



# United States Department of the Interior

## NATIONAL PARK SERVICE

Yosemite National Park  
P. O. Box 577  
Yosemite, California 95389

IN REPLY REFER TO:

H3015 (YOSE-PM)

**JUN 26 2018**

Dear Friends of Yosemite National Park:

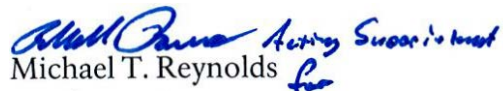
We are pleased to announce the availability of a finding of no significant impact for the *Bridalveil Fall Rehabilitation Project*. After consideration of the environmental assessment; public, tribal, and agency comments; and the *2006 National Park Service Management Policies*, the finding concludes that the project will not significantly affect the quality of the human environment. Preparation of an environmental impact statement is not required. This project will:

- Replace the existing vault toilets (4) with a new comfort station (14 stalls)
- Add a new accessible loop trail from the parking lot to a viewing platform
- Expand the existing viewing platform outside of the bed-and-banks of Bridalveil Creek from about 400 sq. feet to about 1,500 square feet
- Reconfigure the existing parking lot within the existing footprint to add parking spaces (and balance with removal of spaces along Southside Drive)

The finding of no significant impact is available at <http://parkplanning.nps.gov/bridalveil>. The National Park Service plans to begin implementation of the project in summer of 2018.

Thank you for your interest and comments throughout the Bridalveil Fall Rehabilitation planning process. Public participation is a vital part of the environmental review process in Yosemite National Park. Your participation helps the National Park Service understand and consider your values and concerns.

Sincerely,

  
Michael T. Reynolds  
Superintendent



# Bridalveil Fall Rehabilitation

## Finding of No Significant Impact

# **BRIDALVEIL FALL REHABILITATION FINDING OF NO SIGNIFICANT IMPACT**

**May 2018**

## **Yosemite National Park**

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to select Alternative 3 for the Rehabilitation of Bridalveil Fall in Yosemite Valley and that no significant impacts on the human environment are associated with that decision. This project tiers off the *Merced Wild and Scenic River Comprehensive Management Plan Environmental Impact Statement* (Merced River Plan) and *Record of Decision* (2014).

### **PURPOSE AND NEED**

Plunging 617 feet, Bridalveil Fall is the first grand waterfall that most visitors encounter upon entering Yosemite Valley. Visitors can park and walk a short distance to reach the base of the iconic waterfall. The purpose of the Bridalveil Fall Rehabilitation Project is to rehabilitate the visitor facilities at the base of Bridalveil Fall and surrounding area.

The project will:

- Improve visitor services at Bridalveil Fall, including restroom facilities (*Merced River Plan* pg. 8-74).
- Protect natural and cultural resources in the area.
- Reduce crowding on the trails and the viewing platform (*Merced River Plan* pg. 8-74).
- Improve safety and congestion in and around the parking lot and along Southside Drive.
- Improve interpretation and wayfinding.
- Improve accessibility for visitors (*Merced River Plan* pg. 8-74).
- Correct long-standing maintenance issues and address deferred maintenance.
- Remove selected trees to open scenic views of the fall (*Merced River Plan* pg. 8-73).

Bridalveil Fall typically flows throughout the year, promoting year-round visitation and high volumes of visitor use during spring and summer flows. Visitors to the Bridalveil Fall area encounter low-functioning vault toilets with long lines, congestion in and around the parking lot, busy trails, a crowded viewing platform, a lack of accessible path of travel to a viewing platform, and unclear wayfinding. The project considered a range of options to address these issues including replacement of the four inadequate vault toilets at the parking area with flush toilets and creating an accessible loop trail to reduce crowding.

### **SELECTED ACTION AND RANGE OF ALTERNATIVES CONSIDERED**

The *Bridalveil Fall Rehabilitation Environmental Assessment* (*Bridalveil Fall EA*), dated April 2018, described and analyzed three alternatives, including a No Action Alternative (Alternative 1) and the following two action alternatives:

- Alternative 2: Bridalveil Creek Pedestrian Bridge
- Alternative 3: Expanded Viewing Platform

These alternatives represent a range of options to satisfy the purpose of and need for the project and meet relevant legal requirements. Based on this analysis, the NPS identified Alternative 3 as the Agency's Preferred and Environmentally Preferable Alternative and selected this alternative for implementation.

### **Selected Action: Expanded Viewing Platform**

The Selected Action includes a new accessible loop trail, construction of additional viewing platforms and expansion and replacement of the existing viewing platform, reconfiguration of the existing parking lot, replacement of existing vault toilets with flush toilets, new interpretive and wayfinding signage, increased accessibility of trails, and reconfiguration of parking at Bridalveil Straight. Attachment A page 6 provides a project map. Table 1 summarizes the project components for the Selected Action. The Selected Action will implement all actions as detailed in Alternative 3 in the *Bridalveil Fall EA*. No modifications were required to the Selected Action as a result of comments received on the *Bridalveil Fall EA*.

The park plans to begin trail work in 2018. Construction to replace the comfort station, reconstruct the parking lot, connect to electrical power, provide water treatment and storage, add the lift station, and add the sewer connection is planned for 2019.

**Table 1. Summary of Selected Actions**

<b>Project Components</b>	
Parking Lot	<ul style="list-style-type: none"> <li>Reconfigure the existing parking lot footprint to add 20-24 parking spaces for a total of about 80 spaces (including four accessible spaces).</li> <li>Regrade/raise the northeast east end of the parking lot to reduce flooding.</li> <li>Construct a plaza/gathering area with wayfinding and interpretation at the southeast corner of the parking lot.</li> <li>Add right-hand and left-hand turn lanes from Wawona Road into the parking lot.</li> <li>Add bear boxes and additional animal-proof trash and recycling receptacles or dumpsters.</li> <li>Move the trailhead a short distance from the parking lot (to avoid high water) and build short boardwalks to connect the trailhead with plaza to the south and parking lot to the east.</li> <li>Delineate the historical alignment of the Carriage Road (Bridalveil Fall Trail) as it continues to the parking lot with stones or other materials to retain a visual connection to the historic landscape.</li> </ul>
Parking Lot Entrance	<ul style="list-style-type: none"> <li>Construct an additional entrance into the parking lot creating a single entry and single exit.</li> </ul>
Vault Toilets at the Parking Lot	<ul style="list-style-type: none"> <li>Replace the existing four vault toilets at the parking lot with a new comfort station with flush toilets (14 fixtures).</li> <li>Install necessary infrastructure for the flush toilets (new sewer, electrical lines, transformer, well pump, control panel, water tank, small water treatment structure, and sewer lift station).</li> <li>Connect sewer and electrical lines to the main lines in Northside Drive. This will require approximately 1 mile of trenching or directional drilling in Wawona Road/Southside Drive up to Pohono Bridge, where the line will cross as part of the bridge. One short segment will leave the road to bypass the intersection of the Wawona Road and Southside Drive. This off-road utility segment will avoid impacts to natural and cultural resources.</li> </ul>

**Table 1 (continued). Summary of Selected Actions**

Project Components	
Southside Drive at Bridalveil Straight	<ul style="list-style-type: none"> <li>• Designate parking for one shuttle bus on the south side of Bridalveil Straight.</li> <li>• Remove private vehicle parking, if necessary, to balance additional parking spaces at the Bridalveil Fall Parking Lot. It is the intent of the project to retain the current parking capacity in west Yosemite Valley as prescribed in the Merced River Plan.</li> <li>• Construct a gathering and viewing area on the south side of Southside Drive. Selectively remove conifers to enhance views of El Capitan. Install benches and interpretive/wayfinding information.</li> <li>• Formalize a trail from the gathering/viewing area to the Bridalveil Fall Trail with a hardened surface.</li> <li>• Enhance safety features in crosswalks at Bridalveil Straight.</li> <li>• Install slightly angled parking for three tour buses on the south side of road.</li> </ul>
Trails and Viewing Areas	<ul style="list-style-type: none"> <li>• Add a new accessible loop trail from the parking lot to a viewing platform. The majority of the trail will be 8 to 10 feet wide, at-grade, and hardened with an accessibility acceptable surface. Portions of the trail will be elevated to reduce impacts to sensitive areas.</li> <li>• Expand the existing viewing platform from 400 square feet to approximately 1,500 square feet. Install safety railing.</li> <li>• Repair the Bridalveil Fall Trail from the third bridge to the east, where it meets the Valley Loop Trail with a hardened surface.</li> <li>• Expand the intersection of the Bridalveil Fall Trail and trail to the existing viewing platform for interpretation and gathering.</li> <li>• Rework the existing trail from the Bridalveil Fall Trail to the viewing platform. The trail will be a minimum of 8-feet wide with stairs as needed. Rework the stairs to meet code.</li> <li>• Improve the viewing area to the northeast side of Bridge 3, adjacent to the Bridalveil Fall Trail (approximately 100 square feet in size).</li> <li>• Improve and delineate the access to the viewing area at the southwest side of Bridge 3 (760 square feet) – no blasting, rock removal, or heavy grading.</li> <li>• Add wayfinding and interpretive signage throughout the project area.</li> <li>• Remove small conifer trees (&lt;20 inches dbh) from within the dripline of selected mature California black oaks to improve oak habitat.</li> <li>• Consistent with current practices, the park will not maintain trails during the winter.</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>• All new trails and pathways will be accessible.</li> </ul>

## OTHER ALTERNATIVES CONSIDERED AND ANALYZED

### Alternative 1 (No Action)

Under the No Action Alternative, Yosemite National Park would not rehabilitate or repair visitor facilities or services at Bridalveil Fall with the exception of emergency repairs and routine periodic maintenance activities. There would be no improvements to visitor experience, scenic vistas, visitor safety, or congestion; the park would not meet accessibility standards; and the park would not correct long-standing maintenance issues. Maintenance and repair needs would likely increase with continued visitation and aging infrastructure.

### Alternative 2 (Bridalveil Creek Pedestrian Bridge)

Alternative 2 includes several actions common to the Selected Action including a new accessible loop trail, reconfiguration of the existing parking lot, replacement of existing vault toilets with flush toilets at the parking area, new interpretive and wayfinding signage, increased accessibility of trails, and reconfiguration of parking at Bridalveil Straight. Additional actions under Alternative 2 include the construction of a new bridge across Bridalveil Creek from the existing viewing platform to a new trail on the east side of Bridalveil Creek, and the construction of a comfort station at Bridalveil Straight. Under Alternative 2, the parking lot entrance would include a new combined entrance and the exit

road to the parking lot would replace the existing entrance/exit road approximately 150 feet south of the existing entrance/exit road. In addition, tour bus parking at Bridalveil Straight would be in a parallel configuration.

### Preliminary Options Considered and Dismissed

The NPS considered a range of actions when developing the alternatives for the rehabilitation of Bridalveil Fall. Table 2 lists the actions that the planning team analyzed, considered, and dismissed because they did not fully satisfy the objectives of this planning effort.

**Table 2. Alternatives Considered but Dismissed**

Action	Reasons for Dismissal
Allow buses to unload passengers at the parking lot and pick up passengers at Bridalveil Straight.	There would be no guarantee that bus parking would be available at Bridalveil Straight for passenger pick-up. Buses waiting for parking could create additional congestion and confusion along Bridalveil Straight.
Add or move vault toilets to Bridalveil Straight.	Vault toilets require consistent pumping by staff with specialized training. The park does not have the operational capacity to add another vault toilet considering the intensive maintenance required to maintain vault toilets. The <i>Bridalveil Fall EA</i> considers adding new flush toilets, but not vault toilets, at Bridalveil Straight under Alternative 2.
Construct a leach field in the historic sewer plant location north of Bridalveil Fall, adjacent to the Merced River near its confluence with Bridalveil Creek. This new leach field could serve the new flush toilet at the parking lot and remove the need to construct lengthy sewer and power lines to connect to the existing system.	<p>This option is inconsistent with the 2014 <i>Merced River Plan</i>, which calls for removal of the remains of the abandoned plant and restoration to natural conditions. The park abandoned and demolished the historic sewer plant in 1975 when the park constructed a new tertiary sewage treatment plant in El Portal.</p> <p>The park must protect and enhance the water quality of the Wild and Scenic Merced River. Construction of a new leach field in this area would likely require the park to amend the <i>Merced River Plan</i>. It is uncertain whether the park could obtain permits under the Clean Water Act to construct a leach field in close proximity to the Merced River.</p> <p>A new leach field would require the park to connect to a power source and construct additional infrastructure.</p>
Construct a new trail and viewing platform from the Bridalveil Fall Trail near Bridge #3 toward the base of Bridalveil Fall.	The trail would be constructed within the bed-and-banks of Bridalveil Creek stream system. It would be subjected to high water velocities and high water depths during peak flows, creating the need for additional repair, maintenance, and debris clearing. The trail would be constructed into a relatively pristine area, with associated impacts to the natural habitat. The existing viewing platform would be visible from the new platform and hikers may hike cross-country from one to the other, creating new social trails in a relatively pristine area.
Remove the ability to make left hand turns out of the parking lot to decrease congestion.	Vehicles heading south toward Wawona/Oakhurst on the Wawona Road (left turn out of the parking lot) would need to travel north to Southside Drive, east on Southside Drive to the El Capitan Crossover, and then west on Northside Drive and back across Pohono Bridge. This is a considerable distance which could take a great deal of time during high levels of visitation. The action could promote illegal U-turns on Wawona Road.

**Table 2 (continued). Alternatives Considered but Dismissed**

Action	Reasons for Dismissal
Move all parking to the right side of Bridalveil Straight and enhance views of El Capitan from the south side of the road. This would encourage visitors to stay on the south side of the road and improve safety in the area.	The vast majority of visitors stop along Bridalveil Straight for the breathtaking views of El Capitan (on the left side of the road). Visitors stop for a number of other reasons including stretching their legs, checking maps, picnic lunches, river access. Retaining parking on the right side of the road may encourage some users to stay on the right side and not cross the street, but a substantial amount of visitors would be expected to cross the street.
Construct the proposed new loop trail from the parking lot to the viewing platform completely on-grade, without elevated portions of the trail. This design may be more compatible with other trails in the Yosemite Valley Historic District.	There is a 60-foot rise in elevation from the parking lot to the viewing platform. While it is possible to construct an accessible trail completely on grade using causeways to accommodate the rise of the trail, it would require extensive ground disturbance in sensitive areas to construct the causeways. Causeways would also restrict and confine natural wetland water flows in the lot, requiring flows to move through culverts in the causeways.
Significantly improve the Valley Loop Trail near Bridalveil Creek, on the north side of Southside Drive. Improvements to the trail in this area will allow year-round use rather than seasonal use during low-flow periods.	Improving the Valley Loop Trail near Bridalveil Creek has been a long-term goal of the park. Improvements would require the construction of several new bridges and extensive design with hydraulic modeling. The park intends to address this need as a separate project when additional funding and resources are available.
Require reservations for bus parking at Bridalveil Straight to help manage bus parking.	Both action alternatives accommodate parking for three tour buses and one shuttle bus at Bridalveil Straight. The park expects to enact tour bus reservations in other park locations in the future (see Cumulative Actions Appendix C of the <i>Bridalveil Fall EA</i> ). If needed, the park could expand bus reservations to the Bridalveil Fall area at a later date, after the park implements the Bridalveil Fall project and evaluates the effectiveness of designated bus parking at Bridalveil Straight.

## DECISION RATIONALE

The Selected Action best meets the purpose and need of the project while minimizing impacts to visual, operational, natural and cultural resources. It improves the visitor experience by providing a new accessible trail, adding ample flush toilets, and protecting the safety of visitors. At the parking lot it improves safety by reconfiguring the parking lot and adding gathering plazas outside the flow of traffic. Along Southside Drive, passengers will exit buses outside the lane of traffic and crosswalk safety will be improved. The Selected Action minimizes future maintenance and scenic issues in relation to Alternative 2, which would have constructed a bridge across Bridalveil Creek and an additional comfort station on Southside Drive. There will be no adverse effects on historic properties. The Selected Action will result in the greatest benefit to the visitor experience while minimizing impacts to park operations, protecting natural and cultural resources, and enhancing public safety.

## WHY THE SELECTED ACTION WILL NOT RESULT IN SIGNIFICANT EFFECTS

In considering the criteria for significant impact as defined by CEQ regulation 40 CFR 1508.27, the park determined that the Selected Action will not have a significant effect on the human environment. The “human environment,” as defined in Section 1508.14, includes the natural and physical environment and the relationship of people with that environment. Specifically, there are no highly uncertain or controversial impacts, unique or unknown risks, elements of precedence, or cumulatively significant effects identified. Implementation of the Selected Action will not result in

the loss or destruction of significant scientific, cultural, or historic resources and implementation of the Selected Action will not violate any federal, state, or local laws. The park determined that none of the significance criteria are triggered under the Selected Action:

- The Selected Action will benefit both the quality of visitors' experience and the public's safety and ability to manage their own risk. Impacts to the natural or physical environment and impacts to the relationship of people with that environment will not be significant.
- No highly uncertain or controversial impacts or elements of precedence have been identified.
- Implementation of the Selected Action will not violate federal, state, or local laws.
- Special-status species will not likely be adversely affected.
- There will be no adverse effects to historic properties.
- The Selected Action was evaluated in context with other ongoing and proposed management actions, and no adverse cumulative impacts are expected. Some of these other management actions include the *Merced Wild and Scenic Comprehensive River Management Plan*, the *Scenic Vista Management Plan*, and the *Wawona Road Rehabilitation*.
- The NPS will reduce potential effects on public health and safety through decreasing the grade of trails, the addition of safety rails, and the reconfiguration of parking lot and Bridalveil Straight parking.

Based on the following summary of effects, and as discussed in the *Bridalveil Fall EA*, the park has determined that the Selected Action (Alternative 3) will not have a significant effect on the human environment.

### **Hydrology, Floodplains, and Water Quality**

The Selected Action will result in long-term beneficial impacts to hydrology, floodplains, and water quality. Under the Selected Action, actions within the floodplain include raising and improving the parking lot and trail development, resulting in approximately 1.38 acres of new impervious surface. The park will raise the parking lot will above flood levels and water flows will be directed around the parking lot, improving water quality and hydrologic function.

Under the Selected Action, a small portion of the existing platform extends into the bed and banks of Bridalveil Creek. Flows do not reach the platform at low flows. During moderate and high flows, the platform will not substantially impact flows more than the existing boulders and trees in the very rough alluvial fan environment. Implementation of the Selected Action will produce long-term beneficial impacts to water quality as a result of reduced visitor impacts (i.e., bank and vegetation trampling), restored and revegetated areas and wetlands, and improved drainage systems. Trail improvements will include bridges and boardwalks to provide visitor access over creeks, waterways, and wetlands.

See Attachment A for the Floodplain Statement of Findings, which analyses the Selected Action in terms of the risks to human health, safety, and property; comparative flood risk among the alternatives; and effects on floodplain values. See Attachment B for the Wild and Scenic Rivers Act Section 7 Determination, a rigorous and consistent evaluation to protect the free-flowing condition of the Merced River.

### **Wildlife**

Under the Selected Action, local, short-term adverse impacts on wildlife will occur due to noise, increased human presence, and heavy equipment use during construction activities. Scheduling construction to largely avoid the bird breeding and nesting season, conducting pre-construction surveys for wildlife, and avoiding construction activities at night will reduce impacts on birds, bats,

and other wildlife. If night lighting is necessary, the park will design the lighting to be minimal, directed downward, and shielded. Under the Selected Action, placement of additional trash cans, bear boxes, and restrooms will reduce the human impact on adjacent wildlife habitat.

Implementation of standard mitigation measures (Attachment C) and avoidance procedures will reduce the potential for disturbance and harm to wildlife. Therefore, adverse impacts to wildlife under the Selected Action will be reduced.

### **Special Status Species**

Under the Selected Action, effects on the California red-legged frog will be discountable or insignificant, and not likely to adversely affect the population. Construction-related impacts to the Mount Lyell salamander (California Department of Fish and Wildlife Watch List) will largely be avoided and will not affect the relative abundance of the local population.

### **Vegetation**

The park will add a total of 1.38 acres of new impervious surface under the Selected Action, which will entail a direct loss of lower montane broadleaf, coniferous forest, and riparian vegetation. In addition, the park will selectively remove individual trees to improve vistas and remove immature conifer trees located within the driplines of California black oaks to enhance the health of the mature oaks. Trees removed will not be of special status. Trees removed will represent a small fraction of the numbers of trees in lower montane broadleaf, coniferous forest, and riparian communities in the project area. These communities will remain well represented in the project area.

Construction activities could inadvertently damage vegetation and compact soils. Impact duration will be short and vegetation is expected to recover after construction activities. Adherence to mitigation measures, including fencing and consultation with the park specialists, will minimize potential impacts on trees, roots, and understory vegetation. Under the Selected Action, the park expects the additional loop trail to reduce use of informal trails that damage vegetation and compact soils.

Indirect effects of construction activities and continued visitor use of the Bridalveil Fall area have the potential to establish and spread non-native plants. Implementation of standard mitigation measures including construction vehicle inspections will reduce the potential for non-native plant dispersal. Potential impacts to vegetation under the Selected Action will be adverse in the short-term and beneficial in the long-term.

### **Wetlands**

Under the Selected Action, the park will raise pedestrian paths over wetland areas toward the existing viewing platform to avoid wetlands, but there could be minor wetland impacts from installation of piers to support the paths (less than 0.10 acre). The viewing areas to the southwest and northeast of Bridge 3 will be improved within an Ephemeral Other Waters of the United States (U.S.). Imported material to improve the site will be pervious material. There will be no impacts to existing hydrophytic vegetation or hydrologic flows.

The park will design and construct the pedestrian pathways with elevated portions over wetlands to avoid permanent impacts to wetlands and the hydrological processes that sustain wetlands. Trampling, increased sedimentation, and other temporary impacts to wetlands may occur during construction. Adherence to mitigation measures that specify conditions for work in streambeds, including erosion control, fencing, and avoidance of aquatic habitats will minimize these construction-related impacts. Additionally, under the Selected Action, it is expected that the new accessible trail will reduce informal trail use and impart long-term beneficial impacts on wetlands.

## **Scenic Resources**

Under the Selected Action, short-term adverse impacts on scenic resources within the project area will occur during construction due to ground disturbance, intrusive light, presence of construction equipment and vehicles, and presence of personnel. Construction within the project area will impact both scenic views of El Capitan and Bridalveil Fall. These impacts will be localized and end once the construction is complete.

Long-term impacts to scenic resources under the Selected Action will occur as a result of expansion of the viewing platform, which will impact views at ground level from the existing trail to the viewing platform, but will not silhouette or block views of the fall. There will be long-term beneficial impacts to scenic resources within the project area as a result of selective tree thinning to enhance existing views and open up additional viewing areas within the project area. Additional long-term beneficial impacts to scenic resources within the project area will occur due to the construction of new visitor gathering and viewing areas. The design features of the proposed improvements and facilities will be compatible with the Yosemite Design Guidelines, the setting and character of the area, and will not result in reduced scenic quality.

## **Soils and Geology**

Under the Selected Action, approximately 3.75 acres of surface and near-surface soils will potentially be disturbed as part of the construction activities, and there will be an increase of approximately 1.38 acres of impervious surfaces. Construction-related impacts from the use of equipment and worker foot traffic within the project area will cause local soil compaction, soil erosion, soil contamination, and displacement of soil and boulders. Best management practices and mitigation measures will minimize impacts and risks.

The construction of new trails and viewing areas will cause local, short-term adverse impacts of soil erosion, soil compaction, and displacement of soil and boulders. However, the new accessible trail is intended to reduce informal trailing in natural areas, which will be beneficial in the long-term by decreasing soil erosion and compaction. The project will avoid or minimize impacts to soils to the extent possible. While some construction-related adverse effects to soil resources will occur, the project will preserve and protect soils and geologic resources.

## **Visitor Experience and Recreation**

The rehabilitation of Bridalveil Fall under the Selected Action will have a local, short-term adverse impact on visitor experience during the construction period due to noise from the construction, increased traffic from construction personnel, and limited access to areas under construction. Construction will avoid the peak season to the extent possible.

Under the Selected Action, there will be a long-term beneficial impact to visitor experience. Visitor services, including restroom facilities, will be improved; crowding on the trails and the viewing platforms will be reduced with the addition of more trails and viewing platforms; congestion at the parking lot and along Southside Drive will be improved through the reconfiguration of the parking lot and dedicated tour bus parking; and interpretation, wayfinding, and accessibility will be improved.

Safety will be enhanced by decreasing the grade of trails, bus parking will be moved to the south side of Southside Road and travelers will exit buses to a loading/unloading sidewalk instead of the traffic lane. The park will add safety features to crosswalks including advance warnings in front of the crosswalks, and a pedestrian path on the south road shoulder along Bridalveil Straight.

### **Park Operations and Facilities**

Under the Selected Action, additional staff time will be required during construction for contract management, trail construction, visitor and resource protection, communication, and management of construction crews. Operations within the Bridalveil Fall area will be temporarily affected by construction activities, including closure of parking areas, trail routes, and road closures.

Under the Selected Action, beneficial impacts will result from the elimination of time and effort required to pump the existing vault toilet at the parking lot. The park's current sewage treatment plant will have the capacity to handle the additional sewage generated from the proposed flush toilets. Re-paving trails and the parking lot, and raising the parking lot above flood level will reduce the need for ongoing repairs. The addition of safety railings at the current viewing area as well as the reduced grade of the trails has the potential to decrease search and rescue operations.

There will be additional staff time required to maintain additional trails, flush toilets, and the elevated pathways and boardwalks. There will be more upkeep and higher skilled labor needed for maintenance of power, pumps, and water tanks associated with the new comfort stations. Although traffic management needs may decrease due to the additional entrance to the parking area and the addition of the right-hand and left-hand turning lanes, traffic management will continue to be necessary during peak visitation.

### **Historic Resources—Built Environment**

There are ten contributing resources to the Yosemite Valley Historic District (2006) within the Area of Potential Effects: Pohono Bridge, the Bridalveil Fall Access Road, Bridalveil Fall Trail, Bridalveil Fall Bridges 1-3, Valley Loop Trail, Southside Drive, and two historic views. Pohono Bridge is also a contributing resource to the Yosemite Valley Bridges historic district (1977). With mitigation and avoidance measures in place, the Selected Action will result in no adverse effects on the Yosemite Valley historic district or the Yosemite Valley Bridges historic district. The Selected Action will not directly or indirectly alter any of the qualifying characteristics of the contributing historic, cultural, or archeological resources in the area of potential effects in a manner that will diminish their integrity of location, design, setting, materials, workmanship, feeling, or association either individually or of the historic and archeological districts as a whole.

### **Archeological Resources**

Seven archeological sites within the Yosemite Valley Archeological District (1976) are within the Area of Potential Effects, and one additional historic site is potentially eligible. The Selected Action will result in no adverse effects on the Yosemite Valley Archeological District or ethnographic resources, with mitigation and avoidance measures in place. The Selected Action will not affect the use of archeological resources in the park to provide information on human demographics, paleoenvironmental change, cultural chronology, prehistoric economic systems, settlement patterns, sociocultural change, or western hemisphere obsidian studies

### **Historic Properties with Religious and Cultural Significance**

On May 5, 2017, the park requested tribal participation in the Bridalveil Fall Rehabilitation Project and formally requested identification of historic properties with religious and cultural significance that might be affected by the project. The park and tribes met to discuss the project on June 8, 2017, and conducted a site visit on August 1, 2017. The NPS considered comments received from traditionally associated American Indian tribes and groups throughout the planning process. The Selected Action will not result in impairment of American Indian traditional cultural resources, including tribally-identified, eligible, and listed National Register properties. Traditional use sites and features important for maintaining cultural and spiritual traditions will not be altered. The NPS

will continue to consult with traditionally associated American Indian tribes and groups throughout project implementation to ensure that historic properties with religious and cultural significance are not adversely effected.

## PUBLIC INVOLVEMENT

### Public Scoping

Yosemite National Park conducted a 30-day public scoping period for the Bridalveil Fall Rehabilitation Project from April 26, 2017 through May 26, 2017. The NPS provided information to the public in the form of an electronic newsletter; press release; NPS Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/bridalveil>); Yosemite National Park website (<https://www.nps.gov/yose/getinvolved/planning.htm>); media interviews; and a public open house on February 28, 2018. During the public scoping period, the park received 22 correspondences, generating 77 individual substantive comments. All comments received during the scoping period, substantive or non-substantive, were duly considered and are now part of the decision file for this project. Table 4 summarizes the issues and concerns identified during the public scoping process.

**Table 4. Public Issues, Comments, and Concerns**

Topic	Comment or Concern
Visitor Facilities	Most commenters requested that the NPS update and improve the existing restrooms, while one group considered whether restrooms are necessary at the site.
	The NPS should expand the trail system around the exterior of the parking lot to separate vehicle and pedestrian traffic.
	The NPS should ensure that trails are accessible to all.
	The NPS should add interpretive signage to the area.
	The NPS should minimize interpretive and wayfinding signs and use electronic alternatives.
	The NPS should include more roadway signage to help direct traffic and alleviate congestion.
	The NPS should include more signage to improve pedestrian wayfinding.
	The NPS should provide upgraded trash receptacles.
Park Management	The NPS should improve roadway safety and address traffic congestion in the area.
	The NPS should make safety improvements to trails in the area.
Natural Resources	The NPS should protect natural resources in the park.
	The NPS should reduce wildlife vehicular deaths.
Cultural Resources	The NPS should consult with tribes and agency interests regarding historic properties and monitor impacts to cultural resources.
	The NPS should protect views from and toward historic structures, sites, and areas.
	The NPS should provide a place of quiet reflection to honor the cultural significance of the area.

**Table 4 (continued). Public Issues, Comments, and Concerns**

Topic	Comment or Concern
Scenic Resources	The NPS should protect the natural beauty of the area.
	The NPS should clear vistas to improve views.
Air Quality	The NPS should promote the shuttle system to reduce carbon dioxide emissions.
Visitor Experience	The NPS should improve interpretive displays.
	The NPS should address congestion and crowding on the viewing platform and trails.
Transportation	The NPS should enhance the shuttle system.
	The NPS should reduce vehicle congestion and traffic.
	The NPS should limit parking.
	The NPS should increase parking due to high demand.
	The NPS should improve traffic circulation to reduce congestion.
Other	The NPS should identify the funding source and the total cost for the project.

### Public Review and Comment Period

The *Bridalveil Fall Rehabilitation EA* was released for public review on February 12, 2018, and the NPS accepted comments through March 14, 2018. The document was available through the PEPC website and hard copies were available as requested. Approximately 50 hard copies were distributed to individuals, agencies, tribes, groups, and organizations. The park accepted comments on the *Bridalveil Fall EA* through the PEPC website and by U.S. mail.

The public review period was announced in a press release, a Yosemite electronic news release, the Yosemite National Park Daily Report, the Mariposa Gazette, and on the Yosemite National Park website. During the review period, the NPS held a webinar on March 1, 2018 and an open house on February 29, 2018 to disseminate information and collect written comments on the *Bridalveil Fall EA*. Following presentations, park staff answered questions clarifying the proposed action; no written comments were submitted at the open house.

During the 30-day public comment period, the park received 19 correspondences, generating 70 individual substantive comments. The planning team considered all comments. No modifications are included in the Selected Action as a result of comments received on the *Bridalveil Fall EA*. Table 5 summarizes the comments received during the comment period.

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**Table 5. Summary of Public Comments on the Bridalveil Fall Rehabilitation Environmental Assessment**

Topic	Comment or Concern
Visitor Facilities	The Selected Action will make Bridalveil Fall more accessible.
	We need more restrooms, including more female stalls, or you need to make them all unisex.
	We support the expansion of the existing platform and additional viewing platform and believe it will help to reduce visitor congestion and better protect sensitive species.
	We do not support the construction of the pedestrian bridge and believe it will increase disturbance in a sensitive area and increase the potential for visitor injury.
	1,500 square feet is too large for the viewing platform and would remove the intimate connection with the fall.
Cultural Resources	Please work with tribes during the execution of this project.
Scenic Resources	Minimize signage as it can have an impact on visual resources.
Utilities	We support the laying of the sewer lines within the footprint of Southside Drive and through the Pohono Bridge.
	The sewer line should have built in capacity for the potential of a second set of flush toilets in the future.
	The sewer line should be designed to service only the Bridalveil Fall area.
	The sewer and utility line should run up Southside Drive and over El Capitan crossover to hook up to the main line at Northside Drive.
	The power line at Yellow Pine could be used for Bridalveil Fall.
Visitor Experience	We support the additional interpretive and wayfinding signage.
Transportation	I hope the area will not become more congested.
	We need more parking spaces.
	The area should be serviced by the shuttle, and shuttles should be more frequent, in order to reduce congestion.
	We believe the reconfiguration of the parking lot will help to minimize congestion, improve visitor safety, and reduce flooding.
	Include signage to limit the amount of time a person can park in a spot.
	The exit lanes from the park lot will create confusion and congestion.
Other	I support the phasing and timeline for the project.

## AGENCY CONSULTATION

### U.S. Fish and Wildlife Service

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), requires federal agencies to consult with the U.S. Fish and Wildlife Service to ensure any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed species or critical habitat. The NPS generated a list of federal listed species in the project area from the USFWS website on June 20, 2017, and initiated informal consultation on August 16, 2017. The park requested

concurrence with a “not likely to adversely affect” determination on the federally listed California red-legged frog in January 2018. The park received a letter from the U.S. Fish and Wildlife Service on February 8, 2018 concurring with the NPS determination that the proposed project may affect, but is not likely to adversely effect the California red-legged frog.

### **California State Historic Preservation Officer and Other Consulting Parties**

On April 24–25, 2017, the park sent a project initiation letter (36 CFR §800.3) to the State Historic Preservation Officer (SHPO) with notification that the park was preparing the *Bridalveil Fall EA* in accordance with the stipulations of the Merced River Plan Programmatic Agreement (MRP PA). The letter also notified the SHPO that the park intended to coordinate the NEPA and National Historic Preservation Act (NHPA) Section 106 compliance processes (36 CFR §800.8(a)(1)). On May 31, 2017, the SHPO sent correspondence acknowledging the initiation of consultation for this project.

On February 5, 2018, the NPS sent a letter to the SHPO identifying the historic properties present, the area of potential effects, and an assessment of effects of the Bridalveil Fall undertaking. The NPS provided a NHPA Section 106 report to SHPO and requested concurrence with the park’s finding of no adverse effect associated with the proposed undertaking. Section 106 of the National Historic Preservation Act establishes a 30-day review period (36 CFR § 800.5(c)) for a finding of no adverse effects to historic properties. The park transmitted its assessment of no adverse effects to historic properties in the project’s Section 106 report and requested review within the prescribed 30-day review period. The SHPO received the report on February 7, 2018. No comments from the SHPO have been received to date. The park has met the requirements of NHPA Section 106 (36 CFR §800.5(c)).

**Advisory Council on Historic Preservation.** Consistent with guidance established in the MRP PA, the NPS invited the Advisory Council on Historic Preservation (ACHP) to consult on the MRP PA regarding the Bridalveil Fall Rehabilitation Project through the ACHP’s Electronic Section 106 Documentation Submittal System (e106) on April 25, 2017. The ACHP did not request to be a consulting party as a result of the e-notification.

**National Trust for Historic Preservation.** Consistent with guidance established in the MRP PA, the NPS notified the National Trust for Historic Preservation of the project by written correspondence dated April 25, 2017. The National Trust for Historic Preservation did not request to be a consulting party.

**Historic Bridge Foundation.** Consistent with guidance established in the MRP PA, the NPS notified the Historic Bridge Foundation of the project by written correspondence dated April 25, 2017. The Historic Bridge Foundation did not request to be a consulting party.

### **Traditionally Associated American Indian Tribes and Groups**

The park currently maintains consultative relationships with seven American Indian tribes and groups, including five federally recognized American Indian tribes (Bridgeport Indian Colony, Bishop Paiute Tribe, North Fork Rancheria of Mono Indians of California, Picayune Rancheria of the Chukchansi Indians, and the Tuolumne Band of Me-Wuk Indians), and two federally non-recognized American Indian groups (American Indian Council of Mariposa County, Inc. [also known as the Southern Sierra Miwuk Nation] and the Mono Lake Kutzadika<sup>a</sup>). Consultation with federally recognized American Indian tribes takes place on a government-to-government basis.

The Yosemite National Park American Indian Consultation Program facilitates regulatory compliance with statutes, Executive Orders, policies, and guidance related to American Indian resources, issues, and concerns. The NPS consulted with both federally recognized and federally non-recognized American Indian tribes and groups with ancestral connections to Yosemite National

Park lands and resources throughout the design and development of the project and environmental analysis.

On May 5, 2017, the park requested tribal participation in the scoping and development of the project and formally requested identification of historic properties with religious and cultural significance that might be affected by the project. The park and tribes met to discuss the project on June 8, 2017, and conducted a site visit on August 1, 2017. The NPS considered comments received from traditionally associated American Indian tribes and groups throughout the planning process. The NPS will continue to consult with traditionally associated American Indian tribes and groups throughout project design and implementation to ensure that historic properties with religious and cultural significance are not adversely effected.

Tribal comments received through letters, consultation meetings, site visits, and conference calls include:

- Alternative 2 would have more of an effect on archeological and ethnographic resources than Alternative 3. However, the tribes and groups would prefer a second comfort station (proposed under Alternative 2) to minimize the use of the natural areas as toilets.
- Tribal representatives expressed concerns of the proposed construction of a trail bridge across the creek beneath the fall (Alternative 2), which would impact cultural views in an area with spiritual significance. There is already development on the south side of the creek from the existing trail and an existing water pipeline, so tribal representatives are not as concerned about the new proposed loop trail from the parking lot to the existing viewing platform.
- Generally, the tribes have concerns about elevating trails above the ground plane (e.g. attachment of trail structures to boulders) but if a trail has to be elevated to cross a drainage, then the tribes have requested the opportunity to review and comment on any draft design plans. The tribes are not supportive of drilling into the boulders, preferring more traditional construction methods for trails (e.g. retaining walls, use of stone masonry).

### **U.S. Army Corps of Engineers**

The Clean Water Act (Public Law 92-500) requires federal land agencies to consult with the U.S. Army Corps of Engineers (USACE) regarding wetlands in the vicinity of proposed projects. The NPS is consulting with the USACE with regard to wetlands delineation and permit requirements necessary to implement proposed actions in the plan in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Representatives from the USACE visited the Bridalveil Fall project site on September 13, 2017 and March 15, 2018. Yosemite formally initiated consultation with the USACE by letter in January 2018.

Under Section 404 of the Clean Water Act (33 U.S.C. 1344), permit approval is required for projects that may result in the discharge of dredged or fill material into waters of the U.S. The NPS will work with the USACE to obtain required Section 404 permits prior to implementing the project.

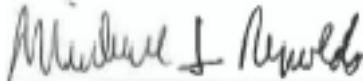
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## CONCLUSION

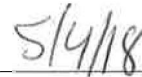
Based on the information contained in the *Bridalveil Fall Rehabilitation EA* as summarized above; the comprehensive mitigation strategy to avoid and minimize impacts; and the minimal nature of comments received from affected agencies and the public; it is the determination of the NPS that the Selected Action is not a major federal action significantly affecting the quality of the human environment. There will be no unacceptable impacts as a result of the Selected Action. Implementation of Phase 1 is expected to begin in summer 2018.

In accordance with the National Environmental Policy Act of 1969 and regulations of the CEQ (40 CFR 1508.9), an environmental impact statement will not be prepared.

Recommended:



Michael T. Reynolds  
Superintendent, Yosemite National Park



Date

Approved:



Stan Austin  
Regional Director, Pacific West Region, National Park Service




Date

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ATTACHMENT A. FLOODPLAIN STATEMENT OF FINDINGS  
BRIDALVEIL FALL REHABILITATION PROJECT  
YOSEMITE NATIONAL PARK

Recommended:

 5/4/18  
Michael T. Reynolds, Superintendent, Yosemite National Park Date

Certification of Technical Adequacy and Servicewide Consistency:

 5/15/2018  
Forrest Harvey, Chief, Water Resources Division Date

Concurred:

 5/21/2018  
Stacy C. Wertman, Chief, Pacific West Region Office of Safety, Health & Wellness Date

Approved:

 5/22/18  
Stan Austin, Regional Director, Pacific West Region Date

## INTRODUCTION

The National Park Service (NPS) has prepared the *Bridalveil Fall Rehabilitation Environmental Assessment (Bridalveil Fall EA)* to improve visitor facilities and services at the base of Bridalveil Fall in Yosemite Valley. The purpose of this Floodplain Statement of Findings is to review the *Bridalveil Fall EA* in sufficient detail to:

- Provide an accurate and complete understanding of the risks to human health and safety assumed by implementation of the Selected Action.
- Provide an analysis of the risks to property in the project area and the comparative flood risk among the alternatives.
- Describe the effects on floodplain values associated with the Selected Action.
- Provide a description and evaluation of mitigation measures to reduce impacts to the floodplain.

## Floodplains and Floodplain Extent

The Regulatory Floodplain for the proposed action at this site is the 100-year floodplain (1% annual chance of inundation), as described in the NPS Guidelines (NPS Director's Order 77-2). The 100-year and 500-year floodplain boundary in the Bridalveil Fall project area are not formally defined. For the purposes of this document, the NPS assumes that current and proposed facilities are located in the 100-year floodplain, per NPS Procedural Manual 77-2: Floodplain Management (update 2004).

## GENERAL CHARACTERISTICS OF FLOODING IN THE AREA

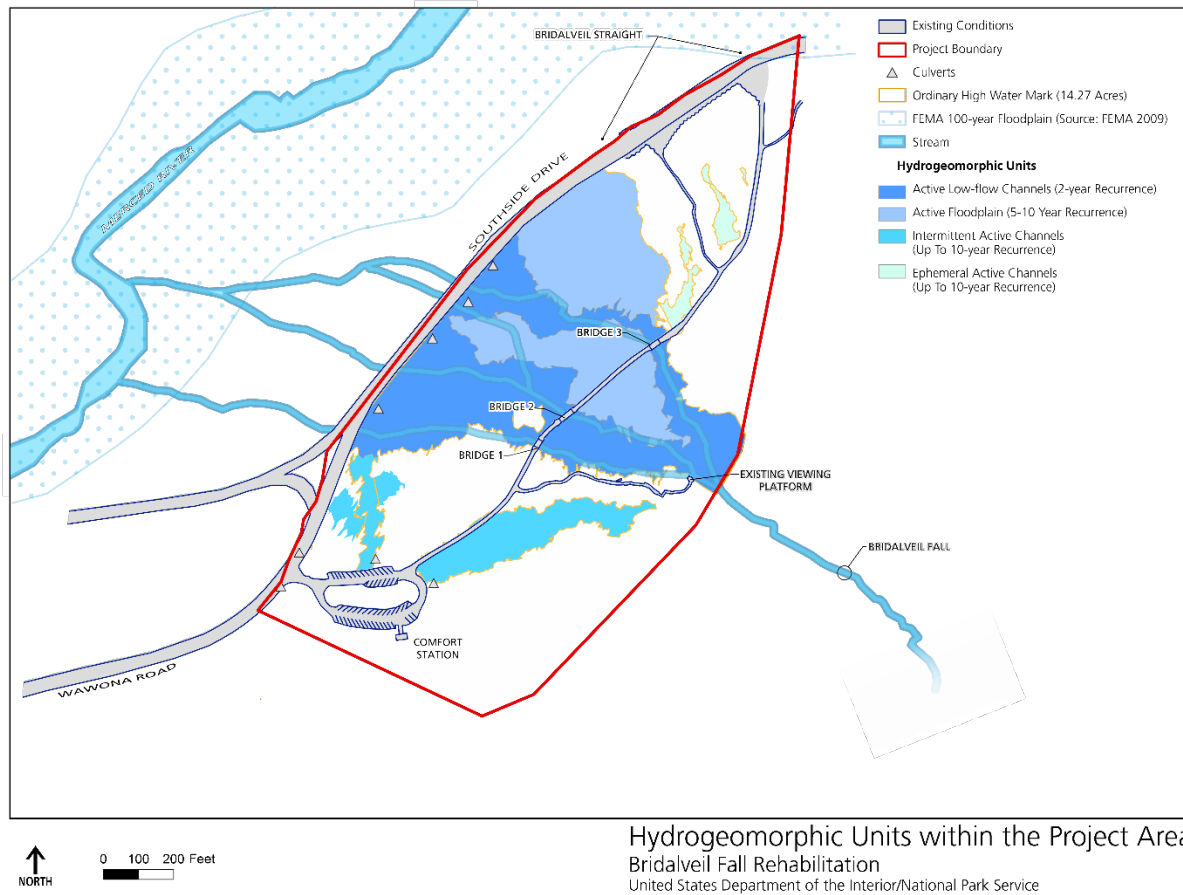
Flooding in the Bridalveil Fall project area can be categorized as one of two types: (1) *Spring floods* that occur with spring and summer snowmelt and associated runoff, and (2) *Winter floods* or *rain on snow events* that occur in the late fall and winter during intense rainfall or rainfall on snow events. From 1916 through 1989, 124 of the 140 recorded high flow events in Yosemite Valley were spring floods that occurred in response to spring or early summer snowmelt conditions (Madej et al. 1994). These events are responsible for the highest floods recorded, especially where warm heavy rains fall on snow in higher elevations. Frazil ice, while less common, occasionally forms at the base of Bridalveil Fall and is another cause of flooding within the park. Frazil ice forms when mist from the waterfall freezes in the air and accumulates at the base of a waterfall. Frazil ice may accumulate to be many feet thick, causing localized impoundments and other flooding.

At the beginning of the wet season the ground is extremely dry and about 3 to 5 inches of precipitation is required to satisfy the retention storage capacity of the soil before any significant runoff occurs. Later in the season when the ground may be wet with a moderate snow cover at the higher elevations, heavy rainfall over the basin can cause large flood runoff. An intense storm with a high freezing level may also result in flood runoff from almost the entire basin, with as much as 2 inches of snowmelt augmenting the rainfall by up to 20% or more. Most of the runoff from the Merced River basin occurs from November through July (Madej et al. 1994).

## Floodplain Attributes of Bridalveil Creek and the Merced River in Yosemite Valley

Bridalveil Creek is a tributary to the Merced River in Yosemite Valley. Bridalveil Creek descends over Bridalveil Fall and flows northwest from the base of Bridalveil Fall through the project area. At the base of the fall, Bridalveil Creek forms multiple braided stream channels as it descends a steep debris flow fan. The stream system, including the perennial Bridalveil Creek, multiple intermittent and ephemeral channels, and associated floodplains, make up the core of the Bridalveil Fall project area.

The gradient of Bridalveil Creek decreases as it reaches the edge of the project area at Southside Drive. The project area does not include the confluence of Bridalveil Creek with the Merced River, which is approximately 600 feet downstream of the project area boundary (Figure A-1). The northernmost tip of the Bridalveil Fall project area is located within the 100-year floodplain of the Merced River.



**Figure A-1. Hydrogeomorphic Units in the Bridalveil Fall Project Area**

Most of the Merced River in Yosemite Valley has a well-developed, relatively wide floodplain with an average slope of 0.1%. In the Bridalveil Fall area near the confluence with Bridalveil Creek, the river channel is steeper and more confined, the floodplain is narrow, and flow velocities are high. The largest documented flood events occurred in 1937, 1950, 1955, and 1997, with peak discharges measured in the range of 22,000 to 25,000 cubic feet per second at Pohono Bridge. These floods were the result of rain-on-snow events. Several large undocumented events also occurred during the 1860s and 1870s.

The January 1997 flood was the largest recorded flood within the park with a peak discharge of 25,000 cubic feet per second at Pohono Bridge (Eagan 1998). The flood inundated roads, picnic areas, park offices, and lodging units. It caused extensive damage to NPS facilities, including roads, bridges, buildings, and Yosemite Valley's electric, water, and sewer systems. The flood also altered natural features and caused downed trees, movement of landslide talus into streams, channel erosion, and substantial changes in channel morphology (NPS 1997). This flood was estimated to have a recurrence interval of 90 years (NPS 1997), or about a 1.1% chance of occurring in any given year.

## POTENTIAL RISKS TO HUMAN HEALTH AND SAFETY

Floods of consequence in the Bridalveil Fall area and Yosemite Valley always occur with warning. Flooding within Yosemite Valley typically requires a prolonged period of intense rain for at least 24 hours to create extreme flood conditions. The NPS and other agencies have a comprehensive monitoring system in place to provide an early warning system for major flooding, which provides sufficient time for evacuation.

Pedestrian access to the Bridalveil Fall project area is subject to flooding due to extreme weather events. Flooding may also affect roads, trails, bridges, and utilities that provide access or service the project area. When necessary, the NPS closes areas in Yosemite, including the Bridalveil Fall project area, to mitigate risks to human life due to flooding. Early warning, evacuation, and closure of the area would mitigate risks to humans in the Bridalveil Fall area.

## POTENTIAL RISKS TO PROPERTY

Since 1916, Yosemite National Park has experienced 11 winter floods large enough to cause damage to property. This section describes the existing and proposed new structures in the 100-year floodplain described under the Selected Action in the Bridalveil Fall Rehabilitation project, and associated risks to property and potential new capital investment.

The NPS categorizes buildings and facilities into the following three categories to evaluate floodplain risks (per NPS Director's Order 77-2 and Procedural Manual 77-2):

- *Class I Actions* include the placement or construction of administrative, residential, warehouse, and maintenance buildings and non-excepted (overnight) parking lots within the 100-year floodplain.
- *Class II Actions* create “an added disastrous dimension to the flood event.” Class II actions include the placement or construction of schools, clinics, emergency services, fuel storage facilities, large sewage treatment plants, and structures such as museums that store irreplaceable records and artifacts within the 500-year floodplain.
- *Class III Actions* include Class I or Class II Actions located in high hazard areas such as those subject to flash flooding.

The following existing or proposed new structures in the Selected Action of the *Bridalveil Fall EA* constitute Class I Actions (Figure 2) (see also Figure 2-3 in the *Bridalveil Fall EA*):

- **New accessible pedestrian path to a viewing platform.** The NPS would construct a new accessible path to the existing viewing platform. Most of the path would be at ground level, with the exception of elevated segments that cross small drainages. The park would construct the accessible pathway using robust building materials including natural stone, making it flood resistant.

The path is located outside the 2-10 year floodplain. Flood depths at this location during a larger flood event are expected to be low, with high flood velocities due to the steepness of the grade approaching the fall. Elevated segments of the path could sustain damage during extreme flood events. The need to repair elevated portions of the path after extreme flood events is expected to be moderate.

- **Expanded viewing platform.** The NPS would expand the existing viewing platform from 400 square feet to approximately 1,500 square feet to accommodate more visitors. The platform is located near the base of Bridalveil Fall, on the edge of the ordinary high water mark and 10-year floodplain boundary. Flood velocities and depths at this location would be high during extreme flood events.

The park would replace and expand the viewing platform in its current location using robust materials suitable for the site conditions. The finished elevation of the new viewing platform surface would be between 4 inches and 18 inches above the existing viewing platform elevation. The expanded portion of the platform would be outside of the bed and banks of Bridalveil Creek. The platform could sustain damage during extreme flood events, though the need for repair would be rare. The railing would be flood resistant, though falling boulders could damage it during extreme events. The viewing platform would require maintenance clearing after high flood events.

- **Parking lot improvements.** The NPS would reconfigure the existing parking lot without expanding the existing footprint. The parking lot location is outside of main floodways such as Bridalveil Creek. Flood depths in this location during a large flood event are expected to be low, with low flood velocities. The existing parking lot has withstood multiple large flood events with minor damage. Repairing the culvert in the northeast corner of the parking lot is expected to substantially improve drainage through the area and prevent future water-caused erosion. The parking lot provides critical services to that area and there will be no flood-related risks to capital investments for parking lot improvements in this location

Actions along Bridalveil Straight (reconfigured parking, construction of a visitor gathering and viewing area, and reconfigured or paved trails) are considered excepted actions and do not require evaluation in this Statement of Findings because they are outside or above the floodplain and Bridalveil Straight is a non-high hazard area. Improvements to the historic Carriage Road are considered excepted actions for the Floodplain Statement of Findings. The Carriage Road Trail is a cornerstone to visitor circulation within the project area. The trail will not be removed because it is an important contributing element to the Yosemite Village Historic District, and its removal or demolition would result in an adverse effect on this historic resource.

There are no Class II or Class III actions proposed in the Bridalveil Fall project under any of the alternatives.

### **Alternatives Considered**

The *Bridalveil Fall EA* considered one action alternative, Alternative 2, in addition to the Selected Action considered in this Statement of Findings. Alternative 2 proposes additional facilities in the floodplain – a pedestrian bridge across Bridalveil Creek from the viewing platform near the base of the fall and an additional comfort station along Bridalveil Straight. The additional comfort station would be located in a non-high hazard area, outside deep flood flows and high velocities. The bridge across Bridalveil Fall would require additional Statement of Findings analysis to determine impacts on capital investment. The No Action alternative, Alternative 1, evaluated existing conditions in the area with no additional structures in the floodplain. The No Action alternative would not meet the purpose and need of the project.

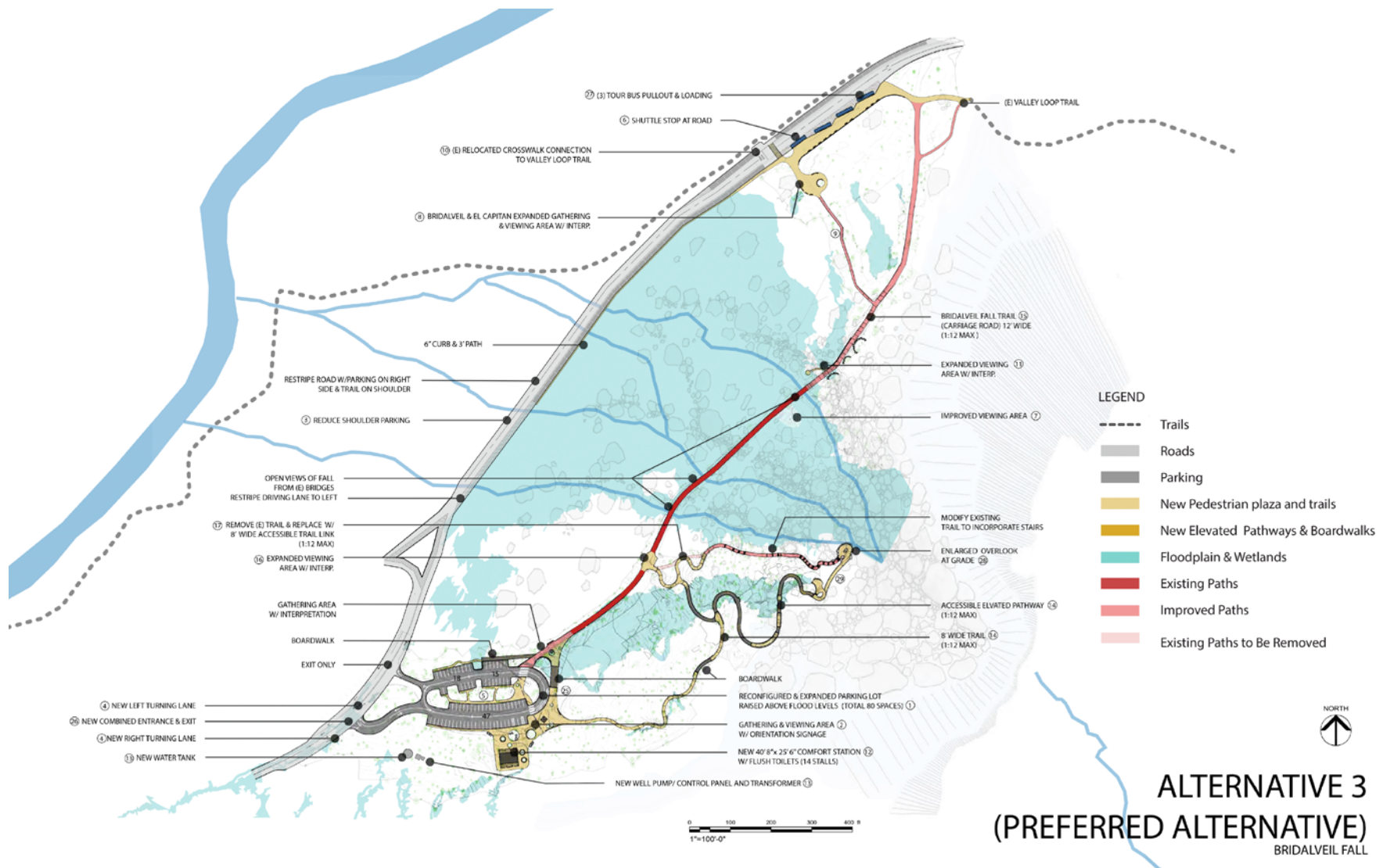


Figure A-2. Preferred Alternative in the *Bridalveil Fall Rehabilitation Environmental Assessment*

## **POTENTIAL RISKS TO FLOODPLAIN VALUES**

Floodplains provide an array of natural and physical resource values within Yosemite. These values include habitat for vegetation and wildlife, periodic disturbance to habitats within floodplains, which can support ecological value and spatial diversity in habitat, dissipation of flood energy, and benefits to waterway hydrologic processes including fluvial transport mechanisms and river geomorphic processes. The floodplain also recharges groundwater in areas where soils are sufficiently pervious.

Construction of the new comfort station with flush toilets at the parking lot would substantially improve natural resource conditions and water quality in the parking lot area. Considerable human waste is present in the forest near the parking lot, and new flush toilets would provide an alternative to the current long lines and disagreeable conditions at the existing vault toilets. The park expects the presence of human waste in natural areas to diminish greatly after construction of the new flush toilets.

Reconfiguration of the parking lot would have no impact on floodplain values, as the park would reconfigure the parking lot in the same footprint. Culverts would be repaired in the northeast corner of the lot and the new trailhead boardwalk configuration will restore flows off the parking lot in a more natural pattern. Raising the northeast part of the parking lot about 18 inches would aid in moving flowing water back to natural water drainages.

The new accessible pedestrian path to a viewing platform would be raised over drainages, preserving natural flow patterns in the area and avoiding wetland vegetation. There is considerable off-trail foot traffic in this area, which tramples native vegetation and habitat. The trail will confine use to one path and may reduce off-trail use.

While the new expanded portion of the viewing platform would not extend into the bed and banks of Bridalveil Creek, a small portion of the existing platform would remain within the bed and banks. Creek flows do not reach the platform at low flows. During moderate and high flows, the platform would not substantially impact flows more than the existing boulders and trees in the very rough alluvial fan environment.

## **DESIGN OR MODIFICATIONS TO MINIMIZE HARM TO FLOODPLAIN VALUES OR RISKS TO LIFE AND PROPERTY**

The design of all new structures or substantial improvements to existing structures will incorporate requirements and methods to minimize flood damage. Park staff will maintain an active flood evacuation plan. The plan details responsibilities of individual park employees for advanced preparedness measures; removing or securing park property; records and utility systems; monitoring communication; and conducting rescue and salvage operations. Impacts on the site's resources will be minimized and avoided per mitigation measures in the environmental assessment.

### **Site-Specific Mitigation**

- Active flood plans will be in place for timely and safe evacuation of people in times of rising water. Areas will be evacuated prior to major storm events that could potentially produce flooding, based on ongoing monitoring within the Park. Risks to humans will be mitigated by monitoring of storm or potential storm conditions, warning, and evacuation as warranted.

## CONCLUSION

Implementation of the Selected Action in the *Bridalveil Fall EA* will take place in compliance with regulations and policies to prevent impacts to floodplain values and loss of human life or property. The park and contractors will strictly adhere to mitigation measures during and after construction activities. Individual permits with other agencies will be obtained prior to construction activities. The NPS concludes that there will be no unacceptable risks to human health and safety, unacceptable impacts to property, or substantial long-term adverse impacts to floodplain values. Therefore, the NPS finds the Selected Action in the *Bridalveil Fall EA* to be acceptable under Executive Order 11988 and the NPS Directors Order 77-2 for the protection of floodplains.

## REFERENCES

Eagan

- 1998 Modeling Floods in Yosemite Valley, California Using Hydrologic Engineering Center's River Analysis System. Master's Thesis, University of California, Davis.

Madej, M. A., W. E. Weaver, and D.K. Hagans

- 1994 Analysis of Bank Erosion on the Merced River, Yosemite Valley, Yosemite National Park, California, USA. Environmental Management Vol 18, Issue 2, pp 235-250. March.

NPS

- 1997 EFRO Report, Yosemite National Park, Highwater 97. April.

## ATTACHMENT B

### WILD AND SCENIC RIVERS ACT SECTION 7 DETERMINATION BRIDALVEIL FALL REHABILITATION PROJECT

This document evaluates the Selected Action (Alternative 3) in the *Bridalveil Fall Rehabilitation Environmental Assessment (Bridalveil Fall EA)* in terms of Section 7 of the Wild and Scenic Rivers Act (WSRA), a key provision that aims to protect the free-flowing condition of designated rivers. The authority for this determination is found in Public Law 90-542, as amended, 16 United States Code (USC) 271-1278. WSRA Section 7 requires managing agencies to conduct a rigorous and consistent process to protect the free-flowing condition of the Merced River when a proposed *water resources project*<sup>1</sup> triggers a review.

Two actions under the Selected Action (Alternative 3) would be located within the bed and banks of Bridalveil Creek and associated tributaries to the Merced Wild and Scenic River. These actions are: (1) enlarge the existing viewing platform to 1,500 square feet (sq ft), and (2) add a new accessible loop trail from the parking lot to the existing platform. This document evaluates these actions for their potential to invade the Merced Wild and Scenic River corridor or diminish scenic, recreational, fish, or wildlife values present on the day of designation (WSRA§7(b)). These standards apply to tributaries of a wild and scenic river per WSRA§7(b).

#### PROJECT DESCRIPTION

A complete description of Alternative 3 (Selected Action) is presented in Chapter 2 of the *Bridalveil Fall EA*. The following section summarizes the key features of the Selected Action within the bed and banks of Bridalveil Creek, a tributary to the Merced Wild and Scenic River.

#### Actions within the Bed and Banks of Bridalveil Creek

**Existing Viewing Platform.** The park would expand the existing viewing platform from about 400 sq ft to about 1,500 sq ft to reduce crowding as directed in the *Merced Wild and Scenic River Comprehensive Management Plan Environmental Impact Statement and Record of Decision (Merced River Plan)* (NPS 2014). Part of the existing platform is located within the bed and banks of Bridalveil Creek (about 175 sq ft) (Figure 2-9 in the *Bridalveil Fall EA*). The existing portion of the platform would be overlaid with smooth material. The overlay would be 4 to 18 inches deep, depending on the contours of the existing platform surface. Bridalveil Creek does not reach the viewing platform at low flows. The new expanded portion of the viewing platform would occur outside of the bed and banks of Bridalveil Creek.

**New Accessible Pedestrian Loop Trail.** The park would construct a new accessible pedestrian loop trail from the parking lot to the existing viewing platform (Figure 2-3 in the *Bridalveil Fall EA*). Most of the trail would be located in upland areas. Portions of the pedestrian trail would be elevated to cross an intermittent wetland stream channel and the piers to support the elevated portions would likely be placed within the intermittent wetland channel. The park considered options to hang the elevated portions of the trail from nearby boulders rather than install support piers, but rejected the idea because of concerns that the trail would not be compatible with the Yosemite Valley Historic District and Yosemite Design

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<sup>1</sup> A water resources project is any dam, water conduit, powerhouse, transmission line, or other works project under the Federal Power Act, or other developments, that would affect the free-flowing character of a wild and scenic or congressionally authorized study river. In addition to projects licensed by the Federal Energy Regulatory Commission, water resources project may include dams, water diversions, fisheries habitat and watershed restoration, bridges and other roadway construction/reconstruction projects, bank stabilization projects, channelization projects, levee construction, boat ramps, fishing piers, and activities that require a section 404 permit from the U.S. Army Corps of Engineers (Clean Water Act Section 404).

Guidelines (NPS 2011). The park's traditionally associated American Indian tribes and groups also did not support the idea of hanging the trail from boulders. The park also considered a completely ground-based trail alternative with causeways through the drainage channel. The park rejected this option was because it would divert natural water flows and direct them through culverts, and a large amount of ground disturbance would be required in a relatively pristine environment.

### **Actions Outside the Bed and Banks of Bridalveil Creek**

**Comfort Station and Parking Lot.** The existing comfort station with four vault toilets at the parking lot would be replaced with a new comfort station with flush toilets (14 stalls) in the same general area. Utilities to service the comfort station would connect to the main lines at Northside Drive near Pohono Bridge, requiring approximately 1 mile of trenching or directional drilling in Wawona Road/Southside Drive. The northeast end of the parking lot would be raised a maximum of 18 inches and damaged culverts and headwalls would be reconstructed.

The existing parking lot footprint would be reorganized to gain 20 to 24 parking spaces (about 80 total spaces including four accessible spaces). There would be a separate entrance and exit road into the parking lot

**Trails, Bridges, and Viewing Areas.** Crews would selectively clear trees from new and existing viewpoints to enhance views. All new trails and pathways would be constructed to meet accessibility standards. . The existing trailhead at the parking lot would be moved a short distance to minimize ponding during high water events. A short boardwalk on the east side of the parking lot would be constructed over the drainage area to connect with the new gathering and viewing area.

**Bridalveil Straight.** The park would designate a commercial tour bus parking area on the south side of Southside Drive between the intersection of Wawona Road and the east end of Bridalveil Straight. This area was formerly ad hoc tour bus and private vehicle parking. A gathering area with views of Bridalveil Fall and El Capitan, approximately 2,700 sq ft in size, would be added on the south side of Southside Drive. Less than 10 trees would be selectively removed to enhance the view of El Capitan.

### **ANALYSIS**

The effects of the proposed water resources actions within the Merced River corridor are outlined in Table B-1.

TABLE B-1 EFFECTS OF PROPOSED WATER RESOURCES ACTIONS UNDER THE SELECTED ACTION (ALTERNATIVE 3)

Expanded Viewing Platform	Elevated Portions of New Pedestrian Trail
Potential for Actions to Invade the Merced Wild and Scenic River	Potential for Actions to Invade the Merced Wild and Scenic River
The new expanded portion of the viewing platform would not extend into the bed and banks of Bridalveil Creek, which is a tributary to the Merced River, but a small portion of the <i>existing</i> platform extends into the Bridalveil Creek channel. Creek flows do not reach the existing platform at low flows. During moderate and high flows, the platform would not substantially impact flows in Bridalveil Creek more than the existing boulders and trees in the very rough alluvial fan environment. Impacts to flows of the Merced River would be imperceptible.	The insertion of piers into an intermittent stream channel to support elevated portions of the new pedestrian trail will have no effect on the main Merced River. The channel is part of the braided Bridalveil Creek drainage system that flows during moderate to high flows. Water displacement caused by support piers will be insignificant in Bridalveil Creek as well as the Merced River.
Effects on Scenic Values - Scenic values, as specified for Segment 2B in the <i>Merced Wild and Scenic River Comprehensive Management Plan</i> (MRP)(NPS 2014), are views of the world's most iconic scenery, with the river and meadows forming a placid foreground to towering cliffs and waterfalls (ORV 16) (MRP page 5-4) . To protect and enhance scenic values in this river segment, new development should harmonize with its surrounding landscape (MRP pages 5-111 to 5-116).	
The viewing platform would be compatible with the Yosemite design guidelines (NPS 2011) and the surrounding landscape. The expanded viewing platform would not result in reduced viewing quality as it will not silhouette or block views of Bridalveil Fall.	The elevated portions of the new pedestrian trail would be compatible with the Yosemite design guidelines (NPS 2011) and the surrounding landscape. The trail would not silhouette or block views of Bridalveil Fall or result in reduced scenic quality.
Effects on Recreational Values – Recreational values in Segment 2B of the Merced River corridor are a wide variety of river-related recreational activities in the Valley's extraordinary setting along the Merced River (ORV 20 Merced River Plan pg. 5-4). In Segment 2B, recreational values include the ability for people of all ages and abilities to immerse themselves in their surroundings and take in the sights, sounds, and feel of the river and its dramatic backdrop (MRP page 5-130). To protect and enhance recreational values, the park must provide for a diversity of high quality river-related recreational opportunities that allow visitors to directly connect with the river and its environs amidst the spectacular scenery of Yosemite Valley (MRP page 5-130). The MRP commits to redesign access and provide less crowded conditions (MRP page 5-138).	
Expansion of the viewing platform will address crowded conditions and high "site displacement values" described in the MRP (page 5-137 to 5-138). Viewing Bridalveil Fall, often surrounded by mist from the fall, embodies the goal of providing recreational opportunities that directly connect with the river and its environs.	Addition of an accessible trail with elevated portions follows direction in the <i>Merced River Plan</i> to redesign access and improve crowded conditions in the Bridalveil Fall area (MRP page 5-138). The trail route will allow visitors to immerse themselves and directly connect with the natural beauty of the Bridalveil Fall environment.
Effects on Wildlife and Fish Values – Wildlife and fisheries values fall under the biological values specified in segment 2B of the Merced River (MRP page 3 5-3). Biological values include the meadows and riparian communities of Yosemite Valley that comprise one of the largest mid-elevation meadow-riparian complexes in the Sierra Nevada (ORV 2).	

Expanded Viewing Platform	Elevated Portions of New Pedestrian Trail
Expansion of the viewing platform would have short-term construction related effects on wildlife related to noise and equipment. Mitigation measures would protect Bridalveil Creek from erosion-related issues. In the long-term, the action would not affect the meadows and riparian communities of Yosemite Valley and there would be no riparian resources affected by expansion of the platform.	Construction of elevated portions of a new pedestrian trail would have short-term construction related effects on wildlife related to noise and equipment. The action would not affect the meadows and riparian communities of Yosemite Valley, and riparian resources would not be affected by trail construction. There would be no effect on fisheries as the intermittent channel is completely dry for most of the year with no ponding.

## SECTION 7 DETERMINATION

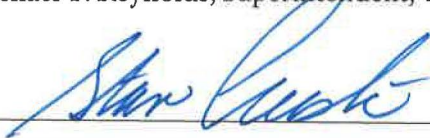
The *Bridalveil Fall EA* includes actions to enlarge the existing viewing platform and add a new accessible loop trail from the parking lot to the existing platform. These actions are consistent with management goals to protect and enhance the Merced Wild and Scenic River. These actions would not invade the Merced Wild and Scenic River or diminish the scenic, recreational, fish, or wildlife values present on the day of Merced Wild and Scenic River designation.



Michael T. Reynolds, Superintendent, Yosemite National Park



Date



Stan Austin, Regional Director, Pacific West Region



Date

## References

IWSRCC

2004 Wild and Scenic Rivers Act: Section 7 Technical Report.

National Park Service (NPS)

2011 A Sense of Place: Design Guidelines for Yosemite National Park.

2014 *Merced Wild and Scenic River Final Comprehensive Management Plan and Environmental Impact Statement (MRP).*

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**ATTACHMENT C. MITIGATION MEASURES**

The measures listed in Attachment C (Table C-1) will be incorporated into the project to avoid or reduce impacts to park resources.

**Table C-1. Mitigation Measures**

Topic	Mitigation Measure	Responsibility
<b>GENERAL CONSTRUCTION MANAGEMENT MEASURES</b>		
<b>MM-GCM-1</b> General Construction Management	<p>All Contractor and subcontractor employees shall receive a brief orientation about working in Yosemite National Park and the El Portal Administrative Site prior to performing work. The orientation describes the efforts to be taken by the Contractor and subcontractor employees to protect the natural, cultural, and physical resources of Yosemite National Park while working on this and other projects. This orientation also describes mitigation and other environmental protection measures that must be adhered to at all times while in the Park.</p> <p>All contractor and subcontractor employees shall view a government provided orientation video to ensure each is fully aware of the natural and cultural resource protection and mitigation requirements of work at YNP, or in the El Portal Administrative Site. Government staff will provide the initial orientation. Subsequent on-going awareness orientation for new employees and when site conditions change shall be performed by contractor and integrated into construction operation procedures. The Contractor shall maintain a manifest tracking all contractor personnel, when they received their orientation training, and when they started work. Contractor personnel shall be field identifiable as having received their orientation training by means of a readily visible sticker on their hard hat. Prior to entry into the park, Contractor shall steam-clean heavy equipment to prevent importation of non-native plant species, tighten hydraulic fittings, ensure hydraulic hoses are in good condition and replace if damaged, and repair all petroleum leaks. Inspect the project to ensure that impacts stay within the parameters of the project area and do not escalate beyond the scope of the environmental assessment, as well as to ensure that the project conforms with all applicable permits or project conditions. Store all construction equipment within the delineated work limits. Contractor shall also confine work areas within creek channels to the smallest area necessary.</p> <p>If deemed necessary, demolition/construction work on weekends or federal government holidays may be authorized, with prior written approval of the Superintendent.</p> <p>Contractor shall remove all tools, equipment, barricades, signs, surplus materials, and rubbish from the project work limits upon project completion. Contractor shall repair any asphalt surfaces that are damaged due to work on the project to original condition. Contractors shall also remove all debris from the project site, including all visible concrete, timber, and metal pieces.</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-GCM-1</b> General Construction Management (cont.)	<p>The park shall develop a Communications Strategy Plan to alert necessary park and Concessioner employees, residents and visitors to pertinent elements of the construction work schedule.</p> <p>The Contractor shall provide protective fencing enclosures around construction areas, including utility trenches to protect public health and safety.</p> <p>The NPS will apply for and comply with all federal and state permits required for construction-related activities.</p> <p>Contractor and NPS shall implement compliance monitoring to ensure that the project remains within the parameters of National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) compliance documents.</p> <p>Develop an emergency notification plan that complies with park, federal, and state requirements and allows contractors to properly notify park, federal, and/or state personnel in the event of an emergency during construction activities. This plan will address notification requirements related to fire, personnel, and/or visitor injury, releases of spilled material, evacuation processes, etc. The emergency notification plan will be submitted to the park for review/approval prior to commencement of construction activities.</p> <p>Identify locations of existing utilities prior to removal activity to prevent damage to utilities. The Underground Services Alert and NPS maintenance staff will be informed 72 hours prior to any ground disturbance. Construction-related activities will not proceed until the process of locating existing utilities is completed (water, wastewater, electric, communications, and telephone lines). An emergency response plan will be required of the contractor.</p>	
<b>MM-GCM-2</b> Design	<p>In accordance with the National Park Service's Denver Service Center's Workflows, the standard business practices outlining the requirements for general, predesign, schematic design, design development, and construction documents shall be followed (<a href="http://www.nps.gov/dscw/design.htm">www.nps.gov/dscw/design.htm</a>)</p>	National Park Service
<b>MM-GCM-3</b> Construction	<p>In accordance with the most current version of Yosemite National Park's Division 1 Specifications (also referred to as General Requirements for Construction), the standard business practices outlining the requirements for Summary of Work; Seismic Requirements; Definition of Bid Items; Project Meetings; Critical Path Method Construction Schedule; Project Schedules (small and large projects); Submittal Procedures; Submittals; Natural, Cultural, and Physical Resources Protection; Storm Water Pollution Prevention Measures; Accident Prevention; Reference Standards; Contractor Quality Control; Temporary Services and Controls; Field Support Offices; Traffic Control; Product Substitutions and Variations; Material and Equipment Handling and Storage; Field Engineering; Project Closeout; Operation and Maintenance Data; and, System Start, Demonstration and Training shall be incorporated into all construction requirements documents (plans and specifications).</p>	National Park Service
<b>MM-GCM-4</b> Design Guidelines	<p><i>A Sense of Place: Design Guidelines for Yosemite National Park</i> shall be followed to ensure that park facilities are designed to be compatible with the existing resources.</p>	National Park Service

Topic	Mitigation Measure	Responsibility
<b>MM-GCM-5</b> Design Approvals	All final construction documents (plans and specifications) will be approved by the Park Superintendent prior to implementation.	National Park Service
<b>MM-GCM-6</b> Pre-Construction	In accordance with the National Park Service's Denver Service Center's Workflows, the standard business practices outlining the requirements for a SharePoint Project Website, Permits, Accident Prevention & Blasting Safety Plans, Division 01 Management Plans, Baseline Construction Schedule, the Schedule of Values and the Pre-Construction Conference shall be followed ( <a href="http://www.nps.gov/dscw/design.htm">www.nps.gov/dscw/design.htm</a> ).	National Park Service
<b>MM-GCM-7</b> Construction	In accordance with the National Park Service's Denver Service Center's Workflows, the standard business practices outlining the requirements for Submittals, Coordination, Documentation, Tracking, Modifications, Beneficial Occupancy & Milestone Inspections, Closeout Submittals, and Substantial Completion shall be followed ( <a href="http://www.nps.gov/dscw/design.htm">www.nps.gov/dscw/design.htm</a> ).	National Park Service
<b>MM-GCM-8</b> Post-Construction	In accordance with the National Park Service's Denver Service Center's Workflows, the standard business practices outlining the requirements for the Construction Contractor's Performance Evaluation, Draft Completion Reports (Fixed Assets), and Demobilizing Field Office (s) shall be followed ( <a href="http://www.nps.gov/dscw/design.htm">www.nps.gov/dscw/design.htm</a> ).	National Park Service
<b>MM-GCM-9</b>	Pre-Construction and Construction Design the utility trench and directional drilling to allow subsurface flows to continue unimpeded, without creating an underground dam. Do not allow asphalt as backfill material.	National Park Service
<b>MM-GCM-10</b>	Construction timing. The National Park Service will limit the operating period for construction to daylight hours.	Yosemite National Park; Contractor
<b>SOILS AND GEOHAZARDS</b>		
<b>MM-GEO-1</b> Soils Management	<p>The Contractor shall confine all earth moving activities to within the work limits as defined in the site plans. The displacement of soil or other materials outside the defined limits shall be approved by the contracting officer.</p> <p>Landscape: Land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.</p> <p>Topsoil shall be salvaged and placed in a separate location from sub-soils and replaced on top of other soils as the trench is backfilled. The location for stock piling soils and other woody materials shall be approved by the contracting officer.</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
MM-GEO-1 Soils Management (cont.)	<p data-bbox="453 228 1738 329">Fungal Pathogens In Soil (Root Rot): Fungal pathogens that have negative impacts on oaks and conifers are present in certain areas in Yosemite Valley. Soil infected with these pathogens shall not be imported into areas that are free of the pathogens.</p> <p data-bbox="453 362 1738 427">If construction drawings indicate that infected soil is present in the work site, the following procedures must be followed:</p> <ul data-bbox="506 459 1738 1435" style="list-style-type: none"> <li data-bbox="506 459 1738 597">• Ensure that infected soil is stored within the construction zone. Should infected soils be stockpiled outside of the construction zone, ensure that stockpiles are placed outside of areas that do not have the fungal pathogen. Protect stockpiles of infected soil to prevent transport by wind, water, animal, or human traffic.</li> <li data-bbox="506 597 1738 662">• Clean equipment buckets and tires or hand tools used in areas containing fungal pathogens before moving to or working in unaffected areas.</li> <li data-bbox="506 662 1738 727">• Whenever possible, all stumps shall be removed from excavations and disposed of in a legal manner outside of the Yosemite National Park boundary.</li> <li data-bbox="506 727 1738 833">• Stump treatment when stumps cannot be removed: The treatments following tree removal must be universal throughout the park to avoid inadvertently spreading infection. Eradication of the disease is not possible, but spread can be managed.</li> <li data-bbox="506 833 1738 1027">• Conifers: Treat all stumps (&gt;6 inches in diameter in recreational use areas, &gt;12 inches diameter in undeveloped areas) with Sporax within a few days of felling the tree. If a stump is ground, it must be treated with Sporax, and then covered with soil. If the stump is removed, no chemical treatment is required. Remove all of the root material &gt;3 inches in diameter. Standing trees that have been dead for less than one year must have stumps treated with Sporax once they are removed.</li> <li data-bbox="506 1027 1738 1092">• Deciduous oaks should be left whenever possible; if the tree must be cut, the entire stump and root system must be removed from the Park.</li> <li data-bbox="506 1092 1738 1133">• Disturb no more than 15 percent of the roots for any given tree.</li> <li data-bbox="506 1133 1738 1174">• Do not over-water oak trees.</li> <li data-bbox="506 1174 1738 1214">• Do not compact soil within drip lines of the tree.</li> <li data-bbox="506 1214 1738 1255">• Treatment of infected soils: Remove root material by sifting or sorting soil before backfilling.</li> <li data-bbox="506 1255 1738 1369">• Treatment of soils in an annosus zone. Only infected <i>Heterobasidion annosum</i> areas need to be treated for removal of root material. Standard specification for roots to be removed from disturbed soil: &gt;3 inches diameter or &gt;20 inches in length. Remove ALL stumps from excavation.</li> <li data-bbox="506 1369 1738 1409">• Do not move soil from infected areas.</li> <li data-bbox="506 1409 1738 1435">•</li> </ul>	

Topic	Mitigation Measure	Responsibility
MM-GEO-1 Soils Management (cont.)	<ul style="list-style-type: none"> <li>Topsoil shall be salvaged and reused in the same place from which it was excavated. If the soil is to be windrowed and used later, it should be sorted for root chunks prior to storage. Conserve and salvage topsoil for reuse. Materials will be reused to the maximum extent possible</li> <li>All disturbed soil and fill slopes shall be stabilized in a manner consistent with the provisions of Mitigation Measure MM-HYD-1 (see below).</li> </ul>	
<b>HYDROLOGY AND WATER QUALITY</b>		
MM-HYD-1 Stormwater Pollution Prevention Plan	<p>Contractor shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that designates construction best management practices to be used to control the sources of fine sediment and to capture and filter it before entering the river. The SWPPP shall define the characteristics of the site, identify the type of construction that will be occurring, and describe the practices that will be implemented to control erosion and the release of pollutants in stormwater. At a minimum, the SWPPP shall address the following, as applicable:</p> <p><b>Stabilization Practices</b></p> <ul style="list-style-type: none"> <li>The stabilization practices to be implemented shall specify the intended stabilization practices, which may include one or more of the following: temporary seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, erosion control mats, protection of trees, preservation of mature vegetation, etc. On the daily Contractor Quality Control (CQC) Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and/or grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Unless otherwise directed by the Contracting Officer for the reasons below (i.e., unsuitable conditions or no activity for less than 21 days), stabilization practices shall be initiated as soon as practicable, in any portion of the site where construction activities have temporarily or permanently ceased, but no more than 14 calendar days after the activities cease.</li> <li>Unsuitable Conditions - Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable. No Activity for Less Than 21 Days - Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the 14th day after construction activity temporarily ceased.</li> </ul>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-HYD-1</b> Stormwater Pollution Prevention Plan (cont.)	<p><b>Structural Practices</b></p> <ul style="list-style-type: none"> <li>The Contractor shall implement structural practices to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Location and details of installation of structural practices shall be depicted on the construction drawings.</li> </ul> <p><b>Silt Fences</b></p> <ul style="list-style-type: none"> <li>The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings or as needed based on Contractor operations. Final removal of silt fence barriers shall be upon approval by the Contracting Officer. Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints.</li> <li>When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6-inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the COR.</li> <li>Straw bales are not authorized for use in storm water control at YNP. They have the potential to introduce exotic species into the Park environment.</li> </ul> <p><b>Diversion Dikes.</b> Diversion dikes shall have a maximum channel slope of 2 percent and shall be adequately compacted to prevent failure. The minimum height measured from the top of the dike to the bottom of the channel shall be 18 inches. The minimum base width shall be 6 feet and the minimum top width shall be 2 feet. The Contractor shall ensure that the diversion dikes are not damaged by construction operations or traffic. Diversion dikes shall be located as shown on the drawings or as needed based on Contractor operations. Location of diversion dikes shall be fully coordinated with cultural and natural environmental protection requirements described in Section 01355, Natural, Cultural, and Physical Resources Protection.</p> <p><b>Filter Fabric.</b> The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments that are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent</p>	

Topic	Mitigation Measure	Responsibility																		
<b>MM-HYD-1</b> Stormwater Pollution Prevention Plan (cont.)	<p>by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:</p> <p style="text-align: center;"><b>FILTER FABRIC FOR SILT SCREEN FENCE</b></p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Physical Property</u></th> <th style="text-align: left;"><u>Test Procedure</u></th> <th style="text-align: left;"><u>Strength Requirement</u></th> </tr> </thead> <tbody> <tr> <td>Grab Tensile</td> <td>ASTM D 4632</td> <td>100 lbs. min.</td> </tr> <tr> <td>Elongation (%)</td> <td></td> <td>30 % max.</td> </tr> <tr> <td>Trapezoid Tear</td> <td>ASTM D 4533</td> <td>55 lbs. min.</td> </tr> <tr> <td>Permittivity</td> <td>ASTM D 4491</td> <td>0.2 sec<sup>-1</sup></td> </tr> <tr> <td>AOS (U.S. Std Sieve)</td> <td>ASTM D 4751</td> <td>20-100</td> </tr> </tbody> </table> <p><b>Silt Fence Stakes and Posts.</b> The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches when hardwood is used and 4 inches by 4 inches when softwood is used, and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.</p> <p><b>Identification Storage and Handling.</b> Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.</p> <p><b>Maintenance</b></p> <ul style="list-style-type: none"> <li>The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.</li> <li>Silt fences shall be inspected in accordance with the below paragraph, Inspections. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed with approval of COR. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade.</li> </ul>	<u>Physical Property</u>	<u>Test Procedure</u>	<u>Strength Requirement</u>	Grab Tensile	ASTM D 4632	100 lbs. min.	Elongation (%)		30 % max.	Trapezoid Tear	ASTM D 4533	55 lbs. min.	Permittivity	ASTM D 4491	0.2 sec <sup>-1</sup>	AOS (U.S. Std Sieve)	ASTM D 4751	20-100	
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Topic	Mitigation Measure	Responsibility
<b>MM-HYD-1</b> Stormwater Pollution Prevention Plan (cont.)	<ul style="list-style-type: none"> <li>• Diversion dikes shall be inspected in accordance with the below paragraph, Inspections. Close attention shall be paid to the repair of damaged diversion dikes and necessary repairs shall be accomplished promptly. When diversion dikes are no longer required, they shall be shaped to an acceptable grade.</li> </ul> <p><b>Inspections</b></p> <ul style="list-style-type: none"> <li>• The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every 7 calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.</li> <li>• Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.</li> </ul> <p>For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the COR within 24 hours of the inspection as a part of the Contractor's daily CQC Report. A copy of the inspection report shall be maintained on the job site.</p>	
<b>MM-HYD-2</b> Non-Hazardous Liquid Waste Management	<p>Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related wastewater off Government property in accordance with all Federal, State, Regional and Local laws and regulations.</p> <p>Water contaminated with silt, grout, or other construction by-product must be pumped to a holding tank. Location of the holding tank will be proposed by Contractor and approved by Contracting Officer.</p>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-HYD-3</b> Hazardous Materials and Wastes	<ul style="list-style-type: none"> <li>• Identify potentially hazardous substances to be used on the job site.</li> <li>• Identify handling procedures to ensure that hazardous substances are not released into the air, water, or ground.</li> <li>• Comply with Federal, State, and local laws and regulations for storage, handling, and disposal of these materials.</li> <li>• Storage of hazardous or flammable chemicals in the staging area or elsewhere on the site is prohibited except as approved by the Contracting Officer.</li> <li>• Hazardous materials shall not be discarded into the jobsite debris or waste-disposal facilities.</li> <li>• Empty containers shall be removed from the site and disposed of in a manner prescribed by law.</li> <li>• Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations.</li> <li>• A copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time is to be maintained on site and submitted to the Contracting Officer.</li> <li>• Before new hazardous materials are brought on site or removed from the site, the MSDS file shall be updated and submitted to the Contracting Officer.</li> </ul>	Contractor
<b>MM-HYD-4</b> Spill Prevention and Response Plan (SPRP)	<p>The California Regional Water Quality Control Board has issued a Cleanup and Abatement Order and Time Schedule Order to Yosemite National Park ordering that no sewage spills occur. The Contractor shall be required to follow the requirements of the Order and shall prepare a Spill Prevention and Response Plan (SPRP) and take appropriate spill prevention measures during all phases of the work. The California Regional Water Quality Control Board requires a minimum of 10 days to review the SPRP. All recommendations by the Board will be implemented at no additional cost to the NPS. The primary purpose of the SPRP is to prevent sewage spills from occurring by proper planning and protection of the project area, and then to respond to any sewage spills that may occur during the course of this project including appropriate notification of staff. The Plan will be general in nature and typical to all phases of the work with site specific plans required for each area involving trenching or any work with the possibility of accessing the existing system. The sewer lines are located throughout Yosemite Valley and in close proximity to waterways and stream channels such that spilled sewage could possibly reach the Merced River.</p> <p>The SPRP is structured in two parts – first a Spill Prevention Plan and then a Spill Response Plan. The Spill Prevention Plan (SPP) includes evaluation of specific conditions, set-up of containment for actual construction work as well as for bypass pumping. Sewer bypasses must be constructed to tie existing lines into the new system and to tie the new system into the existing system. The Spill Response Plan</p>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-HYD-4</b> Spill Prevention and Response Plan (SPRP) (cont.)	<p>(SRP) includes the initial response to stop and contain a spill, notification of staff, clean-up, and follow-up documentation. The SPP and the SRP together comprise the entire SPRP. A template of a plan follows at the end of this Section. An electronic version of this template will be provided to the successful bidder.</p> <p>All Contractor employees are required to be trained in the Spill Prevention Control in accordance with this SPRP.</p>	
<b>MM-HYD-5</b> Hazardous Materials Spill Prevention and Response Plan	<p>Contractor shall provide a Hazardous Materials Spill Prevention and Response Plan to address spill prevention and response measures for hazardous substances used on site, including fuels. Prior to the start of work, the Contractor shall submit a plan that complies with YNP, Federal and State requirements and allows contractors to properly notify officials in the event of an emergency occurring during construction activities. YNP requirements include, and the plan shall state, at a minimum:</p> <ul style="list-style-type: none"> <li>• During non-work operations, stationary equipment shall be parked over specially prepared containment pads designed to trap any leaking oil, fuel, or hydraulic fluids.</li> <li>• Inspect construction site daily for proper storage of hazardous materials, proper parking of equipment on containment pads, and for hydraulic and oil leaks of equipment, tighten hoses, and ensure they are in good condition.</li> <li>• Routine oiling and lubrication shall be conducted in areas with secondary containment using Best Management Practices (BMPs) at all times. Refueling of equipment in wetlands or stream channel areas is not allowed at any time.</li> <li>• Contractor shall maintain secondary containment for all equipment operating with fluids (such as drilling) or when direct discharge of leakage, spills, or other source of construction or equipment fluids can flow directly to any streambed, whether flowing with water or dry. Containment shall be designed and installed so as to prevent accidental spills into streambeds in the event of mechanical failure or hose breakage.</li> <li>• Contractor shall maintain spill response materials on the project site when using heavy equipment to ensure rapid response to small spills. These materials shall include absorbent pads, booms, or other materials as appropriate to contain oil, hydraulic fluid, solvents, and hazardous material spills. A list of the spill response materials to be kept on site shall be submitted to the Contracting Officer.</li> <li>• Contractor shall provide names and phone numbers of appropriate contractor's personnel to be contacted at any time (24 hours per day) regarding accidental release of hazardous substances to air, soil or water. This list shall be submitted to the Contracting Officer and a copy visibly displayed in work areas on site. Contractor shall have the Contracting Officer's and other appropriate Government emergency numbers posted and shall immediately notify the Contracting Officer or other Government representative on any accidental release of hazardous substances to air, soil, or water.</li> </ul>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-HYD-5</b> Hazardous Materials Spill Prevention and Response Plan (cont.)	<ul style="list-style-type: none"> <li>Hazardous or flammable chemicals shall be prohibited from storage in the staging area, except for those substances identified in the Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan. Hazardous waste materials shall be immediately removed from project site in approved containers.</li> <li>Comply with all applicable regulations and policies during the removal and remediation of asbestos, lead paint, and polychlorinated biphenyls.</li> </ul>	
<b>MM-HYD-6</b> Establish Boundary of Riparian Buffer Zone	Prior to developing construction design documents for projects within the river corridor, the contractor shall survey the ordinary high water mark; the determination of the high water mark will be in accordance with U.S. Army Corps of Engineers guidance. Survey(s) of the ordinary high water mark will be used to determine the boundary of the riparian buffer. All new development shall be located outside of the riparian buffer, which encompasses the area within 150 feet of the ordinary high water mark on both sides of the river.	Contractor
<b>VEGETATION AND WETLANDS</b>		
<b>MM-VEG-1</b> Protection from Exotic Plant Species	<p>The park and contractor shall undertake measures to prevent the introduction of exotic species in the project area and staging areas. All earth moving equipment must enter the Park free of dirt, dust, mud, seeds, or other potential contaminant. Equipment exhibiting any dirt or other material attached to frame, tires, wheels, or other parts shall be thoroughly cleaned by the Contractor before entering the Park.</p> <p>All equipment will be directed to the El Portal Maintenance Facility for inspection prior to commencing work. Areas inspected shall include, but not be limited to, tracks, track guard/housings, belly pans/under covers, buckets, rippers, and other attachments.</p> <p>Equipment that does not pass inspection will be turned around to the nearest cleaning facility outside the park. If vehicles are unable to drive to El Portal due to size or load restrictions, vehicles will be inspected at a mutually agreed site by the Contracting Officer prior to entering the Park. The Contractor shall notify the Construction manager at least two work days (not including weekends) prior to bringing any equipment into the Park. Equipment found to have entered the Park with potential contaminants will be removed from the Park at the direction of the Contracting Officer at Contractor's sole expense. Contractor shall minimize ground disturbance to the greatest extent possible.</p> <p>The contractor shall get approval in writing from the Contracting Officer for fill material that must be used in a way or stored in a location not clearly specified in the contract.</p> <p>Fill materials used within the top 12 inches of finished grade are required to be free of exotic and noxious weed species and shall have the source locations approved by the Contracting Officer. The Contractor shall submit to the Contracting Officer a list of proposed sources for imported fill materials</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-VEG-1</b> Protection from Exotic Plant Species (cont.)	<p>requiring certification 30 calendar days in advance of importing material. The presence of noxious weed species is grounds for rejection of the source.</p> <p>If exotic weed species are found or suspected, the Contractor may be required to strip the top 12 inches of source material and only import sub-surface material and/or sterilize the material, at the Contracting Officer's discretion. The presence of the following particularly noxious weed species are grounds for rejection of the source: spotted knapweed, yellow star-thistle, perennial pepperweed, broom species, and other species on the California State List of Noxious Weeds. If spraying is required, the Contractor shall provide a licensed operator to spray according to applicable state regulations and park management guidelines (e.g., the Invasive Species Management Plan). The Contractor shall not spray any herbicides until approved in writing by the Contracting Officer.</p> <p>Drain and flush all pumps, tanks, live wells, buckets and other containers that might carry water contaminated with exotic plants and animals, such as the zebra mussel, prior to bringing equipment into the park. Thoroughly wash all hauling tanks and equipment using a hard spray from a garden hose. If equipment was used in infested waters, use the following steps to clean the equipment:</p> <ul style="list-style-type: none"> <li>• Wash with hot water (140 F or 40 C) or a high pressure washer (250 pounds per square inch). Remove all aquatic weeds -- they can carry zebra mussels.</li> <li>• Disinfect equipment. Recent research shows that disinfection of nets and equipment with benzalkonium chloride at typical treatment rates (10 milligrams per liter for 24 hours, 100 milligrams per liter for 3 hours, or 250 milligrams per liter for 15 minutes) will effectively eliminate most exotic animals. Two other commonly used disinfectants, calcium hypochlorite and iodine, are ineffective against zebra mussels.</li> </ul> <p>Adult zebra mussels can live more than a week out of water in moist, shaded areas. Dry pumps, nets and other equipment used in infested waters in the sun for two to four days after cleaning. If adult mussels are present, dry equipment for two weeks.</p>	
<b>MM-VEG-2</b> Vegetation Inventory and Assessment	<p>Plant Condition Inventory: The Contractor and the Contracting Officer or designated representative, shall perform an on-site inventory of trees and other overall vegetation features within or near to the work limits. A print of the contract drawings showing tree locations and a photo record will be used to note condition of trees and vegetation. This annotated drawing will be retained by the Contracting Officer for use during the final walk-through and tree/vegetation assessment. This walk through shall be a part of the project closeout requirements (see Section 01770, Project Closeout).</p> <p>On-site inventory shall be scheduled in coordination with the pre-construction conference.</p> <p>Avoid construction, trenching, grading, paving, and staging within the drip line of valley oaks (<i>Quercus lobata</i>) and black oaks (<i>Quercus Kelloggii</i>). If removal, damage or such activity cannot be avoided, contractor shall consult with the Park Botanist to develop a mitigation strategy prior to construction in</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-VEG-2</b> Vegetation Inventory and Assessment (cont.)	<p>addition to the measures outlined below. Access to work sites requiring travel through undeveloped areas outside the work limits must be approved by the contracting officer.</p> <p>Provide temporary barriers (e.g., orange construction fence) to protect existing trees, plants and critical root zones that are designated to remain, but are: (1) within the construction limits; 2) on or just outside the construction limits; (3) within the clearing limits (i.e., the zone extending 5 feet beyond the staked construction limits); or (4) on, or just outside the clearing limit line. Barriers shall be in place before construction begins.</p> <p>Trees, shrubs, vines, grasses, and other vegetative features indicated and defined on the construction drawings to be preserved shall be clearly identified by marking, fencing, or any other approved techniques. The Contractor shall restore vegetative features damaged or destroyed during construction operations outside the limits of the approved work area.</p> <p>Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy resources including trees, shrubs, vines, grasses, topsoil, and landforms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized.</p> <p>Removal of trees will be performed by YNP in advance of Contractor's work. Should it be determined during the course of work that additional trees or tree roots require removal, Contractor shall notify the Contracting Officer who will coordinate an inspection and determination by the appropriate authorities whether to remove the tree or not. After tree removal, large roots may remain in the ground. Contractor shall be responsible for carefully removing in-ground tree roots of removed trees to permit excavation, drilling, or other ground penetrating construction activities. During tree root removal, do not use backhoes, chains, or other equipment in a manner that will harm roots of adjacent trees.</p> <p>Minimize disturbance to tree trunks and root zones to prevent damage to trees.</p> <p>Adjust trenches and other excavations to keep them beyond the drip line wherever possible.</p> <p>Attempt to maintain the following minimum clearances between the edges of tree trunks and excavation:</p> <ul style="list-style-type: none"> <li>• for trees more than 30-inch-in-diameter - 10 feet</li> <li>• for trees between 15-inch and 30-inch-in-diameter - 8 feet</li> <li>• for trees less than 15-inch-in-diameter - 5 feet</li> </ul> <p>Adjust the survey line, as necessary to maintain required clearances.</p> <p>Notify the Contracting Officer of any proposed trenches or other excavations within the drip line of trees.</p> <p>Steps to Mitigate Damage to Roots Due to Excavation:</p> <p>Take steps (as called for below) to mitigate damage to tree roots due to excavation, wherever the following circumstances apply:</p> <ul style="list-style-type: none"> <li>• Wherever excavation must take place within the drip line of oak trees regardless of diameter.</li> </ul>	

Topic	Mitigation Measure	Responsibility
<b>MM-VEG-2</b> Vegetation Inventory and Assessment (cont.)	<ul style="list-style-type: none"> <li>• Wherever excavation must take place within the drip line of trees other than oaks, for all trees 12 inches or larger in diameter.</li> </ul> <p>Adjustments in trench alignment or other factors may result in variations in which trees are affected. The Contractor shall accommodate these variations at no additional expense to the Government. Following are the steps which are required to mitigate damage to roots due to excavation:</p> <ul style="list-style-type: none"> <li>• Excavate carefully where tree roots might be encountered. Where roots 2 inches and larger are encountered, hand excavate as required to prevent damage to roots. Tunnel under roots to be saved, hand excavating as necessary.</li> <li>• Do not cut roots over 2-inch-in-diameter without approval of Contracting Officer.</li> <li>• Cleanly saw-cut roots between 1-inch and 2-inch-in-diameter where they interfere with work; do not cut roots except as necessary. Roots between 1-inch and 2-inch-in-diameter which must be cut shall be cleanly saw-cut near the edge of trench closest to the tree to prevent roots from being dislodged from soil by equipment.</li> <li>• Avoid soil compaction within plant root zones with heavy equipment and vehicles within the project work limits.</li> <li>• Do not cut wheels or make sharp turns with wheeled or tracked equipment in root zones. Do not pile excavated soil against tree trunks.</li> <li>• Do not mechanically compact soils in undeveloped areas except to meet minimum compaction requirements as approved by the contracting officer.</li> <li>• Maintain original soil topography in plant root zones whenever possible.</li> <li>• Preserve tree snags where feasible as potential bat or bird habitat.</li> </ul>	
<b>MM-VEG-3</b> Plant Appraisal	<p>If the Contractor destroys or injures trees and vegetation designated for protection or outside the work limits, the Contractor will be assessed damages prior to final progress payment. Replacement costs for damaged vegetation will be computed according to the method described in the International Society of Arboriculture's 1992 Guide for Plant Appraisal. This method is based on the cost of the largest commonly available tree or shrub, with modifications based on species value, condition, and location. A trained arborist or professional plant appraiser from the California region will be hired by the NPS to make the damage appraisal. The arborist's fees will be included in the damage assessment. This damage appraisal process will be triggered by any of the following types of damage to vegetation outside the work limits or unauthorized disturbance of vegetation within the work limits.</p> <ul style="list-style-type: none"> <li>• Removal of any tree or shrub.</li> <li>• Pruning or removal of more than 30 percent of a tree or shrub canopy.</li> <li>• Removal or fracture of any limb or trunk that is one of the major structural entities of the damaged plant.</li> <li>• Removal or fracture of any limb greater than 12 inches in diameter.</li> <li>• Bark damage or removal around more than 30 percent of the trunk circumference.</li> </ul>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-VEG-3</b> Plant Appraisal (cont.)	<ul style="list-style-type: none"> <li>Trenching or soil disturbance within the critical root zone that is deeper than 1-foot unless shown on the Drawings.</li> </ul> <p>If the damaged vegetation is protected under the Endangered Species Act or other special legislation, additional penalties may be assessed as per consultation with the U.S. Fish &amp; Wildlife Service. Pruning or removal of vegetation shall be supervised by Contracting Officer. The designated personnel may designate plant species for salvage. When authorized and supervised by the Contracting Officer, the Contractor is exempted from any penalties that might be assessed due to damage to vegetation.</p> <ul style="list-style-type: none"> <li>Acceptable disturbance to roots is limited to 15 percent of the area under the drip line being either cut or filled. Any tree with more than 50 percent of its roots disturbed should be removed during construction at the direction of the Contracting Officer.</li> <li>Wounds occurring from construction activity may be possible entry sites for disease spores. If a tree is accidentally injured during construction, it may need to be removed at the direction of the Contracting Officer.</li> </ul> <p>Trench alignments or other factors may result in variations in which trees are affected. The Contractor shall accommodate these variations at no additional expense to the Government. Minor cuts and damaged areas shall be assessed by the Contracting Officer. Repair to the plant will be at the recommendation of the YNP personnel and approval of the Contracting Officer.</p>	
<b>MM-VEG-4</b> Wetlands Delineation	Delineate wetlands and apply protection measures during construction. Wetlands shall be delineated by qualified National Park Service staff or certified wetland specialists and clearly marked prior to work. Perform activities in a cautious manner to prevent damage caused by equipment, erosion, siltation, etc. Use non-toxic materials for decking and sealants where possible.	Yosemite National Park; Contractor
<b>MM-VEG-5</b> Wetlands Regulation	<p>The Contractor shall adhere at all times to the conditions of U.S. Army Corps of Engineers Nationwide Permit No. 33, Temporary Construction, Access and Dewatering, with the following conditions as a minimum:</p> <ul style="list-style-type: none"> <li>All work will be subject to the Standard and Technical Conditions of the Certification of the California Regional Water Quality Control Board, a copy which will be provided to the Contractor.</li> <li>Work in streambeds is to be performed in periods of low water conditions. Contractor shall monitor stream flow conditions and weather forecasts at all times during the course of the work. During thunderstorms or other intense rain conditions, streambeds at Yosemite can fill rapidly.</li> <li>Re-grade and restore disturbed areas to preexisting contours to maintain drainage patterns.</li> </ul>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-VEG-6</b> Wetlands Protection	The Contractor shall fence construction areas adjacent to aquatic habitats to prohibit the movement of aquatic species into the construction area and to control siltation and disturbance in aquatic habitats. The Contractor shall salvage and reuse wetland soils as fill to the maximum extent possible. The Contractor shall use trench plugs where designated on the drawings in wetland areas to prevent changes to natural flow patterns. During dewatering, intakes shall be completely screened with wire mesh not larger than 5 millimeters to prevent aquatic species from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Access routes to and through work locations in the meadows and wetlands shall be planked with 1 1/8" plywood, stabilization mats or other method approved by the contracting officer.	Yosemite National Park, Project Manager; Contractor
<b>MM-VEG-7</b> Subsequent Wetland Statements of Finding	As site-specific information becomes available at a level of detail needed to fully and accurately disclose anticipated impacts on wetland habitats, processes, functions, and values, subsequent WSOFs for all other actions will be developed.	National Park Service
<b>MM-VEG-8</b> Special Status Plant Species	If special-status plant species are identified within the construction disturbance zone, in particular within restoration and revegetation areas, avoid special-status plant populations to the extent feasible during construction activities. If it is not feasible for construction activities to avoid special status plant species, species conservation measures will be developed in coordination with Yosemite National Park natural resources staff. Measures may include salvage of special-status plants for use in revegetating disturbed areas and transplantation of special-status plants wherever possible using methods and monitoring identified in the revegetation plan, monitoring to ensure successful revegetation, protection of plantings, and replacement of unsuccessful plant materials if practicable.	Yosemite National Park; Contractor
<b>WILDLIFE AND SPECIAL STATUS SPECIES</b>		
<b>MM-WL-1</b> Fish and Wildlife Protection	The Contractor and Contractor's employees shall not feed any animals within Yosemite National Park. The Contractor shall make all reasonable efforts in accordance with the plans and specifications for the protection of threatened or endangered or candidate species including their habitat in accordance with Federal, State, Regional, and local laws and regulations. Contractor shall schedule construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., after bird nesting seasons, when bats are neither hibernating nor have young, etc.); limit the effects of light and noise on adjacent habitat through controls on construction equipment; and provide adequate education and enforcement to limit construction worker activities that are destructive to wildlife and habitats.	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-WL-1</b> Fish and Wildlife Protection (cont.)	Contractor shall maintain routes of escape from excavated pits and trenches for animals that might fall in. During construction activities, Contractor personnel shall maintain vigilance for animals caught in excavations and take appropriate action to free them. <ul style="list-style-type: none"> <li>• Excavation pits shall have a ramp or incline at either end to allow for human and wildlife escape.</li> <li>• Each morning prior to commencing work activities, Contractor shall inspect construction site for trapped wildlife in excavation pits and carefully remove. If necessary, contact the Contracting Officer for assistance.</li> </ul>	
<b>MM-WL-2</b> Bear Precautions	Bears may be present at any location within the YNP boundaries, including at the project site. The Contractor shall incorporate the following precautions in all activities within the YNP boundary. All food, toiletries, and scented items (i.e., bug spray) shall be placed in bear boxes at the construction site provided by the Contractor. Bear boxes must remain closed and latched at all times, unless items are being retrieved. No food, toiletries, or scented items shall be stored in vehicles or left out. <ul style="list-style-type: none"> <li>• All food waste and food-related waste shall be disposed of in accordance with Non-Hazardous Solid Wastes requirements described elsewhere within this section.</li> <li>• All vehicles shall be checked daily to ensure that no items that may attract bears remain inside an unattended vehicle. Items that shall not be left in vehicles include canned food, drinks, soap, cosmetics, toiletries, domestic trash, recyclable food containers, ice chests, grocery bags, and unwashed items used for preparing or eating meals.</li> <li>• All windows and doors in recreational vehicles or trailers used for lodging or office space shall be closed and latched when not occupied.</li> <li>• The Contractor shall walk the job site at the end of each day and check for trash, food, and food-related items remaining at the site and dispose of the items in a bear-proof receptacle.</li> <li>• Proper food storage is important to the welfare of the Yosemite bear population and is required by law. The Contractor shall receive and all Contractor personnel shall read a brochure entitled, The Bears are not to Blame, provided by NPS staff as a courtesy. Contractor staff shall call the Save-a-Bear hotline (209) 372-0322 to report overflowing trash containers, improperly stored food, or bear sightings.</li> </ul>	Contractor
<b>MM-WL-3</b> Construction Timing	Schedule construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., after bird nesting seasons, when bats are neither hibernating nor have young, etc.).	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-WL-4</b> Bat Habitat Protection Guidelines	<p>A qualified bat biologist will conduct surveys prior to construction to evaluate whether habitat that will be affected by the proposed action provide hibernacula or nursery colony roosting habitat for bat species.</p> <p>If bats are detected during reproduction or hibernation periods, disturbance of potential habitat will be delayed until the bats can be excluded from the area in a manner that does not adversely affect their survival or that of their young.</p> <p>If bats are detected during reproduction or hibernation periods, disturbance of potential habitat will be delayed until the bats can be excluded from the area in a manner that does not adversely affect their survival or that of their young.</p> <p>If surveys conducted immediately prior to construction do not reveal any bat species present within the project area, then the action will begin within three days to prevent the destruction of any bats that could move into the area after the survey.</p>	Yosemite National Park; Contractor
<b>MM-WL-5</b> Bird Habitat Protection Guidelines	<p>Beginning in early spring, a park wildlife biologist will conduct bird surveys and review current owl reports to determine whether special status species are present and may be mating, nesting, or foraging in the project vicinity.</p> <p>If nesting birds are observed (e.g., discovered by workers) that are not special status species, the project manager will notify the park wildlife biologist who will recommend steps to avoid undesirable impacts to the nest or young.</p>	Yosemite National Park, Project Manager
<b>MM-WL-6</b> Fish and Wildlife Protection	<p>The NPS will brief the contractor regarding wildlife concerns at project initiation and periodically throughout the project to avoid activities that are destructive to wildlife and habitats.</p>	Yosemite National Park
<b>MM-WL-7</b> Fish and Wildlife Protection	<p>If deemed appropriate by the park aquatic or terrestrial ecologist, a NPS biologist will conduct a once-a-month survey throughout the active season for special status species. If the biologist finds evidence of the species, ground disturbance and construction activities will be flagged for avoidance and a biological monitor may be needed to oversee further construction.</p> <p>When a special status species is encountered within work areas, the first priority is to stop all activities in the surrounding area that have the potential to result in the harassment, injury, or death of the individual. Then, the situation shall be assessed by a National Park Service biologist in order to select a course of action that will minimize adverse effects to the individual. Avoidance is the preferred option if a special status species.</p>	Yosemite National Park

Topic	Mitigation Measure	Responsibility
<b>MM-WL-8</b> Fish and Wildlife Protection	A NPS biologist shall inspect the area and evaluate the necessity of fencing, signage, or other measures to protect the animal. If appropriate, the special status species shall be allowed to move out of the hazardous situation on its own volition to a safe location. The animal may not be picked up and moved based on it not moving fast enough or it is an inconvenience for activities associated with rehabilitation or operation. The special status species shall be captured and moved by hand only when there is no other option to prevent harassment, injury, or death. If appropriate habitat is located immediately adjacent to the capture location then the preferred option is relocation to that site. The special status species should not be moved outside of the radius it would have traveled on its own. Under no circumstances shall the special status species be relocated to non-National Park Service property.	Yosemite National Park
<b>MM-WL-9</b> Construction timing	Contractor would encourage employees to drive slowly on rainy, warm nights (nights where California red-legged frog dispersal is likely).	Contractor
<b>LIGHTSCAPES</b>		
<b>MM-LITE-1</b> Yosemite Lighting Guidelines	All new sources of lighting, or substantial modifications to structures with existing sources of exterior lighting, shall conform to the standards set forth in the Yosemite Lighting Guidelines, available on the park's website at: <a href="http://www.nps.gov/yose/naturescience/dark-night-sky.htm">http://www.nps.gov/yose/naturescience/dark-night-sky.htm</a> .	Yosemite National Park; Contractor
<b>MM-LITE-2</b> Night Lighting During Construction	Minimize night lighting during work. If night lighting is necessary, design lighting to be minimal, directed downward, and shielded.	Yosemite National Park; Contractor
<b>MM-LITE-3</b> Yosemite National Park Lighting Guidelines	<i>Yosemite National Park Lighting Guidelines</i> shall be followed to ensure that all exterior lighting in the park is designed to mitigate light pollution and to preserve the natural darkness as much as possible.	National Park Service
<b>SOUNDSCAPES</b>		
<b>MM-NOI-1</b> Construction Work Plan and Schedule	Contractor shall submit to the park for review and approval prior to commencement of construction a construction work plan/schedule that specifies the ways in which the contractor will minimize construction-related noise in noise-sensitive areas. At a minimum, the plan shall state the following: <ul style="list-style-type: none"> <li>• Ensure that all construction equipment has functional exhaust muffler systems.</li> <li>• Use hydraulically or electrically powered construction equipment, when feasible.</li> <li>• Locate stationary noise sources as far from sensitive receptors as possible.</li> <li>• Limit the idling of motors except as necessary (e.g., concrete mixing trucks).</li> <li>• A construction schedule that minimizes impacts to adjacent noise-sensitive activities.</li> </ul>	Contractor

Topic	Mitigation Measure	Responsibility																																																
MM-NOI-1 Construction Work Plan and Schedule (cont.)	<ul style="list-style-type: none"><li>Engine braking (“jake” brakes) shall not be used in lodging, camping, or residential areas. Engine brakes that are used shall be muffled.</li><li>Continuous noise abatement is required to prevent disturbance and nuisance to Park visitors and workers and to the occupants of adjacent premises and surrounding areas.</li><li>If the Contracting Officer determines excessive noise is emanating from the construction site, the Contractor may be required to provide sound barriers to deflect noise transmission from visitor areas or other areas impacted by noise.</li><li>Construction noise shall be minimized through use of best available noise control techniques wherever feasible. Sound levels must be kept to a minimum at all times. Equipment and machinery shall not exceed 85 dB when measured at 100 linear feet distance. Contractor shall use sound attenuated compressors and generators that comply with the most recent California Department of Transportation standards.</li></ul>																																																	
MM-NOI-2 Noise Management Levels	<p>Contractor shall ensure that all construction equipment and practices adhere to the following noise limitations: Repetitive and/or intermittent, high-level noise: Permitted only during Daytime. Do not exceed the following dB(A) limitations at 50 feet: <u>Sound Level in dB(A)</u>   <u>Time Duration of Impact Noise</u> 70      More than 12 minutes in any hour 80      More than 3 minutes in any hour Maximum permissible construction equipment noise levels at 50 feet: <table><tr><th><u>Earthmoving</u></th><th><u>dB(A)</u></th><th><u>Materials Handling</u></th><th><u>dB(A)</u></th></tr><tr><td>Front Loaders</td><td>75</td><td>Concrete Mixers</td><td>75</td></tr><tr><td>Backhoes</td><td>75</td><td>Concrete Pumps</td><td>75</td></tr><tr><td>Dozers</td><td>75</td><td>Cranes</td><td>75</td></tr><tr><td>Tractors</td><td>75</td><td>Derricks Impact</td><td>75</td></tr><tr><td>Scrapers</td><td>80</td><td>Pile Drivers</td><td>95</td></tr><tr><td>Graders</td><td>75</td><td>Jack Hammers</td><td>75</td></tr><tr><td>Trucks</td><td>75</td><td>Rock Drills</td><td>80</td></tr><tr><td>Pavers, Stationary</td><td>80</td><td>Pneumatic Tools</td><td>80</td></tr><tr><td>Pumps</td><td>75</td><td>Saws</td><td>75</td></tr><tr><td>Generators</td><td>75</td><td>Vibrators</td><td>75</td></tr><tr><td>Compressors</td><td>75</td><td></td><td></td></tr></table><i>Ambient Noise:</i> Maximum noise levels (dB) for receiving noise area at property line shall be as follows: Residential receiving area      Daytime:      65 dB    Nighttime:      45 dB</p>	<u>Earthmoving</u>	<u>dB(A)</u>	<u>Materials Handling</u>	<u>dB(A)</u>	Front Loaders	75	Concrete Mixers	75	Backhoes	75	Concrete Pumps	75	Dozers	75	Cranes	75	Tractors	75	Derricks Impact	75	Scrapers	80	Pile Drivers	95	Graders	75	Jack Hammers	75	Trucks	75	Rock Drills	80	Pavers, Stationary	80	Pneumatic Tools	80	Pumps	75	Saws	75	Generators	75	Vibrators	75	Compressors	75			Contractor
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Graders	75	Jack Hammers	75																																															
Trucks	75	Rock Drills	80																																															
Pavers, Stationary	80	Pneumatic Tools	80																																															
Pumps	75	Saws	75																																															
Generators	75	Vibrators	75																																															
Compressors	75																																																	

Topic	Mitigation Measure	Responsibility
<b>MM-NOI-2</b> Noise Management Levels (cont.)	Commercial/Industrial receiving area Daytime: 67 dB Nighttime: 65 dB In the event the existing local ambient noise level exceeds the maximum allowable receiving noise level (dB), the receiving noise level maximum for construction operations shall be adjusted as follows: Residential receiving area: Maximum 3 additional dB above the local ambient as measured at property line. Commercial/Industrial receiving area: Maximum 5 additional dB above the local ambient as measured at the property line.	
<b>MM-NOI-3</b> Field Quality Control	Contractor shall assess potential effects of construction noise on adjacent neighbors or facility occupants in accordance with ASTM E1686 and as follows: Ambient noise measurement: Measure at the property line at a height of at least four (4) feet above the immediate surrounding surface. Average the ambient noise level over a period of at least 15 minutes. Ambient noise measurement at urban sites: Conduct during morning peak traffic hour between 7 A.M. and 9 A.M. and afternoon peak traffic hour between 4 P.M. and 6 P.M. In addition, conduct a 24-hour measurement at the proposed project site to document the noise pattern throughout the day. Adjust and weight for seasonal and climatic variations. Monitor noise produced from construction operations in accordance with ASTM E1780.	Contractor
<b>AIR QUALITY</b>		
<b>MM-AIR-1</b> Dust Abatement Program	The Yosemite National Park and/or a contractor (as appropriate) shall prepare, implement, and comply with a dust abatement program during construction. Measures include, but are not limited to, the following: <ul style="list-style-type: none"> <li>• Water or apply soil stabilizers to disturbed areas;</li> <li>• When hauling dry materials, securely cover truck beds to prevent blowing dust or loss of debris;</li> <li>• Limit speeds to a maximum of 15 mph within construction areas. Slower speeds shall be maintained if necessary to reduce dust formation.</li> <li>• Minimize vegetation clearing;</li> <li>• Re-vegetate disturbed areas post construction;</li> <li>• At construction zone access points, prevent paved areas from accumulating mud, soils, and other organic materials.</li> </ul>	Yosemite National Park; Contractor
<b>MM-AIR-2</b> Equipment Exhaust Controls	The Yosemite National Park and/or a contractor (as appropriate) shall prepare, implement, and comply with equipment exhaust controls program during construction. Measures include, but are not limited to, the following: <ul style="list-style-type: none"> <li>• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points;</li> </ul>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-AIR-2</b> Equipment Exhaust Controls (cont.)	<ul style="list-style-type: none"> <li>• Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM;</li> <li>• Require all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines;</li> <li>• Require all equipment operations to occur during daytime hours to minimize effects of local inversions;</li> <li>• Equipment operations shall be in accordance with all Federal and State air emission and performance laws and standards.</li> <li>• Vehicles or equipment with excessive emissions or discharging black smoke will be removed from operation immediately and may not be used until appropriate maintenance and repairs have corrected the emissions problem.</li> </ul>	
<b>VISITOR EXPERIENCE</b>		
<b>MM-VEX-1</b> Non-Hazardous Solid Waste Management Measures	<p>Waste, trash, and debris shall be controlled at all times and disposed in authorized containers in the Contractor's staging area.</p> <p>All sanitary waste (garbage) must be disposed of in approved, bear-proof disposal bins. Provide lockable, bear-proof dumpsters with lids for waste (garbage) storage. Lids shall be equipped with carabineers/heavy wire lid locks. Verify that dumpster lids are secure at close of work each day. Construction debris (rubbish) may be stored in unlidded dumpsters or construction debris truck/trailers and removed on a regular basis. Do not mingle sanitary or green waste with construction debris.</p> <p>All large, normally open top, waste bins or dumpsters shall be lidded and clearly marked "No Food or Trash".</p> <p>All construction personnel shall adhere to park regulations concerning food storage and refuse management.</p> <p>The Contractor shall designate an employee to police the work site daily for waste, wrappers, food packaging and the like. All waste shall be picked up and disposed of in lidded bear-proof dumpsters. Green waste shall be segregated from other non-green waste for processing at disposal site.</p> <p>Burying or burning of trash and debris on-site is not permitted. All un-used materials, trash, and debris shall be the property of the Contractor and shall be transported outside of the YNP boundary for disposal in accordance with law.</p> <p>Remove debris from permanently closed spaces prior to enclosing them.</p> <p>Properly secure trash during the workday and remove all trash from site at the end of each workday</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
MM-VEX-2 Scenic Resource Protection	Fence construction staging areas and construction activity areas to visually screen construction activity and materials. Consolidate construction equipment and materials to the staging areas at the end of each work day to limit the visual intrusion of construction equipment during nonwork hours.	Yosemite National Park; Contractor
<b>TRANSPORTATION</b>		
MM-TRA-1 Traffic Control Plan	<p>Contractor shall prepare a Traffic Control Plan. This plan shall include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>• Maps showing how any detour routes will be signed and controlled.</li> <li>• Submission of specific street closure and detour plans for each segment of the project no less than 3 weeks prior to beginning construction on any segment.</li> <li>• Description of how Contractor shall provide for the protection of pedestrians and bicyclists, and safe vehicle passage through the use of signs and flag persons. In addition, address how access for emergency vehicles, chain-up areas and snow plow turn around areas, police, rangers, fire and disaster units shall be maintained at all times.</li> <li>• Show how any detour routes will be signed and controlled. Furnish and install all signs. Provide flag persons as required.</li> <li>• Revise and update the Traffic Control Plan to reflect changes in the project schedule or sequence of work, as required.</li> <li>• Show measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud and dust transported onto paved public roads by vehicles or runoff.</li> <li>• Revise and update specific Traffic Control Plan to reflect changes in the project schedule as required, or to accommodate the traffic control plans of other projects concurrently under construction in the project vicinity or the Yosemite Valley.</li> <li>• The YNP Project Manager will provide temporary traffic routing and control information from other on-going or planned projects that may affect the Contractor's Traffic Control Plan. The Contractor shall accommodate the information from these other traffic control plans as necessary and bring any conflicts to the attention of the COR immediately.</li> </ul>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-TRA-2</b> Road Closure Traffic Control and Detour Plans contents	<p>Prepare and submit specific Road Closure Traffic Control and Detour Plans for each area of the project not less than 3 weeks before beginning construction on any segment. Provide for the following:</p> <ul style="list-style-type: none"> <li>• Temporary closure of both lanes of traffic (subject to the requirements listed herein) shall be limited to periods of 20 minutes maximum. Requests for additional closure periods shall be submitted in writing to the Contracting Officer a minimum of 7 days prior to any planned road closures.</li> <li>• Single lane traffic diversions shall comply with the detail in "Traffic Control System for Two Lane Conventional State Highways" in California Department of Transportation Standard Specifications, Section 02201, Paragraph 1.1 D.</li> </ul>	Contractor
<b>MM-TRA-3</b> Traffic Control Devices	<p>Traffic control devices shall be provided in sufficient quantities and types as required to provide safe and adequate traffic control.</p> <p>During hours of darkness, approved lights and/or flares shall be included, in proper working order, to illuminate signs and hazards and alert approaching traffic.</p> <p>Barricades shall be furnished and maintained along all open trenches in contact with traffic.</p> <p>No work may begin on any day or at any time before traffic control devices have been placed, test driven and, if required, adjusted and revised.</p> <p>All traffic control devices shall be placed in accordance with the Manual of Traffic Controls and favorably reviewed Traffic Control Plan.</p> <p>Locations of devices shall be adjusted to suit the conditions and circumstances of each detour situation.</p> <p>In all cases, signs shall be placed to most effectively convey their messages to approaching traffic.</p> <p>Immediately after traffic control devices have been placed, the detour shall be test driven by the COR and Contractor's representative.</p> <p>Test drive shall include approach to the detour from each possible direction and traversing full length of each detour route.</p> <p>The Contractor shall adjust and revise all traffic control devices as determined to be required by test drive through and shall repeat test drive if determined necessary by the COR.</p> <p>The Contractor shall provide additional traffic control devices if required to maintain flow of traffic through construction operation.</p> <p>The Contractor shall maintain all traffic control devices, at proper locations and in proper working order, at all times during construction operations and whenever a hazard resulting from Contractor's operations exists.</p> <p>The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations.</p>	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-TRA-3</b> Traffic Control Devices (cont)	Traffic control devices shall remain in place at all times required to alert approaching traffic of upcoming hazards. After hazard has been removed, all traffic control devices shall be removed. Signs shall be removed or their messages covered.	
<b>MM-TRA-4</b> Traffic Control Flaggers	The Contractor shall employ flaggers: <ul style="list-style-type: none"> <li>• As required for each specific detour.</li> <li>• At all locations on a construction site where barricades and warning signs cannot control the moving traffic.</li> </ul> Where flaggers are required, they shall be logically placed in relation to the equipment or operation so as to give adequate warning and shall be placed approximately 100 feet ahead of impact point. A warning sign shall be placed ahead of the flagger reading: "Flagger Ahead." The distance between the sign and the flagger should be based on the average traffic speed, allowing approximately 50 feet for each 10 miles per hour. During hours of darkness, flagger stations shall be illuminated such that the flagger will be clearly visible to approaching traffic. Lights for illuminating the flagger station shall receive favorable review by the COR. The flagger shall be provided with and wear a red or orange warning garment when flagging. Flaggers shall be provided with approved hand signs and two way radios for communication. When flagging during hours of darkness, the flagger shall signal with a red light or flare and shall have a belt and suspender harness outside his garment fitted with reflectors or made from reflectorized cloth, unless the garment is well reflectorized in one of these ways.	Contractor
<b>MM-TRA-5</b> Traffic Control and Maintenance	Traffic control and construction operations shall conform to the requirements of California Department of Transportation Standard Specifications, Section 12, except as modified herein. The Contractor shall provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones, flagmen, and other protective facilities and shall take all necessary precautions for the protection and for the convenience and safety of Park employees, public traffic, and Yosemite Concession Service operations. All such protective facilities and precautions to be taken shall conform to the U. S. Department of Transportation, Federal Highway Administration Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI-Traffic Control for Highway Construction and Maintenance Operations, latest edition, and as amended. Provide for the protection of pedestrians, bicyclists, and equestrians at all times. Provide adequate, safe, non-skid bridging material over trenches, including shoring when trenching in pavement areas to handle all types of vehicular traffic. Whenever the Contractor's operations create a hazardous condition, the Contractor shall furnish flag persons and guards as necessary to give adequate warning of any dangerous conditions to be	Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-TRA-5</b> Traffic Control and Maintenance (cont.)	<p>encountered, and shall furnish, erect, and maintain such fences, barricades, lights, signs, and other devices as necessary to prevent accidents and avoid damage or injury to persons. Employ flag persons to direct traffic as required to ensure safe vehicular travel. While on duty, flag persons and guards shall be equipped with orange safety wearing apparel and a paddle-type signal, which shall be clean and in good repair.</p> <p>Provide two-way programmable radios to flag persons if they are not in sight of each other at all times, or if necessary to ensure safe passage of vehicles.</p> <p>Provide, install, and maintain all signs, barricades, posts, guards and notices whenever a road or trail must be completely closed. Note that if posts are installed in ground, Contractor must contact USA-Dig and Archaeological Monitor for clearance to avoid culturally-sensitive areas. Remove or cover signs in conflict with traffic control requirements.</p> <p>Provide for passage and access of emergency vehicles, police, rangers, fire and disaster units at all times. Contractor assumes any and all liability for any damages resulting from failure to provide said access.</p> <p>Replace permanent pavement markings and traffic signs upon completion of each phase of work.</p> <p>At the end of each day's work or as soon as the work is completed remove all traffic control devices no longer needed to permit free and safe passage of traffic. Removal shall be in reverse order of installation.</p> <p>The traveled way shall not be obstructed with material, bedding, trench soil, nor with barricades or excavations. Excavations shall be backfilled, covered with steel traffic plate covers, or otherwise suitably protected so that traffic can pass unobstructed, as required, at night or over weekends and holidays.</p> <p>Temporary road repairs shall include road base and cold mix as specified to maintain a smooth, hard surface. The Contractor shall provide weekend and holiday road maintenance and repairs as necessary.</p> <p>All roads shall be kept open for public travel at all times unless specific written permission to close or restrict the use of a particular road is given by the COR. The Contractor is responsible for snow and ice control within the project limits utilizing NPS approved methods. Permission shall be granted upon approval of the specific Street Closure Traffic Control and Detour Plan for the intended closure. In the event that closing of a particular road is approved, it shall be the responsibility of the Contractor to notify the COR to reconfirm the hours and dates of the street closure and routes of detours at least 7 calendar days in advance of their occurrence, and again to notify the COR when the travel restriction is discontinued.</p> <p>No materials or equipment shall be stored where it will interfere with the free and safe passage of public traffic, and at the end of each day's work and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from that portion of the roadway to be opened for use by public traffic. No material or other obstructions shall be placed within 20 feet of fire hydrants, which shall at all times be readily accessible to the fire department, nor within 10 feet of United States mailboxes. Off-loading of materials at staging area shall be coordinated with the Contracting Officer as necessary.</p>	

Topic	Mitigation Measure	Responsibility
<b>MM-TRA-5</b> Traffic Control and Maintenance (cont.)	Traffic delays due to Contractor's activities and associated traffic control shall not exceed 20 minutes, unless prior written approval has been received from the Contracting Officer. Alternative access for Park visitors to all major features and facilities in the Park shall be maintained using the existing road system. Full access shall be provided year-round to the public for all operating Park facilities (hotels, campgrounds, bike paths, trails, stores, restaurants, museums, restrooms, etc.), unless the project includes closing, rehabilitating or reconstructing those facilities, except trail closures for equipment and material transfer or transport described in Section 01110, Summary of Work.	
<b>CULTURAL RESOURCES</b>		
<b>MM-CR-1</b> Evaluation of Revetment Removal Sites	Prior to any ground disturbing activities associated with revetment, further analysis and possible documentation at each site would be required to ensure protection of historic and cultural resources.	Yosemite National Park; Contractor
<b>MM-CR-3</b> Submittals	Historic Preservation Treatment Program: The contractor shall submit a written plan for each phase or process including protection of surrounding cultural resources during operations. Contractor shall describe in detail materials, methods, and equipment to be used for each phase of work. If alternative methods and materials to those indicated are proposed for any phase of work, contractor shall provide a written description including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this Project. The contractor shall document, through videotape or photograph and submit to the Contracting Officer prior to commencement of work, existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by operations.	Yosemite National Park; Contractor
<b>MM-CR-4</b> Removed and Salvaged Historic Materials	Contractor shall handle removed and salvaged historic materials in accordance with the following: <ul style="list-style-type: none"> <li>• Clean salvaged historic items.</li> <li>• Pack or crate items after cleaning. Identify contents of containers.</li> <li>• Store items in a secure area until delivery to the NPS.</li> <li>• Transport items to storage area approved by Contracting Officer.</li> <li>• Protect items from damage during transport and storage.</li> <li>• Do not dispose of items removed from existing construction without prior written consent of Contracting Officer.</li> </ul>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-5</b> Removed and Reinstalled Historic Materials	Contractor shall handle removed and reinstalled historic materials in accordance with the following: <ul style="list-style-type: none"> <li>• Clean and repair historic items to functional condition adequate for intended reuse.</li> <li>• Pack or crate items after cleaning and repairing. Identify contents of containers.</li> <li>• Protect items from damage during transport and storage.</li> <li>• Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.</li> </ul>	Yosemite National Park; Contractor
<b>MM-CR-6</b> Existing Historic Materials to Remain	The contractor shall protect construction indicated to remain against damage and soiling during historic treatment. When permitted by Contracting Officer, items may be removed to a suitable, protected storage location during historic treatment, and cleaned and reinstalled, as appropriate, to their original locations after historic treatment operations are complete.	Yosemite National Park; Contractor
<b>MM-CR-7</b> Storage and Protection	When removed from their existing location, contractor shall store historic materials within a weather-tight enclosure where they are protected from wetting by rain, snow, or ground water, and temperature variations. Contractor shall secure stored materials to ensure protection from theft. <ul style="list-style-type: none"> <li>• Identify removed items with an inconspicuous mark indicating their original location.</li> <li>• Develop a key plan when many similar items are scheduled for removal and reinstallation.</li> </ul>	Yosemite National Park; Contractor
<b>MM-CR-8</b> Exterior Cleaning and Repairing	Contractor shall conduct exterior cleaning and repair of historic structures in accordance with the following: <ul style="list-style-type: none"> <li>• Proceed with the work only when forecasted weather conditions are favorable.</li> <li>• Not attempt repairs during rainy or foggy weather. Not apply primer, paint, putty, or epoxy when the relative humidity is above 80 percent. Not remove exterior elements of structures when rain is forecast or in progress.</li> <li>• Not perform exterior wet work when the air temperature is below 40 deg F (5 deg C).</li> <li>• Not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.</li> <li>• Not begin cleaning when either the air or the surface temperature is below 45 deg F (7 deg C) unless approved means are provided for maintaining a 45 deg F (7 deg C) temperature of the air and materials during, and for 48 hours subsequent to, cleaning.</li> </ul>	Yosemite National Park; Contractor
<b>MM-CR-9</b> General/Historic Resource Protection	Contractor shall undertake the following historic resource protection measures: <ul style="list-style-type: none"> <li>• Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.</li> <li>• Ensure that supervisory personnel are present when work begins and during its progress.</li> <li>• Protect existing materials during installation of temporary protections and construction. Not deface or remove existing materials.</li> </ul> Obtain Contracting Officer approval prior to attaching temporary protection.	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-9</b> General/Historic Resource Protection (cont.)	Protect landscape work adjacent to or within work areas as follows: <ul style="list-style-type: none"> <li>- Provide barriers to protect tree trunks.</li> <li>- Bind spreading shrubs.</li> <li>- Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.</li> <li>- Set scaffolding and ladder legs away from plants.               <ul style="list-style-type: none"> <li>• Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly.</li> <li>• Notify Contracting Officer immediately of drains or systems that are stopped or blocked. Not begin Work of this Section until the drains are in working order.</li> <li>• Provide a method to prevent solids including stone or mortar residue from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of work performed on corresponding project.</li> <li>• Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.</li> </ul> </li> </ul>	
<b>MM-CR-10</b> Protection During Application of Chemicals	Contractor shall undertake the following during the application of chemicals: <ul style="list-style-type: none"> <li>• Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.</li> <li>• Comply with requirements in Division 01 Section "Temporary Facilities and Controls."</li> <li>• Cover adjacent surfaces with materials that are proven to resist chemical cleaners selected for Project unless chemicals being used will not damage adjacent surfaces. Use covering materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.</li> <li>• Do not clean surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.</li> <li>• Neutralize and collect alkaline and acid wastes and dispose of outside park boundaries.</li> <li>• Dispose of runoff from chemical operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.</li> </ul>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-11</b> Protection During Use of Heat-Generating Equipment	Contractor shall comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used: <ul style="list-style-type: none"> <li>• Obtain Contracting Officer's approval for operations involving use of open-flame or welding equipment.</li> <li>- Notification shall be given for each occurrence and location of work with heat-generating equipment.</li> <li>- Obtain the appropriate permit from the park as required.               <ul style="list-style-type: none"> <li>• As far as practical, use heat-generating equipment in shop areas or outside the building.</li> <li>• Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.</li> <li>• Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.</li> <li>• Remove and keep the area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.</li> </ul> </li> <li>- If combustible material cannot be removed, provide fireproof blankets to cover such materials.</li> </ul>	Yosemite National Park; Contractor
<b>MM-CR-12</b> Protection During Use of Heat-Generating Equipment	<ul style="list-style-type: none"> <li>• Where possible, furnish and use baffles of metal or gypsum board to prevent the spraying of sparks or hot slag into surrounding combustible material.</li> <li>• Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.</li> <li>• Inspect each location of the day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.</li> <li>• Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, shield the individual heads temporarily with guards.</li> </ul>	Yosemite National Park; Contractor
<b>MM-CR-13</b> Historic Preservation Treatment Procedures	Contractor shall undertake the following historic preservation treatment procedures: <ul style="list-style-type: none"> <li>• Follow the Secretary's Standards for Historic Preservation</li> <li>• Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.</li> <li>• Use reversible processes wherever possible.</li> <li>• Use traditional replacement materials and techniques if possible. New work shall be distinguishable from old work and original materials and techniques.</li> <li>•</li> </ul>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-13</b> Historic Preservation Treatment Procedures (cont.)	<ul style="list-style-type: none"> <li>Record the existing condition before commencing with repair work; document with preconstruction photos, sketches and field notes. Record repair work during construction with periodic construction photos and daily inspection reporting. Photo documentation is specified in Division 01 Section "Photo Documentation For Historic Preservation Projects".</li> <li>Prohibit smoking by personnel performing work on or near historic structures.</li> <li>Notify Contracting Officer of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.</li> </ul> <p>- Do not proceed with the work in question until directed by Contracting Officer.</p> <ul style="list-style-type: none"> <li>Where Work requires existing features to be removed, cleaned, and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.</li> <li>Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish them from original materials. Record the legend of identification marks and the locations of these marks on Record Drawings.</li> <li>When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid over-cleaning to prevent damage to existing materials during cleaning. Only the gentlest methods available should be attempted. Initiate cleaning using hand cleaning methods before introducing power cleaning methods and equipment.</li> </ul>	
<b>MM-CR-14</b> Plan-Specific Programmatic Agreement	Following agreement on the assessment of adverse effect to historic properties, the NPS and relevant consulting parties have engaged in consultation to develop measures to minimize or mitigate adverse effects pursuant to 36 CFR Part 800.6. Where appropriate, the results of that consultation have been documented in the plan-specific Programmatic Agreement (see Appendix I). This agreement may include treatments established by the ACHP under 36 CFR Part 800.14(d) and may also defer to or build upon the 2008 Nationwide PA that streamlines the Section 106 process for actions not affecting or not adversely affecting historic properties. This agreement also diagrams the NHPA review process for actions requiring phased identification and/or phased assessment of adverse effects. Additional minimization and mitigation measures will be developed through this tiered compliance process.	
<b>MM-CR-15</b> Archeological Resources	Train all members of the restoration/construction teams in proper notification of inadvertent discovery of archaeological resources. Training would involve information regarding the types of archeological materials that are likely present in the specific project area, how to identify archeological materials, and the procedures for contacting the appropriate parties in the event that archeological materials are encountered during restoration/construction activities. All restoration/construction personnel would be required to participate in the training, and written guidelines would be prepared and distributed to aid in identification of archeological materials and to inform workers of the procedures to follow in case of a discovery or potential discovery. If buried	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-15</b> Archeological Resources (cont.)	<p>archeological resources such as flaked stone or groundstone, historic debris, building foundations, midden soils or human bone are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within a 100-foot radius of the find until a qualified archeologist can assess the significance of the find.</p> <p>Inadvertent discoveries would be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). The archeological resource would be assessed for its eligibility for listing on the National Register in consultation with the SHPO and representatives of traditionally associated American Indian tribes and groups (if it is an American Indian archeological site), and a determination of the project effects on the site would be made. If the site would be adversely affected, a treatment plan would also be prepared as needed during the assessment of the site's significance. Assessment of inadvertent discoveries may require archeological excavations and/or archival research to determine resource significance. Treatment plans would fully evaluate avoidance, project redesign, and data recovery alternatives before outlining actions proposed to resolve adverse effects.</p> <p>If human skeletal remains are encountered, protocols under federal and state law would apply. All work shall stop in the vicinity of the discovery, and the find would be secured and protected in place. The appropriate county coroner (Mariposa or Merced) and Park Archeologist would both be immediately notified. If analyses determine that the remains are American Indian, and that no further coroner investigation of the cause of death is required, the coroner would then be required to contact the NAHC (pursuant to Section 7050.5[c] of the California Health and Safety Code) and the County Coordinator of Indian Affairs. The remains would also be treated in accordance with the Native American Graves Protection and Repatriation Regulations at 43 CFR 10.4 (Inadvertent discoveries).</p>	
<b>MM-CR-16</b> Ground Disturbance and Testing	<p>Management actions involving moderate to severe ground disturbance (trail reroutes; formalization of social trails; excavations for subsurface utilities; development of campgrounds; removal of abandoned infrastructure and/or facilities, construction of buildings, structures, parking lots, and roads; topographic recontouring; decompaction and plant salvage; and actions that may focus visitor use at areas with sensitive surface resources) within or adjacent to the boundaries of known archeological sites shall be preceded by intensive surface survey and/or controlled subsurface testing, as determined appropriate given past studies and findings.</p> <p>Initial limited testing shall be conducted in the area(s) proposed for ground disturbance, to first determine if the presence of site components can be verified. If so, the methods of achieving the proposed action may be modified and/or relocated, if possible. If effects could not be avoided, archeological treatment measures would be site-specific and contingent on previous studies' results and the level of work proposed.</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-17</b> Ground Disturbance and Monitoring	<p>A Government provided Archeological Monitor, and as necessary, Native American Monitor, will observe all ground-disturbing site work, including construction of temporary facilities at all culturally sensitive areas, from a safe location mutually agreed on by Contractor, Contracting Officer and Monitors. As new ground is broken, Monitors will examine excavated materials, using construction layout centerline and perimeter staking as a reference point to record locations of findings. Monitoring may also be included as part of a treatment plan for individual resources following initial testing as per MM-AR-2</p> <p>Prior to construction, mark with flagging all sensitive cultural resources to be protected within the project area identified per the requirements of the plans and specifications. Proper placement of flagging shall be verified by the Contracting Officer. Upon verification, erect necessary fencing to identify and protect cultural resources from disturbance.</p> <p>Do not begin ground-penetrating work such as excavation, trenching, drilling, or stump and root removal in culturally sensitive areas without the presence of Archeological Monitor, and if required, Native American Monitor.</p> <p>The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. If the monitor determines that any portion of the proposed action could have an adverse effect on the site, alternative methods of accomplishing the action shall be discussed with the restoration personnel. Restoration activities within site boundaries shall be conducted using manual tools rather than mechanized equipment whenever possible, and no stock animals or wheeled vehicles used for transport of workers and tools shall be allowed within 10 meters of the known site boundary.</p> <p>If Archeological Monitor or Native American Monitor discovers resources, immediate relocation of the work to a non-sensitive area may be required to allow Monitors to take soil samples and record resources. While Monitors are documenting resources in sensitive areas, Contractor shall relocate work to non-sensitive areas.</p> <p>If an Archeological Monitor requires access to a construction area the contractor shall furnish safe access, free from recognized hazards, to enable the monitor to complete his/her duties. This will commonly involve trench access when soil sampling is deemed necessary by the Archeologist.</p> <p>If resources are discovered while Monitors are absent, stop work immediately and report the discovery to the Contracting Officer.</p>	Yosemite National Park; Contractor
<b>MM-CR-18</b> Ground Disturbance and Monitoring	<p>Stop Work: Cease all activities in the area of discovery and protect the resources discovered. In the event the discovery represents human remains or any objects subject to the Native American Graves Protection and Repatriation Act (NAGPRA), the NPS will follow procedures outlined in NAGPRA regulations. This will require a stoppage of work in the area of work for a minimum of 30 calendar days.</p>	Yosemite National Park; Contractor

Topic	Mitigation Measure	Responsibility
<b>MM-CR-18</b> Ground Disturbance and Monitoring (cont.)	In the event of an inadvertent discovery of Cultural Resources, be prepared to stop work and continue in other areas. The Contractor shall plan, schedule, and execute the work to prevent stoppages at one area from stopping all work at the construction site.	
<b>MM-CR-19</b> Daily work schedule	A Daily Work Schedule is required for all work occurring within archeologically sensitive areas. Include all work that is to occur within the area and key the schedule to the drawings to include the following: <ol style="list-style-type: none"> <li>1. Starting and ending dates of ground-disturbing construction.</li> <li>2. Locations of temporary facilities, such as barriers, field offices, staging areas, sanitary facilities, borrow pits, and haul and access roads.</li> <li>3. Types of construction, such as clearing, topsoil stripping, structure or trench excavation, landscaping, and post construction clean-up.</li> <li>4. Methods and equipment used for each type of construction.</li> <li>5. Plan for relocating work in the event of temporary work stoppages at each archeologically sensitive area</li> <li>6. A permit is required for any archeological investigations (e.g. excavation, shovel testing, coring, pedestrian survey, underwater archeology, rock art documentation, or other types of reconnaissance including the archaeological monitoring of construction) carried out on parklands by non-NPS personnel, unless carried out under a contract or a cooperative agreement specifically written for archeological investigations. Permits are issued under the Archaeological Resources Protection Act of 1979 (ARPA). The NPS does not issue a permit for archeological investigations carried out by NPS archeologists, or to archeologists working on NPS archeological projects under a contract or cooperative agreement.</li> <li>7. Applicants should submit a Permit Application (DI Form 1926 (Rev Sept 2004) OMB No. 1024-0037, approved through 1/31/2008 – the Permit Application form is available in pdf format) to the manager of the park in which they propose to work; or to the regional director, with a copy to the park manager.</li> </ol>	Yosemite National Park; Contractor
<b>MM-CR-20</b> Consultation with American Indians	The NPS and traditionally-associated American Indian tribes and groups will continue to collaborate on resources management and historic preservation activities guided by existing cooperative agreements to ensure that adverse effects to historic properties with traditional religious and cultural significance can be avoided.	National Park Service and traditionally-associated American Indian tribes and groups

Topic	Mitigation Measure	Responsibility
MM-CR-21 Section 106 Compliance	Identification, evaluation, and assessment of effects to be determined for projects/actions assigned to Category 3 in Exhibit 6 of the 2014 <i>Programmatic Agreement Among the National Park Service at Yosemite National Park, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Compliance with Section 106 of the National Historic Preservation Act for the Merced Wild and Scenic River Comprehensive Management Plan</i> .	National Park Service
MM-CR-22 Inadvertent Discovery of Historic Properties or American Indian Human Remains	In accordance with the 2014 <i>Programmatic Agreement Among the National Park Service at Yosemite National Park, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Compliance with Section 106 of the National Historic Preservation Act for Merced Wild and Scenic River Comprehensive Management Plan</i> ; protocols and requirements for Inadvertent Discovery of Historic Properties or American Indian Human Remains shall be incorporated into all construction requirements documents (plans and specifications).	National Park Service

# DETERMINATION OF NO IMPAIRMENT

## BRIDALVEIL FALL REHABILITATION PLAN ENVIRONMENTAL ASSESSMENT

April 2018

This document evaluates and determines whether the Selected Action in the *Bridalveil Fall Rehabilitation Environmental Assessment (Bridalveil Fall EA)* will result in impairment to park resources or values. This evaluation is directed by provisions of the National Park Service (NPS) Organic Act of 1916 (16 U.S. Code, Section 1) and the NPS General Authorities Act of 1970 (16 U.S. Code Section 1A-1), including 1978 amendments. Per *NPS Management Policies* (2006) Section 1.4.5, an impact is more likely to constitute impairment when it affects resources and values whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park
- identified as significant in the park's general management plan or other relevant NPS planning documents

An impact is less likely to constitute impairment when it is an unavoidable result of a necessary action to preserve or restore the integrity of park resources or values and it is not possible to mitigate the effects. Park resources and values subject to the no-impairment standard include:

- the scenery, natural and historic objects, and wildlife of the park, and the processes and conditions that sustain them. This includes, to the extent present in the park, the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals
- appropriate opportunities to experience enjoyment of the above resources without impairing resources
- the park's role in contributing to the national dignity, the high public value and integrity, the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system
- additional attributes encompassed by the specific values and purposes for which the park was established

## DESCRIPTION OF PARK PURPOSE AND SIGNIFICANCE

In 1864, the U.S. Congress passed landmark legislation that granted to the State of California the Yosemite Valley and the Mariposa Big Tree Grove (Act of June 30, 1864, 13 Stat., 325). Both areas were set aside "... for public use, resort, and recreation ... inalienable for all time." In fall of 1890, Congress created Yosemite National Park, directing the Secretary of the Interior to provide for the "preservation from injury of all timber, mineral deposits, natural curiosities, or wonders ... and their retention in their natural condition (26 Stat. 650)." The act excluded Yosemite Valley and the Mariposa Big Tree Grove, leaving them under the jurisdiction of the state of California. A Joint Resolution of congress in June 1906 accepted the transfer of Yosemite Valley and the

Mariposa Big Tree Grove from the state of California to the federal government, subject to the provisions in the 1890 act.

## AMENDING THE 1980 YOSEMITE GENERAL MANAGEMENT PLAN

In 1980, the National Park Service completed a *General Management Plan* (1980 GMP) for Yosemite. The plan has five broad goals:

- Reclaim priceless natural beauty
- Markedly reduce traffic congestion
- Allow natural processes to prevail
- Reduce crowding
- Promote visitor understanding and enjoyment

In 1984, the California Wilderness Act (98 Stat. 1632) officially designated segments of the Tuolumne River in Yosemite National Park as components of the national wild and scenic rivers system. The designated segments of the river include 54 of the 62 miles of the river within the boundaries of Yosemite National Park, including both of the river's primary forks, the Dana and Lyell forks, but excluding the 8-mile segment through Hetch Hetchy Reservoir.

## NO IMPAIRMENT DETERMINATIONS FOR THE SELECTED ALTERNATIVE

Under guidelines promulgated by the October 2011 NPS National Leadership Council, Memorandum L7615 (2310), non-impairment determinations must include a discussion for each impacted analyzed in detail within the *Bridalveil Fall EA*. The discussion should pertain to park resources and values. Per the guidelines, it is not necessary to include visitor experience, socioeconomics, public health and safety, environmental justice, land use, park operations, or similar topics or concerns in the impairment discussion.

## Soils and Geology

Yosemite is an outstanding example of major stages of the earth's geologic history and the geologic processes that formed the Sierra Nevada. The park encompasses geologic features including high alpine peaks, sheer cliffs, massive granite domes, and expansive wilderness. Yosemite Valley contains three of the largest exposed granite monoliths in the world – El Capitan, Half Dome, and Mount Watkins. The Selected Action in the *Bridalveil Fall EA* will not materially affect the world-renowned geological formations of Yosemite National Park.

Project implementation will not require import or removal of substantial amounts of rock or other earth products. All earth-moving activities will remain within the work limits defined in site plans. Crews will salvage and replace topsoil. The NPS will deploy signage, fencing, and formal access points to direct visitors to established routes and trails, away from sensitive soils. The Selected Action will result in local, short-term, soil erosion, soil compaction, and displacement of soil and boulders. The new loop trail will reduce informal trailing and associated soil erosion and compaction in natural areas.

In summary, the project will avoid or minimize impacts to soils to the extent possible. While some localized construction-related adverse effects to soil resources will occur, the project will preserve and protect soils and geologic resources and the purpose, mission, and significance of the park.

## Hydrology, Floodplains and Water Quality

Bridalveil Fall and the braided channels of Bridalveil Creek form the centerpiece of the *Bridalveil Fall Rehabilitation EA* project area. Bridalveil Fall is a prominent waterfall in Yosemite Valley, which contains many of the world's highest known waterfalls. The project area is within the 100-year floodplain. Water quality is good and generally above state and federal standards.

The Selected Action will result in long-term beneficial impacts to hydrology, floodplains, and water quality. Replacement of the existing unpleasant vault toilets with flush toilets is expected to decrease risks to water quality. The park will adjust the east side of the parking lot will above flood levels, improving water quality and wetland function. Bridges and boardwalks on trails will provide visitor access over creeks, waterways, and wetlands. During moderate and high flows, the expanded viewing platform will not substantially impact hydrologic flows more than the existing boulders and trees in the very rough alluvial fan environment. Overall, the project will protect and preserve hydrologic and floodplain resources, water quality, and the purpose, mission, and significance of the park.

## Vegetation

The Selected Action will add 1.38 acres of new impervious surface within the project area to accommodate construction of the new accessible trail, comfort station, and plaza. This will be a direct loss of lower montane broadleaf and coniferous forest. The park will remove additional individual trees to improve vistas and remove selected immature conifer trees beneath mature California black oaks to enhance the health of the oak trees. Trees removed will not be of special status, and they represent a small fraction of the numbers of trees in the project area. The project will avoid or minimize impacts to vegetation to the extent possible. While loss of vegetation will occur to accommodate new trails and comfort station, overall, the project will protect and enhance vegetative resources and the purpose, mission, and significance of the park.

## Wetlands

Under the Selected Action, the park will design and construct pedestrian pathway with elevated portions over wetland drainages to avoid permanent impacts to wetlands. Less than 0.10 acre of Riverine Intermittent wetlands would be impacted with construction of piers to support these pedestrian paths over wetland areas. Imported material to improve the site will be pervious material. There will be no impacts to existing wetland vegetation or hydrologic flows. The small viewing platform constructed to the northeast of Bridge 3 will be within an Ephemeral Other Waters of the U.S. This viewing area will not impact hydrophytic vegetation or hydrologic flows.

Short-term impacts, including trampling, increased sedimentation, and other temporary impacts to wetlands may occur from construction-related activities in the project area. Adherence to mitigation measures that specify conditions for work near wetlands, including fencing and avoidance of aquatic habitats, will minimize impacts. Impacts to wetlands associated with active construction will be local, short-term, and minor or negligible. While some local, short-term, minor, construction-related effects to wetland resources will occur, overall, the project will protect wetland resources and the purpose, mission, and significance of the park.

## Wildlife

Under the Selected Action, local, short-term construction-related impacts on wildlife will occur due to noise, increased human presence, and use of heavy equipment during construction activities. The park will schedule construction to avoid the bird and bat breeding and nesting season, conduct pre-construction surveys for

## Determination of No Impairment

nesting birds so that no removal of active nests will occur, and avoid construction activities at night (or, if night lighting is necessary, lighting will be designed to be minimal, directed downward, and shielded).

Additional trash cans, bear boxes, and restrooms will reduce the human impact on adjacent wildlife habitat. While some local, short-term, minor, construction-related effects to wildlife resources will occur, implementation of standard mitigation measures and avoidance procedures will reduce the potential for disturbance and harm to wildlife. The project will protect wildlife resources and purpose, mission, and significance of the park.

## Special-Status Species

The U.S. Fish and Wildlife Service concurs that the Selected Action may effect, but is unlikely to adversely affect the federally-listed California red-legged frog (CRLF). The parties reached this conclusion based on the following reasons:

- it is unlikely that a CRLF would disperse from the 2018 reintroduction site into the project area
- the project area does not contain suitable breeding habitat, reducing the likelihood that CRLF would occupy the project area
- the proposed mitigation measures further minimize or avoid potential adverse effects to the CRLF.

Impacts to the Mount Lyell salamander during construction will largely be avoided and any adverse impacts will not affect the relative abundance of the local population.

Adverse effects under the Selected Action associated with the active construction will be local, short term, and minor or negligible. Overall, the Selected Action will not result in impairment of special-status species in the Bridalveil Fall project area.

## Scenic Resources

Under the Selected Action, short-term local impacts on scenic resources within the project area will occur during construction due to ground disturbance, intrusive light, presence of construction equipment/vehicles, and presence of personnel. The expanded viewing platform at the base of Bridalveil Fall will be visible from parts of the west trail, but the platform will not silhouette or block views of the fall. There will be long-term beneficial impacts to scenic resources as a result of selective tree thinning to enhance existing views and open additional viewing areas. Proposed improvements and facilities will be compatible with the Yosemite Design Guidelines and the setting and character of the area. Overall, the Selected Action will preserve and protect the scenic resources and the purpose, mission, and significance of the park.

## Historic Resources—Built Environment

There are ten contributing resources to the Yosemite Valley Historic District (2006) within the Area of Potential Effects: Pohono Bridge, the Bridalveil Fall Access Road, Bridalveil Fall Trail, Bridalveil Fall Bridges 1-3, Valley Loop Trail, Southside Drive, and two historic views. Pohono Bridge is also a contributing resource to the Yosemite Valley Bridges historic district (1977). With mitigation and avoidance measures in place, the Selected Action will result in no adverse effects on the Yosemite Valley historic district or the Yosemite Valley Bridges historic district. The Selected Action will not directly or indirectly alter any of the qualifying characteristics of the contributing historic, cultural, or archeological resources in the area of potential effects in a manner that will diminish their integrity of location, design, setting, materials, workmanship, feeling, or association either individually or of the historic and archeological districts as a whole. Overall, the Selected

Action will preserve and protect cultural resources and the purpose, mission, and significance of the park.

## Archeological Resources

Seven archeological sites within the Yosemite Valley Archeological District (1976) are within the Area of Potential Effects, and one additional historic site is potentially eligible. The Selected Action will result in no adverse effects on the Yosemite Valley Archeological District or ethnographic resources, with mitigation and avoidance measures in place. The Selected Action will not affect the use of archeological resources in the park to provide information on human demographics, paleoenvironmental change, cultural chronology, prehistoric economic systems, settlement patterns, sociocultural change, or western hemisphere obsidian studies. Overall, the Selected Action will preserve and protect archeological resources and the purpose, mission, and significance of the park.

## Historic Properties with Religious and Cultural Significance

The NPS consulted with the seven traditionally associated American Indian tribes and groups with ancestral connections to Yosemite National Park lands and resources throughout the design and environmental analysis of the Bridalveil Fall project. The park maintains consultative relationships with seven American Indian tribes and groups, including five federally recognized American Indian tribes.

On May 5, 2017, the park requested tribal participation in the Bridalveil Fall Rehabilitation Project and formally requested identification of historic properties with religious and cultural significance that might be affected by the project. The park and tribes met to discuss the project on June 8, 2017, and conducted a site visit on August 1, 2017. The NPS considered comments received from traditionally associated American Indian tribes and groups throughout the planning process. The Selected Action will not result in impairment of American Indian traditional cultural resources, including tribally-identified, eligible, and listed National Register properties. Traditional use sites and features important for maintaining cultural and spiritual traditions will not be altered. The NPS will continue to consult with traditionally associated American Indian tribes and groups throughout project implementation to ensure that historic properties with religious and cultural significance are not adversely effected.

## FINDING

### *The Bridalveil Fall EA*

With implementation of the Selected Action, there are no foreseeable impacts that will result in unacceptable impacts to any park resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified in the 1980 Yosemite General Management Plan or other relevant NPS planning documents as being a significant resource.

Based upon the analysis contained in the *Bridalveil Fall EA*, consultation required under section 106 of the National Historic Preservation Act, consultation with the U.S. Fish and Wildlife Service, input from subject-matter experts and others with relevant knowledge or experience, and consideration of the results of civic engagement and public involvement, it is the Superintendent's professional judgment that implementation of the Selected Action will result in no impairment of park resources and values.

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