over the fountain, removing the guardrail at the mezzanine, raising the light fixture over the stair, and installing new railings and handrails. The new elevator would create an entirely new access to the Solarium from the existing condition, which would change the current and original symmetry of the space.

Reconfiguring the stairway so that it no longer follows its original spatial configuration and direction would also have an impact. The new stairway would change the original configuration and direction of travel providing access to the mezzanine spaces. The stairway materials were

added during a modification to the original stairway after the period of significance, and yet the configuration is character-defining and reflects the original configuration of the stairway built during the construction of the historic property.

The intent of the area would not be impacted and the features representative of the area's original purpose, including existing spatial relationships and extant architectural features and materials (such as the dramatic fenestration along the south elevation), would be retained.

### ***Restrooms***

Alternative 2 would reconfigure the men's restroom on the ground floor to increase its fixture count, maintain the existing women's restroom on the mezzanine, and provide a supplemental accessible women's restroom on the ground floor to increase the overall fixture count on the ground floor.

While office spaces on the ground floor have been modified over the years, introducing a women's restroom on the ground floor, in addition to the existing men's restroom, would alter the original use and configuration of these spaces and of the ground floor in general. Expanding the ground floor restroom spaces with a substantial number of additional fixtures would impact the overall configuration, function, and visitor experience associated with the ground floor and its many Significant and Very Significant spaces.

Adding a women's restroom to the ground floor would significantly impact the integrity and character of the ground floor and would specifically impact the feeling and design of the spaces. While the existing spatial relationships and extant architectural character of the public spaces would be retained, the intent of the ground floor areas would not be maintained or protected.

### ***Other Accessibility Actions***

Other accessibility issues addressed under Alternative 2 include: outfitting the main doors to the hotel with an automatic door operator and thresholds in a historically compatible and acceptable manner that would be *Standards*-compliant; providing reversible ramps and hardware at selected ground floor exterior entrances; and improving accessibility at the front desk, concierge, and lobby spaces by converting the existing counter to allow for accessible check-in and replacing the non-historic concierge counter with furnishings and a desk for service. In addition, two additional ADA-compliant guestrooms, one a suite with a balcony, would be provided.

Alternative 2 would reconfigure the Ahwahnee Bar to improve service and provide accessibility by removing the existing service bar and kitchen on the east side of the space, removing non-historic additions at the east and north ends of the bar, constructing a new kitchen and bar in a new projection on the east wall, and installing glazing in the north wall to restore a sense of openness similar to the original design intent for this space.

The above ADA compliance actions would provide improved and compliant access for visitors throughout the NHL, allowing the historic property to be code-compliant and to better meet the needs of its original and on-going historic use.

### ***Historic Rehabilitation***

Under all action alternatives, historic rehabilitation actions would rehabilitate and stabilize features of the hotel in “poor” condition (see Appendix C). Features in “fair” condition in Very Significant and Significant spaces would be preserved and rehabilitated. Rehabilitation work also includes work associated directly with other actions that would affect historic fabric or features in the hotel and cottages. All rehabilitation efforts would be *Standards*-compliant. In addition,

Alternative 2 would implement non-maintenance treatment recommendations (ARG 2011) for the hotel and cottages for features/fabric in Contributing and Historic Utilitarian spaces.

Proposed historic rehabilitation actions would allow for the continued protection and preservation of the NHL and its contributing spaces and character-defining features at each level of condition.

### **Operational Efficiency**

See ‘Seismic Strengthening,’ above, for the impacts of proposed changes to the Kitchen.

#### ***Locker Room Modifications***

Alternative 2 would provide accessible employee facilities including locker rooms, offices, a breakroom, service elevator, and a mechanical/electrical room on the new partial south mezzanine.

Locker room modifications are linked to proposed actions within the Kitchen space, which would be required to allow the locker rooms to become accessible for ADA purposes and improved for operational efficiency. The locker room space is not architecturally articulated, though it is identified in the 2011 HSR as a Contributing Historic Utilitarian space (see Appendix C).

The locker room modifications would occur in spaces that are essentially unmodified. The action would remove original partitions to accommodate a significant differential of nearly three feet along the floor where a proposed wheelchair lift would be added. The differential is between the area of the lift and the opposite (south) end, and there is a stairway at the wall where the differential occurs.

By modifying the Kitchen to include a full mezzanine, and correcting the differential along the floor, improved accessibility would be accommodated and extensive operational goals can be met. The configuration of the Kitchen and locker room spaces would be substantially modified.

#### ***Other Operational Efficiency Actions***

Action items related to improving operational efficiency within The Ahwahnee include improvements to maintenance facilities and storage spaces as well as upgrades to electrical and mechanical systems. More extensive operational efficiency tasks include raising the height of the Porte Cochere to accommodate modern buses and a reconfiguration of the Gift Shop/Retail Storage space. Like Alternative 1, Alternative 2 would also waterproof the basement, which would allow for fire safety and improved conditions in the historic structure.

The operational efficiency actions related to improving maintenance facilities and storage spaces as well as upgrades to electrical and mechanical systems would have no impact on the integrity of the NHL or its contributing spaces and character-defining features.

Modification of the height of the Porte Cochere would impact the relationship of the Porte with its base, the adjacent walls, and the entry canopy.

### **Visitor Experience and Visitor Services**

Visitor experience and/or visitor service actions involving features related to historic fabric or actions located near historic spaces and features would include: removal of non-historic additions and finishes, and rehabilitation of historic finishes at the Dining Room service bar, and remodeling at the Ahwahnee Bar. In addition, the lobby and guest arrival experience would be

modified with the removal of the built-in counter and a moveable desk for the concierge near the Sweet Shop. Mechanical changes would be made to maintain capacity and allow for air conditioning in ground floor public spaces and to the hotel and cottage guestrooms. The non-historic passenger elevator would also be rehabilitated with design finishes and replacement fixtures of compatible historic character.

These actions would alter non-historic spaces, features, and materials. Rehabilitation of historic finishes at the wine bar and service bar would have a beneficial effect on the Dining Room.

### **Energy Efficiency**

Energy efficiency actions involving features related to historic fabric or actions located near historic spaces and features would include: removal of existing aluminum guestroom windows and replacement with historically compatible wood-framed, double-paned, insulated, low-e casement windows, and refurbishing historic fixtures in ground floor public areas.

In addition, HVAC units in guestrooms would be replaced. The majority of existing HVAC units are located in existing guestroom soffits, with some installed in adjacent storage rooms. New HVAC units would be installed in the same locations and would not be visible to guests. The majority of the existing walls adjacent to the HVAC units were previously altered to metal stud and gypsum board construction during installation of the existing HVAC units. Any remaining historic fabric would be preserved to the greatest extent possible. Historic registers and register openings would be reused wherever feasible.

These actions would further protect and preserve the NHL and its contributing spaces and character-defining features.

### **Landscape Actions**

The proposed actions in the landscape outside of the hotel would allow the property to be code compliant for fire safety and also bring the property further into compliance with ADA-ABA requirements. None of the actions proposed would impact the integrity of the NHL or impact its contributing spaces and character-defining features.

**Conclusion:** Although the majority of proposed actions would not impact the characteristics that make The Ahwahnee eligible for inclusion on the NRHP, or diminish its integrity, as a whole Alternative 2 would result in an adverse effect to the historic property.

The 2011 Programmatic Agreement (Appendix A) would be implemented to resolve the adverse effect. In addition, NPS historical architects and the park historic preservation officer will continue to work with the project design team and SHPO to minimize the adverse effect on the historic property during and construction planning and implementation.

Alternative 2 would result in no adverse effect to the Yosemite Valley Historic District.

### **Cumulative Impacts**

The list of past, present, and reasonably foreseeable actions that may affect the NHL and/or the Yosemite Valley Historic District is the same as under the No Action Alternative.

Cumulatively these actions, projects, and plans, when combined with Alternative 2 would result in an adverse effect on the historic property, but would not result in an adverse effect on the Yosemite Valley Historic District to which it contributes.

## Environmental Consequences of Alternative 3

### Fire/Life-Safety Compliance

#### *East Wing Egress*

The existing East Wing egress from the second floor to the ground is via a narrow, non-compliant spiral stairway at the second floor balcony. As under Alternative 1, Alternative 3 would remove the non-compliant spiral stairway and provide a new interior stairway from the second floor to the mezzanine level. Additional actions associated with the new stairway include reconfiguration of the Ahwahnee Bar and the addition of an accessible room with a balcony (see ‘Other Accessibility Actions,’ below).

Improved and compliant access would allow the historic property to be code-compliant and to better meet the needs of its original and on-going historic use. These alterations would be to non-historic additions and previously altered spaces.

#### *South Mezzanine Egress*

A second, code-compliant means of egress is required at the South Mezzanine in order to allow continued use of this public space by visitors. The three Very Significant South Mezzanine meeting rooms (Tresidder Room, Tudor Lounge, and the Colonial Room) are distinctive, and the attached east and west balconies (off of the Colonial and Tresidder Rooms, respectively) provide unique first-level views to the surrounding hotel grounds, meadow, and iconic geologic formations.

As in Alternative 2, Alternative 3 would provide code-compliant egress at the South Mezzanine with a new door through the north wall of the Tresidder Room to the exterior fire escape. The proposed new door would further alter and impact the space and the historic property. However, the proposed location represents the best overall solution to assure continued public access to these spaces while minimizing further visual effects on the building exterior in the vicinity of the non-historic fire escape. The interior door opening would be designed to be compatible with the character and finishes of the Tresidder Room. The exterior door opening would be situated in an existing niche behind a pilaster column projection at the mezzanine elevation of the existing non-historic fire escape, thereby minimizing visual effects on the significant exterior of the hotel building.

#### *Other Fire/Life-Safety Upgrades*

All of the action alternatives include the addition of a fire separation between the Dining Room and the hotel, with concealed overhead fire doors at the openings at the Dining Room entry, Kitchen door, and Diggins Suite.

As in Alternative 1, Alternative 3 would replace the elevator service side pocket door and cage, install wood blocking or fire-safing at all floor penetrations, improve fire resistance of shaft per vertical shaft protection, and improve the first floor linen room. As in Alternative 2, Alternative 3 would provide a new corridor ventilation system for guestroom corridors and would upgrade ventilation in the Elevator Machine Room by providing a permanent air conditioning unit with an exterior vent through an existing window opening.

As in Alternative 2, the proposed ventilation system for the Elevator Machine Room would involve removing the abandoned exhaust fan unit on the north-facing side of the penthouse and installing a new louver within the same, already-modified window. The venting for the preferred

cooling system would affect only previously altered openings from the penthouse; no remaining historic fabric would be altered by the new ventilation system

These actions are all considered necessary for the continued protection and preservation of the NHL.

### **Seismic Safety Recommended Practice and Structural Strengthening**

#### ***Kitchen Modifications***

As in Alternative 1, Alternative 3 would brace the Dining Room from the Kitchen side with a minimally sized mezzanine. This action would alter a character-defining volume of the Kitchen space, but structural stabilization of the wood-framed Dining Room is necessary to meet current seismic standards.

The existing floor, substrate, walls, and finishes in the Kitchen area would be altered and/or removed as necessary for structural work. The alternative would reuse as much existing equipment as feasible in the new efficient main kitchen layout, and the existing north end of the kitchen (with refrigerators and mezzanine) would be retained as much as possible. Partitions, doors, windows, slab, and finishes would be altered and/or removed in the Kitchen along the south elevation, where necessary, to accommodate the seismic activities associated with the Dining Room.

Like Alternative 1, Alternative 3 would include a partial mezzanine at the south and north of the space, and it would leave a portion of the original mezzanine space and a small area of the original double height of the Kitchen to convey its original design and configuration. These actions would retain and protect the character-defining features and materials of the Kitchen. The smaller mezzanine, that addresses seismic engineering concerns while maintaining the perception of the character-defining volume of the space, allows Alternative 3 to less aggressively respond to the need for seismic strengthening of the Dining Room and improvements to operations within the Kitchen spaces. The actions would not lead to a total modification of the Kitchen's spatial configuration and original design.

The Kitchen is an important Contributing space due to its utilitarian function and design. The space reflects the original and continued function of the historic property and represents how such utilitarian spaces were designed and used. Under Alternative 3 (as under Alternative 1) a substantial amount of original volume within the space would be retained, as would a substantial amount of original partition walls. Original features and materials would be preserved to the extent feasible within the requirements of the rehabilitation process, and in particular the seismic stabilization effort. An open area of two-story volume between the existing north mezzanine and the new brace-frame mezzanine on the south side of the Kitchen would be preserved. The integrity of the historic spaces would be retained during rehabilitation actions, including the integrity of workmanship, materials, and feeling.

#### ***Other Seismic Safety Actions***

Other seismic safety actions with the potential to affect the historic property under Alternative 3 would include the following:

- Columns at the west side of the Dining Room would be capped. The Dining Room would be braced in the east/west direction and the stone veneer on columns at the east side would be pinned. The proposed glazing would meet seismic life-safety requirements and would be installed without altering the original window frame profile.

- The exterior granite veneer at the hotel would be pinned with stainless steel pins above egress points only at the exterior of the hotel.
- Stone chimneys at the hotel would be stabilized at five locations using non-visible internal reinforcing rods with a concrete ring in the attic.
- Two-story walls at the Solarium and Great Room fireplaces would be braced to the building structure with strong backing at selected locations.
- Stone chimneys at the cottages would be reinforced with 2x blocking, clips and straps in the attic space.
- Splice plate connections at the truss would be replaced and a snowmelt/retention system would be replaced at the roof.

These seismic strengthening actions are considered necessary to protect the structure and its character-defining spaces, features, and materials are protected and continue to be preserved into the future.

### **Accessibility Compliance**

#### ***South Mezzanine Meeting Rooms***

The South Mezzanine above the Solarium space is isolated and can be accessed only by a stairway in the Solarium. The Solarium as well as the three historic meeting rooms in the South Mezzanine (Tresidder Room, Tudor Lounge, and the Colonial Room) are identified as Very Significant in the HSR (see Appendix C). Under Alternatives 2 and 3, the South Mezzanine meeting rooms would be re-opened to public use (see 'Fire/Life-Safety Compliance, South Mezzanine Egress,' above).

All action alternatives would provide a limited use/limited access elevator to access the South Mezzanine from the Solarium in order to provide ADA-compliant access to the South Mezzanine meeting rooms. Under Alternative 3 (as under Alternative 1), the elevator would be located at an existing storage closet space to the northeast of the Solarium and would also re-route the existing mezzanine stairway leading from the northwest end of the Solarium to the meeting rooms.

Installation of a limited use/limited access elevator would require modifying the beam and slab at the ground floor and installing a new structure. The proposed elevator would be concealed within the walls of the existing storage closet space. Entry doors would be installed with a compatible wood-plank design, consistent with the original historic wood closet door. Adjacent plaster finishes would be restored. The action would also rebuild the centrally located stairway along the north elevation of the Solarium within the original rise + run ratio, as permitted, and include a handrail and signage improvements. The proposed location of the elevator under Alternative 3 would result in a modification with less of a visual effect and less impact to the original configuration of the space than Alternative 2.

Actions that would impact historic fabric under Alternative 3 (and Alternative 1) would include installing new doors and elevator controls to plaster wall elevations in Very Significant areas, altering the existing stair above the landing over the fountain, removing the guardrail at the mezzanine, raising the light fixture over the stair, and installing new railings and handrails.

The intent of the area would not be impacted and the features representative of the area's original purpose, including existing spatial relationships and extant architectural features and materials (such as the dramatic fenestration along the south elevation), would be retained. However, the integrity of workmanship and design of the Solarium would be impacted.

### **Restrooms**

Alternative 3 would expand the men's restroom on the ground floor into administrative offices (Gift Shop Storage) and would expand the women's restroom on the mezzanine to increase fixture count and maintain accessibility. A unisex restroom would be provided on the ground floor adjacent to the men's restroom. The alternative is a hybrid of work proposed in Alternative 1 and new work proposed under Alternative 3, providing the most substantial accessibility and equal facilitation to public restrooms for the hotel.

The existing women's restroom is a non-historic space that is identified in the HSR as Contributing with low integrity (see Appendix C). The existing women's restroom space has undergone previous modifications. Due to the modifications this area has already sustained, Alternative 3 is considered less impactful than relocating the women's restroom (Alternative 2), as it retains the women's restroom use on the first floor of the original configuration of the hotel.

Maintaining the original and historic separation of the women's and men's restrooms, and refraining from significant change to the spatial sequence of ground floor spaces, would allow the goal of providing more restrooms to be met. In addition, introducing a single unisex restroom would not lead to a significant change in function or aesthetic of the ground floor public spaces.

### **Other Accessibility Actions**

Other accessibility issues addressed under Alternative 3 include: providing two more ADA guestrooms with a balcony at the first floor (similar to the location of the Alternative 1, but over the east Ahwahnee Bar extension rather than the north), providing automatic door operators and thresholds in a historically compatible manner at the main doors to the hotel, providing reversible ramps and hardware at selected entrances, and replacing non-compatible concierge counter with furnishing desk for accessible check-in and concierge.

The Ahwahnee Bar is not accessible for staff, and the current configuration includes non-historic additions that obscure the original design intent for use of this space as an open *Porte Cochere*. Alternative 3 is consistent with the Alternative 2 Ahwahnee Bar reconfiguration scheme, and would remove the existing service bar and kitchen on the east side of the bar space, construct a new kitchen and bar in a new projection on the east wall, and install glazing in the north wall to restore a sense of openness similar to the original design intent for this space.

The above ADA compliance actions would provide improved and compliant access for visitors throughout the NHL, allowing the historic property to be code-compliant and to better meet the needs of its original and on-going historic use.

### **Historic Rehabilitation**

As in all action alternatives, historic rehabilitation actions would rehabilitate and stabilize features of the hotel in “poor” condition (see Appendix C). Features in “fair” condition in Very Significant and Significant spaces would be preserved and rehabilitated. Rehabilitation work also includes work associated directly with other actions that would affect historic fabric or features in the hotel and cottages. All rehabilitation efforts would be *Standards*-compliant.

Proposed historic rehabilitation actions allow for the continued protection and preservation of the NHL and its contributing spaces and character-defining features at each level of condition.

### **Operational Efficiency**

See ‘Seismic Strengthening,’ above, for the impacts of proposed changes to the Kitchen.



### ***Locker Room Modifications***

Alternative 3, like Alternative 1, would provide a south Kitchen mezzanine that allows for new employee facilities (e.g., lockers, changing, breakroom, etc.) above the Kitchen.

Locker room modifications are linked to proposed actions within the Kitchen space. The locker room space is not architecturally articulated, although it is identified as a Contributing Historic Utilitarian space. The locker room modifications would occur in spaces that are essentially unmodified. This action would remove original partitions to accommodate a significant differential of nearly three feet along the floor where a proposed wheelchair lift would be added. The differential is between the area of the lift and the opposite (south) end, and there is a stair at the wall where the differential occurs.

By modifying the Kitchen to include a partial mezzanine, and correcting the differential along the floor, improved accessibility would be accommodated and operational goals can be met. In total, the configuration of the Kitchen and locker room spaces would not be substantially modified under Alternative 3.

### ***Other Operational Efficiency Actions***

Action items related to improving operational efficiency within The Ahwahnee include improvements to maintenance facilities and storage spaces as well as upgrades to electrical and mechanical systems. More extensive operational efficiency tasks include reconfiguration of the Gift Shop/Retail Storage space. Alternative 3 would also waterproof the basement, which would allow for fire safety and improved conditions in the historic structure.

### ***Visitor Experience and Visitor Services***

Visitor experience and/or visitor service actions involving features related to historic fabric or actions located near historic spaces and features would include: removal of non-historic additions and finishes, rehabilitation of historic finishes at the Dining Room service bar, and remodeling at the Ahwahnee Bar. In addition, the lobby and guest arrival experience would be altered with the removal of the built-in counter and a provision of a moveable desk for the concierge near the Sweet Shop. Mechanical changes would be made to maintain capacity and improve heating and cooling in guestrooms. The non-historic passenger elevator would also be rehabilitated with design finishes and replacement fixtures of compatible historic character.

These actions would alter non-historic spaces, features, and materials. Rehabilitation of historic finishes at the wine bar and service bar would have a beneficial effect on the Dining Room.

### ***Energy Efficiency***

Energy efficiency actions involving features related to historic fabric or actions located near historic spaces and features would include: removal of existing aluminum guestroom windows and replacement with historically compatible, wood-framed, double-paned, insulated, low-e casement windows and refurbishing historic fixtures in ground floor public areas.

In addition, HVAC units in guestrooms would be replaced. The majority of existing HVAC units are located in existing guestroom soffits, with some installed in adjacent storage rooms. New HVAC units would be installed in the same locations and would not be visible to guests. The majority of the existing walls adjacent to the HVAC units were previously altered to metal stud and gypsum board construction during installation of the existing HVAC units. Any remaining historic fabric would be preserved to the greatest extent possible. Historic registers and register openings would be reused wherever feasible.

### **Landscape Actions**

The proposed actions in the landscape outside of the hotel would allow the property to be code compliant for fire safety and also bring the property further into compliance with ADA-ABA requirements. None of the actions proposed would impact the integrity of the NHL or impact its contributing spaces and character-defining features.

**Conclusion:** Although the majority of proposed actions would not impact the characteristics that make The Ahwahnee eligible for inclusion on the NRHP, or diminish its integrity, as a whole Alternative 3 would result in an adverse effect to the historic property.

The 2011 Programmatic Agreement (Appendix A) would be implemented to resolve the adverse effect. In addition, NPS historical architects and the park historic preservation officer will continue to work with the project design team and SHPO to minimize the adverse effect on the historic property during and construction planning and implementation.

Alternative 3 would result in no adverse effect to the Yosemite Valley Historic District.

### **Cumulative Impacts**

The list of past, present, and reasonably foreseeable actions that may affect the NHL and/or the Yosemite Valley Historic District is the same as under the No Action Alternative.

Cumulatively these actions, projects, and plans, when combined with Alternative 3 would result in an adverse effect on the historic property, but would not result in an adverse effect on the Yosemite Valley Historic District to which it contributes.

## Archeological Resources

### Affected Environment

Archeological sites located within the area of potential effect include CA-MRP-52/H, CA-MRP-291/751, and CA-MRP-292/293/H. The current significance assessment of archeological sites is provided in Table 3-5.

**Table 3-5**  
**Historic Significance Status of Archeological Sites in The Ahwahnee Comprehensive Rehabilitation Plan Project Area**

Trinomial	Primary Number	National Register of Historic Places	National Historic Landmark	Yosemite Valley Historic District	The Ahwahnee Cultural Landscape
CA-MRP-52/H	P-22-000380	Contributor to the Yosemite Valley Archeological District	Unevaluated	Unevaluated	Unevaluated
CA- MRP-291/751	P-22-000605	Contributor to the Yosemite Valley Archeological District	Unevaluated	Unevaluated	Unevaluated
CA-MRP-292/293/H	P-22-000606	Contributor to the Yosemite Valley Archeological District	Unevaluated	Unevaluated	Unevaluated

#### Significance—CA-MRP-52/H

CA-MRP-52/H is a multicomponent archeological site that consists of a bedrock milling station, a light scatter of lithics, and a can dump. It was first recorded by California State University, Stanislaus (Napton and Greathouse 1974), was updated by NPS archeologists in 1986, and was reported in Kathleen Hull and Michael S. Kelly in 1995. According to the Cultural Sites Inventory Form (CSI) Field Data Sheet filled out for this site in 1995, it was recommended that the site be evaluated and that a literature search be conducted. Site data potential were recommended as moderate and extensive surface disturbances were noted. As a result, this site is considered to be potentially eligible for the National Register of Historic Places (NRHP) and is considered a contributor to the Yosemite Valley Archeological District until it has been formally evaluated.

#### Significance—CA-MRP-291/751

CA-MRP-291/751 is a prehistoric site consisting of bedrock milling stations and a lithic scatter. The site was first recorded by California State University, Stanislaus (Napton and Greathouse 1974) and was later updated by NPS archeologists during the Valley Electric Line monitoring project in 1986 (NPS 1986a). In 1992, the National Park Service updated the site documentation during the Valley Electric Rehabilitation project (NPS 1992a). Additional documentation provided by Hull et al. 1995 notes that the site should be evaluated; that it had an estimated high data potential; and that during the 1992 visit the condition of the site was fair, based on surface evidence only. According to site reports filled out in 2007, the site has been evaluated and is listed on the national register as a contributor to the Yosemite Valley Archeological District.

#### Significance—CA-MRP-292/293/H

CA-MRP-292/293/H is a multicomponent site consisting of bedrock milling stations, a midden, lithics, rock art, and subsurface historic features. The site was first recorded by California State University, Stanislaus (Napton and Greathouse 1974) and was later updated by NPS archeologists

during the Valley Electric Line monitoring project (NPS 1986b). In 1992, the National Park Service updated the site documentation during the Valley Electric Rehabilitation project (NPS 1992b). The 1992 site record indicates that previous test excavations were performed at this site by Baldrice in 1988. In 2001, the record was again updated to include an additional feature. Additional documentation provided by Hull et al. 1995 documents the 1988 archeological testing and indicates that prehistoric components of the site were evaluated for inclusion in the national register. Historic components of the site were evaluated by Nilsson, Beville, and Button in 2009 and are listed on the national register as a contributor to the Yosemite Valley Archeological District.

## Environmental Consequences - Methodology

Prehistoric and historic archeological sites and districts are considered eligible for inclusion in the National Register of Historic Places when they are 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). Prehistoric sites are usually evaluated for the national register under this latter criterion D because it is the information value contained in the spatial and temporal relationships of the artifacts, soils, features, and other constituents that is unique. Impacts on archeological resources occur when irreparable alteration of features or patterns, including destruction, diminishes the overall integrity of the data values or other resource values.

Archeological deposits might also have significance to associated American Indian peoples under other criteria; these possible aspects of significance have not been explored or evaluated. Any site treatment would involve consultation with tribal governments and representatives to ensure these other values are addressed, as stipulated in the programmatic agreement for this plan (see below).

This impact assessment assesses whether a proposed action affects the characteristics that might make a resource eligible for the National Register of Historic Places, along with other laws and regulations. The focus of this impact assessment is on the potential for new impacts on archeological resources as a result of the proposed actions. The types of actions that might affect archeological sites are ground-disturbing activities such as grading to level roads or trails, excavation for foundation work, or the addition of site drainage features. It is not possible to improve the condition of (have a beneficial impact on) an archeological resource.

If specific actions proposed might affect a given site's national register eligibility, especially under criterion D, then the protocols developed in the *Programmatic Agreement Between the National Park Service, Yosemite National Park, and the California State Historic Preservation Officer Regarding The Ahwahnee Hotel National Historic Landmark Comprehensive Rehabilitation Program* (2011 Programmatic Agreement) would be implemented.

### Assessment of Adverse Effect

Please see page 3-5 for a discussion of how impacts on historic properties, including archeological resources, are evaluated under National Historic Preservation Act section 106 implementing regulations (36 CFR 800). In keeping with these regulations, the following criteria of adverse effect are applied to affected historic properties that are listed in or are eligible for listing in the National Register of Historic Places:

- **No Historic Properties Affected:** When there are no historic properties present, or the action will have no effect on historic properties, the action is said to have no effect on historic properties.
- **No Adverse Effect:** Occurs when there will be an effect on a historic property, but the action will not alter characteristics that make the property eligible for inclusion in the National Register of Historic Places in a way that would diminish the integrity of the property.
- **Adverse Effect:** Occurs when an action will alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places, in a way that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative.

## Environmental Consequences of No Action Alternative

### Analysis

Under the No Action Alternative, there would be no actions to bring The Ahwahnee further into compliance with current fire and life-safety code, seismic standards, and accessibility standards; no work to address operational or energy efficiencies; no work to address visitor experience issues; and none of the recommended historic rehabilitation actions would be pursued. Regular monitoring of archeological resources would continue to follow NPS cultural resource management guidelines.

**Conclusion:** The No Action Alternative proposes no ground disturbance, resulting in no adverse effect on individual archeological resources or the Yosemite Valley Archeological District.

### Cumulative Impacts

In general, past development, operation, and maintenance of facilities throughout Yosemite National Park has protected and preserved the integrity of individual archeological sites and archeological districts. Current actions in the area that have been reviewed for the potential to contribute to impacts on the archeological sites and the Yosemite Valley Archeological District include the *Merced Wild and Scenic River Comprehensive Management Plan*, *Parkwide Invasive Plant Management Plan Update*, *Scenic Vista Management Plan*, *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life-Safety Improvements Project*, and *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project*.

Implementation of these current and/or reasonably foreseeable future actions would have a potential adverse effect on individual archeological sites in the project area and the Yosemite Valley Archeological District. Specific impacts depend upon the nature, location, and design of the action. Application of current site-specific avoidance, minimization, and mitigation measures would avoid the potential for adverse effects on the individual archeological sites and the Yosemite Valley Archeological District. Potential adverse effects for cumulative plans and projects would be resolved through adherence to NPS cultural resource management guidelines, implementation of the park's 1999 Programmatic Agreement and/or the 2011 Programmatic Agreement for actions within The Ahwahnee Comprehensive Rehabilitation Plan, which stipulates application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999).

## Environmental Consequences of Alternative 1

The majority of actions proposed under Alternative 1 would occur inside of The Ahwahnee hotel, cottages, and dormitory; would not entail ground disturbance; and would therefore not impact archeological resources. The following analysis addresses proposed actions that would have the potential for an adverse effect due to ground-disturbing activities.

Adverse effects would be resolved through adherence to NPS cultural resource management guidelines and implementation of the 2011 Programmatic Agreement (Appendix A), which stipulates application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project design and construction planning and implementation.

### Analysis

#### *Fire and Life-Safety*

Code-required improvements to fire truck access around the exterior of the building would require moving the access off the concrete terrace of the hotel and ground disturbance to widen and lengthen the existing hardened area (currently covered by turf) to support fire truck loads. These activities would require excavation and grading within archeological site CA-MRP-292/293/H.

Code-required improvements to fire truck access to the cottages would require widening (in places), leveling, and graveling an existing gravel service road and unmaintained service road south of the cottages; replacement of culverts at drainage crossings; construction of a new crossing over the unnamed seasonal tributary east of the cottages; and construction of a new truck turnaround. These activities, which would require grading and excavation in previously disturbed areas, would occur within archeological site CA-MRP-291/751.

Code-required improvements to waterproofing at the hotel basement would include installation of a trench drain at the basement entry. Ground disturbance would occur within archeological site CA-MRP-292/293/H.

#### *Accessibility*

ADA-compliant access to the South Mezzanine meeting rooms would be provided by installing a limited-use/limited-access elevator. This action would require excavation to modify footings. Ground disturbance associated with this action would occur within archeological site CA-MRP-292/293/H.

Improvements on the path of travel to the wedding lawn would require minor grading to level the pathway within archeological site CA-MRP-292/293/H.

#### *Operational Efficiency*

The extension of consolidated utilities to the cottage area would require the excavation and construction of a new, approximately 4- to 5-foot-deep trench for a utility corridor underneath existing pathways within archeological sites CA-MRP-291/751 and CA-MRP-292/293/H.

**Conclusion:** Under Alternative 1, actions that would cause ground disturbance, including improvements to fire department access, accessibility, operational efficiency, and site drainage, would have the potential to result in an adverse effect on archeological sites CA-MRP-292/293/H and CA-MRP-291/751, as well as the Yosemite Valley Archeological District.

Potential adverse effects would be resolved through adherence to NPS cultural resource management guidelines and implementation of the 2011 Programmatic Agreement (Appendix A), which stipulates application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project design and construction planning and implementation.

### **Cumulative Impacts**

Cumulative projects with the potential to cause an adverse effect on archeological sites in the project area would be the same under Alternative 1 as under the No Action Alternative. In conjunction with Alternative 1, there would be a cumulative potential adverse effect on archeological resources in the project area and the Yosemite Valley Archeological District.

## **Environmental Consequences of Alternative 2**

The majority of actions proposed under Alternative 2 would occur inside of the hotel, cottages, and dormitory; would not entail ground disturbance; and would therefore not impact archeological resources. The following analysis addresses proposed actions that would have the potential for an adverse effect resulting from ground-disturbing activities.

Adverse effects would be resolved through adherence to NPS cultural resource management guidelines, implementation of the 2011 Programmatic Agreement (Appendix A), and application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project construction planning and implementation.

### **Analysis**

#### ***Fire and Life-Safety***

In order to maintain public access to the South Mezzanine meeting rooms, a code-required second means of egress would be provided by adding an exterior exit from the Tresidder Room. Ground disturbance within archeological site CA-MRP-292/293/H would be required for installation of the exit.

Provision of a code-compliant means of egress at the east spiral stair would be accomplished by removing the existing stair and constructing an exterior staircase from the second floor to the ground level. Ground disturbance within archeological site CA-MRP-292/293/H would be required for installation of the new staircase.

Code-required improvements to fire truck access around the exterior of the building would require moving the access off the concrete terrace of the hotel and ground disturbance to widen and lengthen the existing hardened area (currently covered by turf) to support fire truck loads. These activities would require excavation and grading within archeological site CA-MRP-292/293/H.

Code-required improvements to fire truck access to the cottages would require widening (in places), leveling, and graveling an existing gravel service road and unmaintained service road south of the cottages; replacement of culverts at drainage crossings; construction of a new bridge over the unnamed seasonal tributary east of the cottages; and construction of a new truck turnaround. These activities, which would require extensive grading and excavation in previously disturbed areas, would occur within archeological site CA-MRP-291/751.

Code-required improvements to waterproofing at the hotel basement would include installation of a trench drain at the basement entry. Ground disturbance would occur within archeological site CA-MRP-292/293/H.

### ***Seismic Strengthening***

Reinforcement of the South Wing would require new footings installed below grade to support the proposed shear walls. Installation of shear walls would cause ground disturbance within archeological site CA-MRP-292/293/H.

Bracing the Dining Room from the Kitchen side would involve installing new footings to support columns in the crawlspace below the Kitchen. Excavation and installation of the footings would cause ground disturbance within archeological site CA-MRP-292/293/H.

### ***Accessibility***

ADA-compliant access to the South Mezzanine meeting rooms would be provided by installing a limited-use/limited-access elevator. This action would require excavation to modify footings. The ground disturbance associated with this action would occur within archeological site CA-MRP-292/293/H.

Improvements on the path of travel to the wedding lawn would require minor grading to level the pathway, which would occur within archaeological site CA-MRP-292/293/H.

### ***Operational Efficiency***

The extension of consolidated utilities to the cottage area would require the excavation and construction of a new, approximately 4- to 5-foot-deep trench for a utility corridor underneath existing pathways. These activities would occur within archeological sites CA-MRP-291/751 and CA-MRP-292/293/H.

### ***Energy Efficiency***

Alternative 2 proposes two different options for using geothermal technology to help supplement heating and cooling. In the first option, shallow geothermal tubes for preheating/cooling would be installed either below asphalt paths to cottages or below wooden walkways at the Entry Gallery and Porte Cochere. The tubing would be placed within existing utility corridors, thus installation of shallow geothermal tubes are not expected to impact archeological resources.

The other option under this action would be to use geothermal directional bore holes in the ground. The bore holes would be 6 to 8 inches in diameter and extend to a depth of greater than 40 feet. The locations of the holes would be determined pending further study. Depending on the location of the bore holes, the project could occur within archeological site(s) CA-MRP-52/H, CA-MRP-291/751, and/or CA-MRP-292/293/H.

**Conclusion:** Under Alternative 2, actions that would cause ground disturbance, including improvements to egress, fire department access, seismic strengthening, accessibility, operational efficiency, site drainage, and energy efficiency, would have the potential to result in an adverse effect on archeological sites CA-MRP-52/H, CA-MRP-292/293/H, and CA-MRP-291/751, as well as the Yosemite Valley Archeological District.

Potential adverse effects would be resolved through adherence to NPS cultural resource management guidelines and implementation of the 2011 Programmatic Agreement (Appendix A), which stipulates application of the *Archeological Synthesis and Research Design* (Hull and Moratto



1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project design and construction planning and implementation.

### **Cumulative Impacts**

The cumulative impact of Alternative 2 would be the same as under Alternative 1.

### **Environmental Consequences of Alternative 3 (Preferred Alternative)**

The majority of actions proposed under Alternative 3 would occur inside of the hotel, cottages, and dormitory; would not entail ground disturbance; and would therefore not affect archeological resources. The following analysis addresses proposed actions that would have the potential for an adverse effect due to ground-disturbing activities.

Adverse effects would be resolved through adherence to NPS cultural resource management guidelines, implementation of the 2011 Programmatic Agreement (Appendix A), and application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project construction planning and implementation.

### **Analysis**

#### ***Fire and Life-Safety***

In order to maintain public access to the South Mezzanine meeting rooms, a code-required second means of egress would be provided by adding an exterior exit from the Tresidder Room. Ground disturbance within archeological site CA-MRP-292/293/H would be required for installation of the exit.

Code-required improvements to fire truck access around the exterior of the building would require moving the access off the concrete terrace of the hotel and ground disturbance to widen and lengthen the existing hardened area (currently covered by turf) to support fire truck loads. These activities would require excavation and grading within archeological site CA-MRP-292/293/H.

Code-required improvements to fire truck access to the cottages would require widening (in places), leveling, and graveling an existing gravel service road and unmaintained service road south of the cottages; replacement of culverts at drainage crossings; construction of a new crossing over the unnamed seasonal tributary east of the cottages; and construction of a new truck turnaround. These activities, which would require grading and excavation in previously disturbed areas, would occur within archeological site CA-MRP-291/751.

Code-required improvements to waterproofing at the hotel basement would include installation of a trench drain at the basement entry. Ground disturbance would occur within archeological site CA-MRP-292/293/H.

#### ***Seismic Strengthening***

Reinforcement of the South Wing would require new footings installed below grade to support the proposed shear walls. Installation of shear walls would occur within archeological site CA-MRP-292/293/H.

Bracing the Dining Room from the Kitchen side would involve installing new footings to support columns in the crawlspace below the Kitchen. Excavation and installation of the footings would cause ground disturbance within archeological site CA-MRP-292/293/H.

**Accessibility**

ADA-compliant access to the South Mezzanine meeting rooms would be provided by installing a limited-use/limited-access elevator. This action would require excavation to modify footings. The ground disturbance associated with this action would occur within archeological site CA-MRP-292/293/H.

Improvements on the path of travel to the wedding lawn would require minor grading to level the pathway, within archeological site CA-MRP-292/293/H.

**Operational Efficiency**

The extension of consolidated utilities to the cottage area would require the excavation and construction of a new, approximately 4- to 5-foot-deep trench for a utility corridor underneath existing pathways. These activities would occur within archeological sites CA-MRP-291/751 and CA-MRP-292/293/H.

**Conclusion:** Under Alternative 3, actions that would cause ground disturbance, including improvements to fire department access, seismic strengthening, accessibility, operational efficiency, and site drainage, would have the potential to result in an adverse effect on archeological sites CA-MRP-292/293/H and CA-MRP-291/751, as well as the Yosemite Valley Archeological District.

Potential adverse effects would be resolved through adherence to NPS cultural resource management guidelines and implementation of the 2011 Programmatic Agreement (Appendix A), which stipulates application of the *Archeological Synthesis and Research Design* (Hull and Moratto 1999). In addition, an NPS archeologist and the park historic preservation officer would be consulted throughout project design and construction planning and implementation.

**Cumulative Impacts**

The cumulative impact of Alternative 3 would be the same as under Alternative 1.

**American Indian Traditional Cultural Resources****Affected Environment**

The project area contains resources of prehistoric, historic, and contemporary significance to American Indian tribes and groups. The ancient American Indian village of Wis-kah-lah, first documented by Stephen Powers in the 1870s (Powers, published 1977), was located at the base of Royal Arches. The former village site is thought to lie partially within the area of potential effect for this project. At the time, it was the farthest east settlement in Yosemite Valley. Later, the village was recorded as a large summer camp a little west of the Royal Arches, partially overlain in its western portion by the stables complex known as Kenneyville (Merriam 1917).

As noted above under ‘Archeological Resources’ and in Table 3-5, three American Indian archeological sites on The Ahwahnee grounds have been recorded in the area of potential effect: CA-MRP-52/H, CA-MRP-292/293/H, and CA-MRP-291/751. These sites most likely include the surviving remains of the village of Wis-kah-lah. Various archeological studies have been conducted that indicate use of the site for approximately 7,000 years, with intensive use in late prehistory (the period of time just prior to Euro-American contact in Yosemite) (Nilsson et al. 2009). There is evidence that Wis-kah-lah was occupied until the mid-nineteenth century (Bunnell published 1990).

Historic-era construction at the site of Wis-kah-lah included Kenneyville, a stables complex of 17 wood-frame structures, in 1886 (Pavlik 1986). Prior to the construction of Kenneyville, James C. Lamon's homestead (1869-1875) and the Royal Arch farm and the Harris Campground (1876-1888) occupied the site (Greene 1987). Kenneyville was displaced by The Ahwahnee hotel in 1926.

Ethnographer John Hudson was told by American Indian informants that there was a great battle at the base of Royal Arches, and he recorded in his field journal that "the Yosemite" were nearly exterminated by the eastern people, the Paiute (Hudson 1901). The date of the battle is not known, but the battle took place within living memory of Hudson's informants.

Vegetation in the project area is a landscaped mixture of native and ornamental species. A number of native plants were brought to the site as ornamental plantings (e.g., sequoias and California black oaks), and some non-native plants (e.g., European grasses) have been added to the grounds close to the structure. Himalayan blackberry, one of the most threatening invasive plants in Yosemite (NPS 2008b), has begun to encroach on some of the land, and native ponderosa pines appear to be encroaching as well.

American Indians gather native plants throughout Yosemite Valley; boundaries for gathering may change from year to year, depending upon the plant species, the weather, or other factors (Deur 2006). Gathering is not likely to occur at the landscaped grounds immediately adjacent to The Ahwahnee hotel. Examples of native species that may be gathered near the project area include basket grass (*Muhlenbergia rigens*), which is tended and gathered at Ahwahnee Meadow (Deur 2006). California black oak acorns (*Quercus kelloggii*) are the preferred and prized food nuts of American Indians who continue to gather acorns where they are available (Ortiz 1996). There are California black oaks in the project area. Medicinal plants and fungi may also be gathered in the vicinity when available (Bibby 1994). The specific species and locations of medicinal plants and fungi gathered are not normally disclosed by American Indians.

### ***Consultation with American Indian Tribes and Groups***

It is part of the National Park Service mission to facilitate the preservation and continuation of traditional cultural practices in Yosemite; park managers work to accommodate traditional cultural practices in accordance with the NPS mission and management policies. Consultation is a key component of the National Park Service's strategy to preserve and protect culturally significant resources that are central to traditional cultural practices.

The park consults with seven culturally associated American Indian tribes and groups on a regular basis. These are the American Indian Council of Mariposa County (also known as the Southern Sierra Miwuk Nation), Bishop Paiute Tribe, Bridgeport Paiute Indian Colony, Mono Lake Kutzadikaa Tribe, North Fork Rancheria of Mono Indians, Picayune Rancheria of the Chukchansi Indians, and the Tuolumne Band of Me Wuk Indians. For more information on American Indian consultation for this project, please see Chapter 4, Consultation and Coordination.

## **Environmental Consequences - Methodology**

Potential impacts on traditional resources in the project area were analyzed qualitatively, based on current understanding of values and significant elements, and proposed modifications that could potentially alter character-defining features. Actions proposed were also assessed for the potential effect they might have on American Indian values at archeological sites.

Like other cultural resources, American Indian traditional resources might be eligible for the National Register of Historic Places when they are associated with significant events that have made a contribution to their history (criterion A); when they are associated with the lives of persons significant in the past, who may include important people in stories (criterion B); when they embody distinctive design characteristics (criterion C); or when they have contributed or have the potential to contribute information about the past (criterion D). Adverse impacts on American Indian traditional resources may include damage, alteration, destruction, isolation, neglect, deterioration, and other factors that might adversely affect the site's ability to convey the characteristics for which it was determined eligible to the national register. Traditional resources and practices might also be affected if the ability to access or use a particular place affects the way in which culturally associated American Indians connect to the resource. Such effects can include visual and aural intrusions as well as physical alterations.

Some of the places important to American Indians at The Ahwahnee are also prehistoric archeological sites, which are more fully described under 'Archeological Resources' above. The values ascribed to these resources by American Indian people might extend beyond scientific value (criterion D). American Indian connections to geographic locations may be strengthened by the presence of archeological remains left by their ancestors.

The National Park Service will facilitate the preservation and continuation of American Indian traditional resources and practices in consultation with culturally associated tribes and groups, and would implement measures in the 2011 Programmatic Agreement prepared for this project (Appendix A).

## Environmental Consequences of the No Action Alternative

### Analysis

The No Action Alternative would not result in any additional impacts on traditional cultural resources or practices.

**Conclusion:** There would be no new impacts on American Indian traditional resources and practices under the No Action Alternative.

### Cumulative Impacts

There are a number of past projects and activities that have contributed to impacts on traditional resources important to American Indians and the continuation of traditional cultural practices. Historic-era activities, such as construction of the Lamon homestead and the stables at Kenneyville, included ground-disturbing actions and other effects on the American Indian village of Wis-kah-lah, including the displacement of the American Indian people themselves. The construction of The Ahwahnee hotel further impacted the footprint of the American Indian village. Subsequent projects related to infrastructure (e.g. roads, water, and sewer), use of the hotel and grounds by the U.S. Navy during World War II, employee housing, landscaping, and more actions have resulted in additional ground disturbance at the site.

The current and/or foreseeable actions listed in Appendix D would have the potential to affect the village site and the values held by American Indians for this ancestral place. Some of the undertakings, such as the *Merced Wild and Scenic River Comprehensive Management Plan*, are in process and it is not currently clear what, if any, effect they would have on the traditional cultural resources or practices at The Ahwahnee. There is the potential for ground disturbance of archeological deposits and removal of native vegetation, resulting in a potential adverse effect on

American Indian traditional resources and practices, as part of the *Scenic Vista Management Plan*, *2009 Fire Management Plan*, *East Yosemite Valley Utilities Improvement Plan*, *The Ahwahnee Fire and Life-Safety Improvements Project*, and *The Ahwahnee Hotel Improve Porte Cochere Access Walkways and Fence Project*.

Beneficial impacts on native plant communities of value to American Indians might result from the implementation of *Parkwide Invasive Plant Management Plan Update*.

It is anticipated that adverse impacts resulting from cumulative projects would be resolved through adherence to NPS cultural resource management guidelines and application of the 2011 Programmatic Agreement regarding rehabilitation projects at The Ahwahnee or the parkwide 1999 Programmatic Agreement for projects that are not part of The Ahwahnee Comprehensive Rehabilitation Plan (e.g., the *Scenic Vista Management Plan*).

## Environmental Consequences of Alternatives 1, 2, and 3

The majority of actions proposed for the comprehensive rehabilitation of The Ahwahnee would occur within building footprints and would not affect American Indian traditional cultural resources. The proposed actions in the landscape at The Ahwahnee (outside of the hotel, cottages, and dormitory buildings) that might affect American Indian values would be the same with all action alternatives. Therefore, they are analyzed together.

### Analysis

Removal of select native vegetation (incense cedars and herbaceous plants) as part of fire access road improvements and construction of a utility corridor might affect native plants of value to American Indians.

Impacts on values that make the archeological sites in the project area important to American Indians (including the remains of Wis-kah-lah and possibly the Royal Arches battle site) could include ground-disturbing activities for the code-required improvements to the fire department access road, including installation of new drainage crossings; installation of a new utility corridor beneath the pathways to the cottages; and excavation to place new footings for seismic strengthening at the hotel. There are three archeological sites within the project area of potential effect that are recorded as separate sites. It is possible that subsurface investigations might reveal a continuous archeological deposit that may extend between and beyond the currently documented site boundaries. Furthermore, the archeological site boundaries are not always synonymous with the extent of an American Indian traditional cultural resource. Ongoing consultation and cultural monitoring, as provided for in the 2011 Programmatic Agreement for actions covered in this planning effort, would identify the potential for additional impacts and address mitigation of their effects.

In accordance with the 2011 Programmatic Agreement (Appendix A), American Indian representatives from culturally associated tribes and groups would be provided an opportunity to participate in activities, including archeological investigations and construction monitoring, for the protection of resources to which they attach cultural, spiritual, and traditional significance that might be affected by project implementation.

**Conclusion:** Traditional cultural resources of value to American Indians might be affected by construction, removal of select native vegetation, and alteration of archeological constituents. The park would continue consultation with culturally associated tribes and groups during project

planning and implementation, and would implement the 2011 Programmatic Agreement in order to protect resources to which American Indian tribes and groups attach cultural values.

### **Cumulative Impacts**

The cumulative impacts of Alternatives 1, 2, and 3 in conjunction with the past, present, and/or reasonably foreseeable projects (listed under the No Action Alternative) might result in an adverse effect on resources of value to American Indians. It is anticipated that adverse effects would be resolved by application of the 2011 Programmatic Agreement regarding rehabilitation projects at The Ahwahnee hotel or the parkwide 1999 Programmatic Agreement for projects that are not part of The Ahwahnee Comprehensive Rehabilitation Plan (e.g., the *Scenic Vista Management Plan*).