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-SPPM)

FEB 07 2019

Dear Friends of Yosemite National Park:

We are pleased to announce the availability of a finding of no significant impact for the Wawona Wastewater Treatment System Rehabilitation Project. After consideration of the environmental assessment; public, tribal, and agency comments, 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:

- Upgrade the Wawona Wastewater Treatment Plant and associated sewage conveyance systems, and expand treatment capacity in the system
- Improve the existing spray irrigation system at the Big Trees Golf Course used to dispose of treated effluent and construct additional land-based effluent disposal through construction of subsurface disposal trenches in Fairway 7
- Connect the Wawona Campground to central sewage treatment at the Wawona Wastewater Treatment Plant and decommission individual septic systems currently serving campground comfort stations
- Improve floodplain values by removing secondary effluent discharge infrastructure and raise the top elevation of the manhole near the South Fork Bridge
- As part of a future project, replace the South Fork Picnic Area vault toilet with a new flushing toilet restroom

The finding of no significant impact is available at http://parkplanning.nps.gov/WWTP. The National Park Service plans to begin project construction in late summer of 2019.

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. Thank you for your interest and comments throughout the Wawona Wastewater Treatment System Rehabilitation Project planning process.

Sincerely,

Michael T. Reynolds
Superintendent

WAWONA WASTEWATER TREATMENT SYSTEM REHABILITATION PROJECT

FINDING OF NO SIGNIFICANT IMPACT

February 2019

Yosemite National Park

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to select Alternative 2 for the Wawona Wastewater Treatment System Rehabilitation Project and that no significant impacts on the human environment are associated with that decision. The portion of this project that connects the Wawona Campground to the Wawona Wastewater Treatment Plant tiers off of the 2014 *Merced Wild and Scenic River Comprehensive Management Plan Environmental Impact Statement and Record of Decision* (Merced River Plan).

PURPOSE AND NEED FOR FEDERAL ACTION

The community of Wawona is located near the south entrance of Yosemite National Park, and includes the historic Big Trees Lodge and Golf Course, private residences, a commercial store and gas station, and NPS staff housing. The community's sewage is handled primarily at the Wawona Wastewater Water Treatment Plant (WWTP) where it is collected, mechanically treated, undergoes chlorine disinfection, and discharged as tertiary-treated effluent primarily through spray irrigation at the Big Trees Lodge Golf Course. Wawona Campground and a few homes use individual septic systems.

The purpose of the project is to rehabilitate the Wawona Wastewater Treatment System, to comply with permit limitations related to land-based discharge of disinfected tertiary-treated domestic wastewater, and implement actions prescribed in the Merced River Plan.

The Wawona wastewater facilities were constructed over 30 years ago and require rehabilitation to continue to meet demand and permitting requirements. Due to recent changes in permit requirements, the South Fork of the Merced River can no longer be used as a secondary discharge point for treated effluent and upgrades to the capacity of the land-based discharge system are necessary. Furthermore, treatment capacity upgrades are needed to implement actions identified in the Merced River Plan to connect Wawona Campground to the WWTP and decommission campground septic systems.

SELECTED ACTION AND RANGE OF ALTERNATIVES CONSIDERED

The Wawona Wastewater Treatment System Rehabilitation Environmental Assessment (EA), dated November 2018, described and analyzed three alternatives, including a No Action Alternative (Alternative 1) and the following two action alternatives:

- Alternative 2: Hybrid Lift Station Arrangement and Subsurface Disposal Trenches
- Alternative 3: Daisy Chain Lift Station Arrangement and Subsurface Drip Irrigation

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 2 as the Agency's Preferred and Environmentally Preferable Alternative and has selected this alternative for implementation.

Selected Action: Hybrid Lift Station Arrangement and Subsurface Disposal Trenches

The Selected Action will:

- Address deferred maintenance.
- Improve operational efficiency, reliability, and sustainability of the system in a cost effective and environmentally friendly manner.
- Expand system treatment capacity to accommodate service for the Wawona Campground, South Fork Picnic Area, and parcels in the Wawona community.
- Upgrade land-based effluent disposal capacity and eliminate discharge infrastructure into the Merced River.
- Connect Wawona Campground with central sewage treatment at the WWTP and decommission individual septic systems at the campground, some of which are within the 100-year floodplain. Properly treat and dispose of wastewater to protect the health, safety, and welfare of the public and the NPS staff.
- Eventually replace the vault toilet at South Fork Picnic Area with a flushing-toilet restroom, as funding is available.

The Selected Action includes upgrades to the WWTP and sewage conveyance system, connecting Wawona Campground to the WWTP and installation of a sewage conveyance system with a hybrid lift station configuration, replacing the South Fork Picnic Area vault toilet with a flushing toilet restroom, and improvements to the existing effluent spray irrigation system and construction of new effluent disposal trenches at Big Trees Golf Course. Attachment A provides a map of the project area. Table 1 (below) summarizes the project components for the Selected Action. The Selected Action will implement all actions as detailed in Alternative 2 in the EA. No modifications were required to the Selected Action as a result of comments received on the EA. The park plans to begin construction in fall 2019.

Table 1. Summary of Selected Actions

Location	Summarized Actions
Wawona Campground	• Install gravity sewers from restrooms to loop lift stations (~700 linear ft. trenching), and install sewer force mains in roadway (~4,400 linear ft. trenching) • Install 3 lift stations, one for each loop • Horizontal directional drill to install utilities in resource sensitivity area (~800 linear ft.) • Crack, fill, and abandon in place the tanks and pipes of 6 individual septic systems • Stage equipment and materials in campground loops A and B
Wawona Road	• Install sewer force main, electrical, communication, and water lines from Wawona Campground to the junction with Chilnualna Falls Road (8,600 linear ft. trenching) • Decommission effluent disposal infrastructure near the South Fork Bridge • Augment an existing manhole near the South Fork Bridge to raise its top elevation • Replace the vault toilet at South Fork Picnic Area with a 2-stall flush toilet restroom, and install a lift station and sewer force main (~80 linear ft. trenching), as funding is available • Stage construction equipment and materials at the South Fork Picnic Area parking area
Big Trees Golf Course	• Construct a subsurface disposal trench system in Fairway 7 to function when the weather and turf conditions are not favorable for spray irrigation (roughly November to April): o Remove/ store the top 6-10 inches of soil from Fairway 7; re-spread after construction o Temporarily improve an existing path (~600 linear ft.) and construct a temporary access road (~850 linear ft.) for construction access to Fairway 7; lay geobase and road base gravel; minimal grading may also be required o Install bypass to switch flows from the spray irrigation to the subsurface disposal field o Install effluent disposal transmission pipelines (~3,000 linear ft. trenching)

Table 1. Summary of Selected Actions (Continued)

Location	Summarized Actions
Big Trees Golf Course (Continued)	o Install distribution boxes from transmission to distribution pipelines (~25 boxes) o Install distribution pipelines to laterals (~ 3,700 linear ft. trenching)Install laterals pipes to leach effluent into trenches (~6,700 linear ft. trenching) o Install groundwater monitoring piezometers (~15) and/or monitoring wells, water gauge probes (~15), and power/communication conduit (~3,000 linear ft. trenching) o Re-seed fairway 7 and restore turf to playing condition • Replace components of the aging spray irrigation system (~36,000 linear ft. trenching) that uses effluent to maintain golf course turf during favorable conditions (~May to October) o Replace main lines in the same location as the existing ones; install control valves o Replace system laterals/spray heads in similar alignment in sensitive resource areas o Replace system laterals and spray heads with slight alignment deviations when necessary outside of sensitive resource areas to improve irrigation distribution o Install control system power/communication conduit, and satellite controllers (~10) o Replace main line drains with drains that have means to dechlorinate treated effluent o Turf sod will be removed for trenching and replaced afterwards to restore the course; if existing sod is in poor condition, the area will be re-seeded to re-establish playable conditions • Stage construction equipment and materials for work proposed at the golf course • Restore golf course topography, circulation features, turf, and greens to their previous condition, as both historic resources and a golf course, following construction. A specialist in golf course design and architecture will survey course conditions, develop restoration plans, and direct the restoration.
Chilnualna Falls Road	• Install sewer, water, electrical, and communications lines from Wawona Campground to the Main Central Lift Station (~630 linear ft. trenching) • Connect the WWTP to communications equipment near the water treatment plant (~1,200 linear ft. trenching) and Wawona Fire Station (~275 linear ft. trenching) • Improve the Main Central Lift Station: and upgrade electrical system/controls o Install concrete pad (~12x 30 ft.), submersible pumps, and cover at existing wet well o Abandon existing drywell; remove top 10 feet of the manway, backfill to meter vault o Install new valve vault (and associated electrical / communication conduit), meter vault overflow, permanent bypass connection, and force main piping o Install buried emergency storage overflow tank o Install a power pole and concrete pad near the Pioneer Yosemite History Center and install electrical conduit under the Chilnualna Road (~800 linear ft. trenching) • Replace the Main Lift Station o Install concrete pad, wet well, valve vault, meter vault, bypass connection vault, control panel/ weather roof, buried concrete emergency overflow tank, two interconnecting manholes o Connect force main/electrical conduit (~140 linear ft. trenching) to existing system o Abandon existing drywell and wet well; remove existing electrical control panel o Combine storage from new emergency storage tank, incoming manhole, and new lift station wet-well (~3,500 gallons storage)
Chilnualna Falls Road (continued)	o Connect to back-up power generator, install generator plug to accommodate portable generator, and piping for bypass pumping with a portable diesel pump • Stage equipment at an existing disturbed road shoulder along Chilnualna Falls Road (recently used to stage fuels reductions operations) and at the existing maintenance yard.
Wawona Wastewater Treatment Plant (WWTP)	• Expand plant sewage treatment capacity from 105,000 to ~130,000 gallons per day • Construct a 2-story solids handling facility (with screw press, digester, and pump room), truck-port, and retaining wall; improve the access road; remove septage receiving tank • Expand the WWTP control/laboratory building (~750 sq. ft.) for office and meeting space • Replace the existing diesel generator and fuel tank with a propane tank and generator • Rehabilitate headworks • Upgrade septage and grease removal equipment • Install a new screening, washing, and handling system (to replace grit removal equipment) • Rehabilitate control system; provide arch-flash protection, automation, and scalable operations • Pave near the building, replace the chain-link fence with a retaining wall, and construct a French drain along the west side of the building to address water intrusion • Stage equipment and materials in the existing WWTP footprint

OTHER ALTERNATIVES CONSIDERED AND ANALYZED

Alternative 1 (No Action)

Under the No Action Alternative, Yosemite National Park would not rehabilitate, repair, or upgrade the Wawona Wastewater Treatment System, with the exception of emergency repairs and routine maintenance. There would be no improvements to the WWTP treatment capacity and infrastructure, no upgrades to the Big Trees Golf Course disposal system, the park would be challenged to continue meeting WWTP permitting requirements, and the park would not correct long-standing maintenance issues, and Wawona Campground would continue to rely on individual septic system. Maintenance and repair needs would likely increase. Emergency actions to curtail effluent flows may be needed periodically, because the park would not take action to increase land-based effluent disposal capacity and the WWTP is no longer permitted to use the surface waters of the South Fork of the Merced as a secondary discharge point.

Alternative 3 (Daisy Chain Lift Station Arrangement and Subsurface Drip Irrigation)

Alternative 3 includes several actions common to the Selected Action. Actions under Alternative 3 that differ from the Selected Action (Alternative 2: Hybrid Lift Station Arrangement and Subsurface Disposal Trenches) are based on how the lift stations are arranged at Wawona Campground and the method to provide increased land-based effluent disposal capacity at Big Trees Golf Course. Alternative 3 proposes to install subsurface drip irrigation lines around Big Trees Lodge Golf Course in Fairways 7, 4, 8, and 9, with potential expansion into Fairways 1 and 3. At Wawona Campground, this alternative proposes a daisy chain lift station arrangement with five lift stations for sewage conveyance. Individual lift stations for each comfort station in Loop C (C1, C2 and C3) and the comfort station in Loop B would be pumped to the high point between Loop B and Loop A. This alternative would result approximately 6,000 square ft. of ground disturbance (approximately 2,400 square ft. more than Alternative 2).

Preliminary Options Considered But Dismissed

The NPS considered a range of actions when developing the alternatives for the rehabilitation of the Wawona Wastewater Treatment System. Table 2 (below) lists the actions that the NPS analyzed, considered, and dismissed because they did not fully satisfy the objectives of this planning effort.

Table 2: Alternatives Considered But Dismissed

Action	Reason for Dismissal
Relocation of the Main Central Lift Station to site it in an area without resource sensitivities	Potential alternate sites were limited and had resource sensitivities. Constructing a new lift station would result in greater disturbance and potential resource impacts than repairing the existing one. Feasible alternatives exist that meet project goals while reducing impacts.
Repair of on-site septic systems at Wawona Campground	Repair or replacement of existing septic systems with alternate technologies (such as mound systems) presented continued concerns related to treatment of wastewater close to the river and potentially in the floodplain. During floods, the septic systems at the campground could pose risks to human health/safety, and compromise the values of the wild and scenic South Fork of the Merced River.
Install septic tank effluent pump systems to modify existing septic systems at Wawona Campground	The septic tank effluent pumping systems would convey the effluent and leave the solids. This would require continued solids removal by truck to El Portal and poses a risk of spills/accidents and exposure of employees or visitors to sewage.
Individual lift stations for each Wawona Campground comfort station (six) to pump flows to the main central lift station	The individual lift station configuration would require the largest number of lift stations in the campground, resulting in the greatest ground disturbance and associated impacts. Other feasible alternatives exist that meet project goals, while reducing the impacts.

DECISION RATIONALE

The Selected Action best meets the purpose and need of the project while minimizing impacts to cultural resources; biological resources; water resources; and visitor experience, health, and safety. Compared to Alternative 3, disposal trenches are the Selected Action for the Big Trees Lodge Golf Course subsurface disposal system, because they improve operational flexibility and minimize the maintenance requirements. The Selected Action requires less construction disturbance for installation of subsurface effluent disposal capacity than Alternative 3, which would require disturbance in at least four fairways. Per the Selected Action, the three Wawona Campground lift stations would be interconnected one after another in a portion of the system to create a hybrid lift station configuration for sewage conveyance; resulting in the fewest lift stations and the least ground disturbance (2,400 square ft. less than Alternative 3). The hybrid lift station arrangement alternative is better reducing long-term odor, limiting changes to the viewshed, creating reliability and flexibility in system operation, and minimizing the amount of maintenance required.

The Selected Action minimizes construction impacts to cultural and biological resources by minimizing the construction footprint and soil disturbance (fewer lift stations and less golf course disturbance than Alternative 3), and improves these resources by reducing sewage treatment in the floodplain and overland transport of sewage (as compared with the No Action Alternative), and reducing risks of accidental spills into the environment. The Selected Action reduces potential risks to human health posed by sewage handling infrastructure being located in floodplains during large flood events and reduces overland transport of sewage. It also improves visitor experience by minimizing potential closures of park facilities due to inadequate effluent disposal capacity, decreasing odors at Wawona Campground, providing a flush-toilet restroom at South Fork Picnic Area, and improving turf conditions at the Big Trees Golf Course. There will be no adverse effects on historic properties. The Selected Action improves flexibility, efficiency, and scalability of operations, modernizes infrastructure to reduce deferred maintenance, and minimizes future maintenance needs. The Selected Action will result in the greatest benefit to park operations, water resources, visitor experience, health, and safety, while minimizing impacts to park operations, and protecting natural and cultural resources.

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 are not likely to 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 Big Trees Hotel renovations, Merced Wild and Scenic Comprehensive River Management Plan Implementation (e.g. Flat Rock Swimming Area Bathroom and Wawona Old Fire Station Demolition projects), the Camp Wawona Redevelopment Plan, and Wawona Ambulance Bay Construction project.
- The NPS will reduce potential effects on public health and safety through continuing to meet WWTP operational permit requirements, reducing the risk of sewage/effluent migrating into surface waters during large flood events by decommissioning Wawona Campground septic systems, and reducing overland sewage transport (and thus the risk of accidental sewage spills to the environment) due to adding solids handling facilities at the WWTP and replacing the South Fork Picnic Area vault toilet with a flushing toilet restroom.

Based on the following summary of impacts, and as discussed in the EA, the park has determined that the Selected Action (Alternative 2) will not have a significant impact on the human environment.

Cultural Resources

Cultural Resources – Historic Properties in the Built Environment: There are four historic properties within the area of potential effects [the Wawona Hotel and Pavillion (1975; State Historic Preservation Officer concurred with the proposed amendment in 2018), the Pioneer Yosemite History Center (determined eligible for listing on the National Register of Historic Places as a historic district in 2011), and Wawona and Chilnualna Falls Roads (both roads assumed eligible for National Register listing for the purposes of National Historic Preservation Act section 106 compliance)]. The Wawona Golf Course was identified as a contributing site within the proposed amendment to the Wawona Hotel and Pavillion National Register nomination. With resource protection measures (Attachment B) and avoidance measures in place, the Selected Action will result in no adverse effects to the Wawona Hotel and Pavillion historic district (as amended), Wawona Road, Chilnualna Falls Road, or the Pioneer Yosemite History Center 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.

Cultural Resources – Archeology: Nine archeological sites are within the area of potential effects. Of these, seven are contributing and two are considered and treated as being eligible as contributors to the Wawona Archeological District (which was determined eligible for listing on the National Register in 1978 by State Historic Preservation Officer consensus determination). Two additional sites are located within areas immediately adjacent to the work area or where no ground disturbing activities are planned. The Selected Action will result in no adverse effects to the Wawona Archeological District, 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

Cultural Resources – Historic Properties with Religious and Cultural Significance: On April 25, 2017, the park requested tribal consultation on the project and formally requested identification of historic

properties with religious and cultural significance that might be affected by the project. The park and tribal representatives conducted site visits on June 12, 2018, and June 20, 2017, to identify properties with religious and cultural significance. In November 2017, a tribal cultural monitor from the North Fork Rancheria of Chukchansi Indians monitored archeological investigations in support of project design. The park and tribes later met to discuss the project on November 6, 2017, and conducted another site visit on May 16, 2018. The NPS considered comments received from traditionally associated American Indian tribes and groups throughout the planning process. The Selected Action will not adversely affect 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 affected, through further design review and tribal monitoring.

Biological Resources

Habitat: The Selected Action will result in reduced long-term risks to habitat through sewer system upgrades and decreasing the need for overland hauling of sewage. Under the Selected Action, most ground disturbance would occur in disturbed or developed areas, most facilities will be installed underground, surface conditions would be restored, and any new above ground facilities will be located within developed areas. The Selected Action involves removal an estimated 10 trees from the ponderosa pine and Sierran mixed conifer forest. Trenching and excavation may result in cutting tree roots, which could potentially lead to mortality. Implementation of resource protection measures will prevent significant tree mortality and avoid the potential for adverse effects. The Selected Action will not result in a loss of acreage of forest habitat, but may result in negligible tree mortality. Construction disturbance for the Selected Action will result in temporary minor adverse habitat impacts.

Aquatic Resources: The Selected Action will have potential short-term adverse construction impacts on aquatic resources related to potential storm water or nutrient/solids runoff, trenching in the golf course, and the possibility for accidental pollutant introduction. Disturbance of aquatic habitats will be largely avoided by constructing in the existing developed footprint. Under the Selected Action, infrastructure effluent river discharge system would be decommissioned; this will not disturb bed sediments, result in wetland fill, or change river bed elevation. Less than 0.02 acres of wetlands would be disturbed by implementing the Selected Action. Most construction will occur when drainages are typically dry, existing drainage patterns will be maintained, and impervious surfaces will not be significantly increased. The project will not permanently alter or fill aquatic resources. The proposed subsurface effluent disposal flow is negligible in comparison to South Fork Merced River flow. Resource protection measures for storm water and construction management, soil protection, erosion/sediment control, and best practices will be implemented to minimize and avoid impacts to aquatic resources. The Selected Action will not alter hydrologic regimes as ground disturbance and above ground facilities are mostly planned in disturbed/developed areas and infrastructure mostly located underground. Therefore, the Selected Action will result in a negligible effect on hydrology and will not alter aquatic habitat functions.

The NPS evaluated the project in terms of compliance with Section 7 of the Wild and Scenic Rivers Act. Project actions would not take place within the bed and banks of the South Fork of the Merced River or its tributaries, therefore a Section 7 Determination under the Wild and Scenic Rivers Act is not necessary. The NPS is exempted from the preparation of a Wetland Statement of Findings, as the

Selected Action renovates currently serviceable facilities/structures and will not exceed 0.1 acre of minor deviations in the structure's configuration or fill footprint in wetlands due to changes in methods (NPS Procedural Manual 77-1: Wetland Protection, 2016).

Special Status Wildlife: Under the Selected Action, local, short-term adverse impacts on special-status wildlife may 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. Implementation of resource protection measures and avoidance procedures will reduce the potential for disturbance and harm to wildlife. Therefore, adverse impacts to special-status wildlife under the Selected Action will be avoided.

Effects on the California red-legged frog (a species listed under the federal Endangered Species Act), will be discountable or insignificant, and not likely to adversely affect the population.

Special Status Plants: The Selected Action has the potential to result in disturbance of populations of Hall's mule ears, Sierra sweet bay, California sunflower, yellow and white monkeyflower, and bladdernut during trenching or excavation activities at the Wawona Campground and the South Fork Picnic Area. However, disturbance of these special-status plant populations and loss of individuals will be avoided through implementation of resource protection measures and special-status plants in the project area will be flagged and fenced to prevent construction disturbance. There will be no alteration or loss of special-status plants, and the Selected Action will not adversely affect special-status plants.

Invasive Plants: Construction activities that involve earthmoving may create conditions for the establishment of invasive plant populations. Although the golf course will be revegetated, the Selected Action could leave sections of bare ground, which may create habitat for invasive plants to establish. Resource protection measures will be implemented to prevent the spread of invasive plants. All equipment will be cleaned before entry to the park, inspected upon arrival, and washed prior to moving between sites. Any imported fill or erosion control materials will be sourced to be weed free. Soil will not be moved from the golf course to prevent the spread of weeds or nonnative species. Wetland areas would be revegetated immediately following construction. The NPS will treat specific invasive plants prior to and after construction to prevent spread and establishment of new populations. The NPS will survey project areas for a minimum of two years after construction, consistent with the Yosemite National Park Invasive Plant Management Plan Update (NPS 2010). Temporary project related construction disturbance under the Selected Action will have no long-term adverse effects related to invasive plants.

Water Resources

Surface Waters/Groundwater/Water Quality: The project will have a long-term beneficial effect on water quality, surface water, and groundwater due to decommissioning the campground septic systems, replacing the South Fork Picnic Area vault toilet with a flushing toilet restroom, and raising the top elevation of the manhole near the South Fork Bridge. These actions reduce the potential for release of sewage or effluent from these systems during large flood events into the aquatic environment. The increase in land-based effluent discharge provided in the Selected Action will not cause degradation of underlying groundwater or surface waters because the effluent will be tertiary-treated and discharged to land only when soil moisture levels are favorable. The effluent discharged to the golf course is diluted with river water during some portions of the year and an appreciable amount of snowmelt/precipitation migrates to underlying groundwater, providing dilution.

In the short-term, construction will result in disturbed areas subject to wind and precipitation, which may expose surface or groundwater water to contamination. Fill materials imported or excavated may be exposed to storm water and potentially result in contamination of surface water or groundwater. Construction equipment contains pollutants which may accidentally become exposed to storm water runoff or to groundwater, which could result in adverse effects on surface water and/or groundwater quality, although implementation of resource protection measures greatly reduces these risks. The Selected Action will likely result in negligible short-term adverse effects on water quality, surface water, and groundwater.

Floodplain: The Selected Action will require temporary construction disturbance in the floodplain, but most facilities located in the floodplain would be underground and no additional structures or impervious surfaces are proposed. The vault toilet at the South Fork Picnic Area will be replaced with a flushing toilet restroom (future project), which will be a small aboveground facility that should not hinder floodplain function. The project will decommission the effluent discharge infrastructure on the bank of the South Fork of the Merced River, directly benefitting the floodplain. Construction activities are planned to occur during the summer and early fall when drainages are typically dry and precipitation is low. The design of the trenches and directional drilling will allow any subsurface flows to continue unimpeded. The Selected Action will not increase the water surface elevation of the 100-year floodplain or increase flood hazards. The Selected Action will require temporary construction in the floodplain and may result in negligible short-term adverse effects on floodplain values. 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.

Visitor Experience, Health, and Safety

Visitor Experience: The Selected Action will have long-term beneficial impacts on visitor experience because of improved wastewater treatment supporting the recreational facilities, residences, and commercial facilities in Wawona. The Selected Action improves the conditions of Wawona Campground and South Fork Picnic Area by reducing odors, alleviating visual impacts associated with existing portable toilets, and the provision of flush toilets. It also will improve the condition of the golf course turf and remove visual impacts of the effluent discharge infrastructure at the South Fork Bridge. Importantly, the Selected Action prevents potential visitor service disruptions related to wastewater system failures or emergency flow curtailing actions, such as closure of the Wawona Campground, Big Trees Hotel or Golf Course, private vacation homes, or river access.

The temporary closure of recreational facilities and construction disturbances will have a short-term adverse impact on visitor experience for the construction period. The park will implement the project without disrupting the wastewater services. Construction will temporarily impact roadways and traffic (with one-way traffic occurring during utilities installation), but the NPS will maintain vehicular access throughout the construction period. The park will temporarily close Wawona Campground Loop A for approximately two months. In Loops B and C, the park intends construction to occur during the winter closure period (December to March), however weather or other factors may necessitate one to two months additional closure. The South Fork Picnic Area will remain open during construction, but parking may be impacted. Although the EA estimated the golf course closure period to be one year, construction sequencing and conditions such as weather can alter the duration and extent of the closure. The golf course could be closed for approximately two operational seasons or partially closed for a longer duration. The park will begin construction at the

Big Trees Lodge Golf Course in fall 2019. The park will maintain the golf course greens during the closure and restore the course to its original condition after construction.

Health and Safety: The Selected Action has a long-term positive impact on health and safety. It will allow the park to continue meeting the General Order Waste Discharge Requirements Permit and Notice of Applicability, which has a beneficial impact on health and safety because it allows the WWTP to continue treating sewage and wastewater from the community at current and future service levels. In addition, project actions addressing ground water intrusion and project components that allow for the decreased handling or transport of sewage (replacing the vault toilet at South Fork Picnic Area, connecting Wawona Campground to the WWTP, and adding WWTP solids handling capabilities) will improve health and safety for NPS staff, and reduce potential for accidents during overland transport of sewage. The Selected Action provides improved wastewater conveyance and treatment facilities, and increased treatment capacity, which will allow for the decommissioning of septic systems and reduce the risk of possible human exposure to raw or partially treated sewage posed during 100-year flood event. During the construction for the Selected Action, the NPS would maintain roadway access and emergency vehicle access, wastewater services, and implement general construction management measures and best management practices. Therefore, construction would have negligible short-term effects on visitor health and safety.

PUBLIC INVOLVEMENT

Public Scoping

Yosemite National Park conducted a 30-day public scoping period for the Wawona Wastewater Treatment System Rehabilitation Project April 17, 2017 to May 17, 2017. The NPS provided information to the public in the form of an electronic notification; press release; NPS Planning, Environment, and Public Comment (PEPC) website (http://parkplanning.nps.gov/WWTP); and Yosemite National Park website (https://www.nps.gov/yose/getinvolved/wawonawwtp.htm).

The NPS held a public scoping meeting at the Wawona Community Center on April 26, 2017. Nine community members asked questions regarding the capacity of the improved facility, solids handling options, treated effluent disposal options, construction impacts to traffic, and the possible installation of a bathroom at the Flatrock swimming area. There was a suggestion that the new spray irrigation system should allow the concessioner more control over watering and operation. The attendees informed the NPS that they would like to receive information about the project as plans progress and would like to remain involved.

Three comment letters were received during the formal scoping period. The Mariposa County Board of Supervisors recommended that the NPS consider current demands from structures in Wawona, Section 35, as well as the potential ultimate buildout of undeveloped parcels when calculating the additional WWTP capacity. One comment suggested that the spray fields create odor and do not benefit the park, and that the NPS should correct flaws in the new project design. The third comment recommended adding a bathroom at the Flatrock swimming area, which is outside the scope of the project.

The NPS presented the project at two additional meetings in Wawona after the public scoping period ended (the Wawona Property Owners Association on June 3, 2017 and at the Wawona Town Planning Advisory Committee on June 30, 2017). NPS staff described the scope of the project; answered questions; and clarified that the rehabilitation of the WWTP would include additional

capacity to accept flows from parcels in the community currently served by septic systems and from currently undeveloped parcels, considering the ultimate buildout of Section 35 in Wawona.

Public Review and Comment Period

The EA released for public review on November 11, 2018, and the NPS accepted comments through December 9, 2018. The document was available through the PEPC website and hard copies were available as requested. Approximately 45 hard copies were distributed to individuals, agencies, tribes, groups, and organizations. The park accepted comments on the EA through the PEPC website and by U.S. mail. The public review period was announced in a press release, a Yosemite electronic notification, the Yosemite National Park Daily Report, online at the Wawona News website (http://www.WawonaNews.com) and on the Yosemite National Park website. During the review period, the NPS held a public meeting on November 16, 2018, to disseminate information and engage with the public. Following presentations, park staff answered questions clarifying the proposed action. The following questions or comments were provided at the public meeting:

- Concerns regarding the maintenance of the golf course greens during construction
- Concerns regarding the amount of time it will take after construction to rehabilitate the golf course to playing condition
- The qualifications of the party responsible for maintaining the golf course during construction and for post-construction restoration
- Questions regarding how the NPS calculated projected WWTP treatment and disposal needs for capacity of the new system as far as the assumption of how many homes per undeveloped parcel and the number of bathrooms per home used in the calculations
- Concern regarding the engineering and planning of the wastewater system to ensure that the switch over and by passes are well planned to ensure that sewage backups into private residences do not occur (as they had in past system construction)

During the 30-day public comment period, the park received nine correspondences. The planning team considered all comments. No modifications are included in the Selected Action as a result of comments received. A summary of the comments received is provided below:

- Generalized support for the project and the preferred alternative
- The park should include information on returning the golf course to playing condition and the park should include information on what party is responsible for caring for the course greens during construction
- The party responsible for returning the golf course to playing condition should be a professional greens keeper.
- Lack of water will destroy the golf course greens and they will be expensive to replace.
- Check all drains that the contractor pours with concrete for functionality.
- The park should consider using ultraviolet technologies to disinfect effluent; while expensive, it can eliminate the worry of interaction with chlorine. There are also automated aeration systems that can decrease organics in the ammonia nitrogen.
- The park should quickly implement the actions described in the preferred alternative
- We do not support the no action alternative, due to the concern for effluent to migrate into surface/ground water and inadequate protection of the wild and scenic river

- Support for Alternative 2, except for the disposal trenches. We are concerned that the disposal trench system will increase the likelihood of groundwater infiltration of tertiary-treated effluent and may increase groundwater contamination.
- Support for Alternative 3; Alternative 3 would minimize the likelihood of groundwater contamination and have less of an impact on water quality
- Support for resource protection measures for special status wildlife, special status plants and trees, and protection of soils, riparian habitat, and wetlands from project-related activities
- Concern over water shortages, as Wawona already has struggles to meet water demand and climate change may make this worse. Has the water demand for the proposed flush toilet restroom at South Fork Picnic Area been considered? The park should consider water saving fixtures for this restroom.
- Support the removal of the golf course and a contingency plan for effluent dispersal.

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 (USFWS) to ensure any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed species or critical habitat. The NPS generated a list of federal listed species in the project area from the USFWS website on May 31, 2017, and initiated informal consultation on August 29, 2017. The park requested concurrence with a "not likely to adversely affect" determination on the federally listed California red-legged frog in November 8, 2018. The park received a letter from the USFWS dated January 30, 2019 concurring with the NPS determination that the proposed project may affect, but is not likely to adversely affect the California red-legged frog.

U.S. Army Corps of Engineers

The NPS is consulting with the U.S. Army Corps of Engineers (USACE) with regard to wetlands delineation and permit requirements necessary to implement project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The NPS anticipates obtaining a Nationwide Permit under Section 404 of the Clean Water Act and will work with the USACE to obtain the necessary permit prior to implementing the project.

California State Historic Preservation Office

The NPS initiated consultation with the California State Historic Preservation Officer (SHPO) at the Office of Historic Preservation for the Wawona Wastewater Treatment System Rehabilitation Project on April 24, 2017. On June 6, 2017, the SHPO responded acknowledging the initiation of consultation and the park's identification of the undertaking.

On September 26, 2017, the NPS requested review of its determination of the area of potential effects and concurrence with the findings of a draft amendment to the National Register nomination for the Wawona Hotel and Pavilion (National Register #75000223). The amendment to the National Register nomination was prepared to update information in the 1975 National Register nomination and included recently evaluated resources associated with the development of the Wawona Hotel and Pavilion that may be affected by the project. In a letter dated March 7, 2018 the SHPO concurred with the findings of the amendment (including the boundary revision), and offered minor changes for future submittal to the National Register of Historic Places (NRHP).

In a letter dated April 6, 2018, the NPS provided draft plans for the project, as well as information on geotechnical investigations, and additional information regarding the area of potential effects. On June 14, 2018, the park requested SHPO concurrence on a finding of ineligibility for listing in the NRHP for the Wawona Campground and in a letter dated July 24, 2018 the SHPO concurred with the park's finding of ineligibility. In a letter dated August 20, 2018, the park presented an assessment of no adverse effect to the SHPO for geotechnical investigations along Wawona Road and the Wawona Campground Road and requested concurrence. In a letter dated September 18, 2018, the SHPO concurred with the park's assessment of no adverse effect for the geotechnical borings at the campground and along Wawona Road. The park sent a letter dated September 19, 2018 to the SHPO transmitting design development drawings for the project, traditional plant use survey data, and the draft Final Archeological Investigations Report for their review and comment.

In a letter dated October 30, 2018, the park provided the SHPO with an updated description of the undertaking (36 CFR § 800.3), an updated determination of the area of potential effects (36 CFR § 800.4), an identification of historic properties affected (36 CFR § 800.4), and a revision of the Merced River Plan assessment of effect determination (36 CFR § 800.5). At that time the park assessed the project as having no adverse effect to historic properties and requested SHPO concurrence with the assessment. In correspondence dated December 4, 2018, the SHPO concurred with the park's assessment of no adverse effect to historic properties for the project. 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 *2014 Merced Wild and Scenic River Comprehensive Management Plan Programmatic Agreement Among the National Park Service, the Advisory Council of Historic Preservation and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (MRP PA)*, the NPS invited the Advisory Council on Historic Preservation to consult on the project on April 25, 2017. The Advisory Council on Historic Preservation did not request to be a consulting party.

National Trust for Historic Preservation

Consistent with guidance established in the *2014 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 *2014 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.

Central Valley Regional Water Quality Control Board

The NPS was previously permitted by the Central Valley Regional Water Quality Control Board (RWQCB) (Order R5-2013-0092 [National Pollutant Discharge Elimination System] NPDES No. CA0081795) to discharge disinfected tertiary-treated domestic wastewater from the WWTP primarily via spray irrigation at the Big Trees Lodge Golf Course and secondarily (only if certain conditions are met) to the South Fork of the Merced River. This permit expired in September 2018 and the NPS is now operating the WWTP under the General Order Waste Discharge Requirements Permit with a Notice of Applicability specific to the WWTP (Permit No. 2014-0153-dwq-r5289).

The park sent the RWQCB a letter dated July 16, 2018 to inform their office of the park's intent to coordinate National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) compliance for the project. On July 25, 2018 the park received a reply email from the RQWCB requesting that the park send the EA to the State Clearinghouse for adequate public review. The EA was prepared consistent with 14 CCR § 15221 to fulfill California Environmental Quality Act (CEQA) requirements without producing a separate CEQA document. It was sent to the State Clearinghouse and was received on November 20, 2018, for public review. The state clearinghouse confirmed in a letter dated December 11, 2018 that no state agencies provided comments.

In relation to an anticipated USACE Nationwide Permit, the NPS is coordinating with the Central Valley RWQCB to obtain a Water Quality Certification for the project.

Prior to construction, NPS will obtain coverage under the Statewide Construction General NPDES Permit from the Central Valley RWQCB. In compliance with the General Permit, a stormwater pollution prevention plan (SWPPP) would be prepared detailing measures to control soil erosion and waste discharges from project construction areas. All contractors conducting construction-related work would be required to implement the SWPPP to control soil erosion and waste discharges. The general contractor(s) and subcontractor(s) conducting the work would be responsible for implementing all best management practices detailed in the SWPPP.

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[a]). 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 EA. Tribal consultation is summarized below:

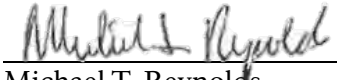
- April 25, 2017 (letter) – NPS initiated Section 106 consultation and requested assistance with identification of historic properties with religious and cultural significance.
- July 2017 (letters) – Formal comments were received from the North Fork Rancheria of Mono Indians and Picayune Rancheria of the Chuckchansi Indians requesting further consultation and involvement in project planning.
- June 12 and 20, 2017 (tribal site visits) – Project site visits with tribal representatives were conducted. Sensitive resources with intrinsic value to American Indians were identified.
- November 6, 2017 (meeting) – The NPS hosted meeting to discuss the project and planned archeological testing with traditionally associated tribes and groups.
- November 2017 (tribal monitoring) – A tribal monitor from the North Fork Rancheria of Mono Indians of California was selected to monitor archeological investigations.

- April 2018 (monthly project spreadsheet) – Information regarding proposed geo-technical investigations to support planning infrastructure at the WWTP and main lift station was disseminated to tribes and groups. No comments were received.
- May 16, 2018 (meeting and site visit) – The park and tribes discussed proposed designs and measures to protect archeological and cultural resources. Tribal representatives supported project objectives, the use of directional drilling to avoid archeological deposits, hand digging to avoid damage to black oak trees, and removing infrastructure from the river/floodplain.
- June 2018 (monthly project spreadsheet) – Information regarding proposed geo-technical investigations for planning the sewer force main and utility alignment within the road prism was disseminated to tribes and groups. No comments were received.
- August 2018 (monthly project spreadsheet) – Information regarding the proposed use of horizontal directional drilling to avoid adverse effects was disseminated to tribes and groups.
- August 15, 2018 (letter) – the Tribal Chair of the Tuolumne Me-Wuk Tribal Council sent a letter of support to the park for the use of directional drilling to avoid adverse effects
- August 23, 2018 (letter) – The park provided the tribes with the Traditional Plant Use Survey and Final Archeological Investigations Report for their review and comment, as well as design development drawings for project actions at Wawona Campground and along Wawona Road.
- September 28, 2018 (letter) – The park provided the tribes with design development drawings for project actions upgrading the lift stations, WWTP, and golf course effluent disposal for their review and comment, as well as draft construction drawings for actions at Wawona Campground and along Wawona road.
- December 5, 2018 (letter) – The park provided the tribes with an updated description of the undertaking and area of potential effects, identification of historic properties, and assessment of no adverse effect, as well as provided a copy of the environmental assessment for their review.

CONCLUSION

Based on the information contained in the EA summarized above, the comprehensive resource protection measures 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. Construction is expected to begin in late summer 2019. In accordance with the National Environmental Policy Act of 1969 and regulations of the Center for Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared.

Recommended:



2/7/19

Michael T. Reynolds — Date
Superintendent, Yosemite National Park

Approved:

2/14/19

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

ATTACHMENT A. FLOODPLAIN STATEMENT OF FINDINGS

For Executive Order 11988 and NPS Directors Order 77-2

WAWONA WASTEWATER TREATMENT SYSTEM REHABILITATION PROJECT

YOSEMITE NATIONAL PARK

Recommended:

12/19/18

for: Michael T. Reynolds, Superintendent, Yosemite National Park Date

Certification of Technical Adequacy and Servicewide Consistency:

1/29/19

Forrest Harvey, Chief, Water Resources Division Date

Concurred:

2/4/2019

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

Approved:

2/14/19

Stan Austin, Regional Director, Pacific West Region Date

INTRODUCTION

The National Park Service (NPS) has prepared the *Wawona Wastewater Treatment System Rehabilitation Project Environmental Assessment* (*Wawona Wastewater System EA*) to upgrade the waste treatment and disposal facilities in Wawona. The purpose of this Floodplain Statement of Findings is to review the *Wawona Wastewater System EA* in sufficient detail to:

- Justify the use of a floodplain location
- 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 floodplain boundary in the Wawona Wastewater Treatment Plant Rehabilitation project area has been defined using publically available floodplain data from the National Flood Hazard Layer database downloaded from the Federal Emergency Management Agency (FEMA) website. The 500-year floodplain has not been formally defined. The NPS has determined that some 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 Wawona Wastewater Treatment System Rehabilitation project area can be categorized as one of two types: (1) *Spring floods* that occur with 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. Data on flooding in the Merced River in the park from 1914 to 1989 suggest that the majority of floods in this system occur in response to spring or early summer snowmelt conditions (Madej et al. 1994). Only about 10% of total floods in the park are winter floods or rain on snow events. However, these events are responsible for the highest floods recorded, especially where warm heavy rains fall on snow in higher elevations. A greater proportion of flooding in the Wawona Meadow portion of the project area (known locally as Big Trees Creek) may be driven by winter storm events because the maximum elevation in this smaller watershed is around 6,500 feet meaning most storms consist solely of rain.

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 very wet and there may be a moderate snow cover at higher elevations, heavy rainfall over the basin can cause large flood runoff. An intense storm with a high freezing elevation may also result in flood runoff from almost the entire basin. Most of the runoff from the Merced River basin occurs from November through July (Madej et al. 1994).

Floodplain Attributes of Big Trees Creek and the South Fork of the Merced River

Floodplains considered in this analysis include those of the South Fork of the Merced River in the project vicinity, which enters Wawona from the east and flows west through Wawona before turning northward near the South Fork Bridge, and the floodplains of Big Trees Creek, a tributary of the South Fork of the Merced River. Big Trees Creek flows through Wawona Meadow and the golf course before its confluence with the South Fork of the Merced River. The floodplain along the

South Fork of the Merced River is an elongated alluvial valley in Wawona. In this area, the river meanders through a floodplain meadow just south of Chilnualna Falls Road, where the channel can shift laterally during large floods (Figure A-1). From here, the river flows westward to confluence with Big Trees Creek and Big Creek in the vicinity of the South Fork Bridge, and it continues to flow through a broad canyon northward along the Wawona Road to the Wawona Campground (Figure A-2). Upstream of the Big Creek confluence, the average annual flow was 174 cubic feet per second between 1958 and 1968, as measured at the Wawona gaging station, with an estimated maximum flow of 15,000 cubic feet per second in December 1955. The 100-year discharge of the South Fork Merced River is estimated to be 19,700 cubic feet per second (PBS&J 2011). The headwaters of the South Fork of the Merced River originate at over 10,000 feet in elevation and the watershed encompasses about 100 square miles

In river reaches where the gradient is gentlest, riparian vegetation (willows and alders) becomes more prevalent. Willows often colonize sandbars that are deposited at the margins of or within the river channel. In the Wawona area reach, the riparian corridor of the South Fork of the Merced resembles that of the main stem of the Merced River as it flows through Yosemite Valley. Also found in the riparian area is Sierra sweet bay (*Myrica hartwegii*), a shrub endemic to the Sierra Nevada. In Yosemite National Park, Sierra sweet bay is found at the average high water line of the South Fork Merced River downstream from Wawona and along Big Creek (NPS 2012). The NPS (2002) considers Sierra sweet bay a sensitive species, and the California Native Plant Society (California Native Plant Society Rank 4.3) identifies the plant as being of limited distribution.

Big Trees Creek is a tributary to the South Fork of the Merced River in Wawona in the vicinity of the golf course. Big Trees Creek flows from the southeast through Wawona Meadow, the golf course, and the project area. Big Trees Creek joins the South Fork of the Merced River near the South Fork Bridge and just north of the golf course, within the project area. The Big Trees Creek watershed originates at 6,500 feet in elevation and is about 5 square miles.

Facilities located within the 100-year floodplain of the South Fork of the Merced River or Big Trees Creek within the project area include the South Fork Picnic Area, a portion of the Wawona Campground, effluent discharge infrastructure and a manhole near the South Fork Bridge, portions of the Big Trees Lodge Golf Course, parts of Wawona Road, and parts of Chilnualna Falls Road (Figures A-1 and A-2). This infrastructure has impacted floodplain habitats and trampling of riparian vegetation and associated erosion also occurs in this area, resulting from use in the vicinity of the Wawona Store and Gas Station area and the Wawona Campground.

POTENTIAL RISKS TO HUMAN HEALTH AND SAFETY

Floods of consequence along the South Fork of the Merced River drainage in the project area and Wawona occur with warning. Flooding within the area typically requires a prolonged period of intense rain for at least 24 hours to create 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. Risks to humans can typically be mitigated by warning and evacuation.

Pedestrian and vehicular access to some areas of the project area is subject to flooding due to extreme weather events. Flooding may also impact trails, bridges, and utilities that provide access to or service the project area. When necessary, the NPS will close areas within Wawona including the 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 project area.

POTENTIAL RISKS TO PROPERTY

Since 1916, Yosemite National Park has experienced 11 winter floods large enough to cause damage to property; however, most damages were sustained in Yosemite Valley. This section describes the

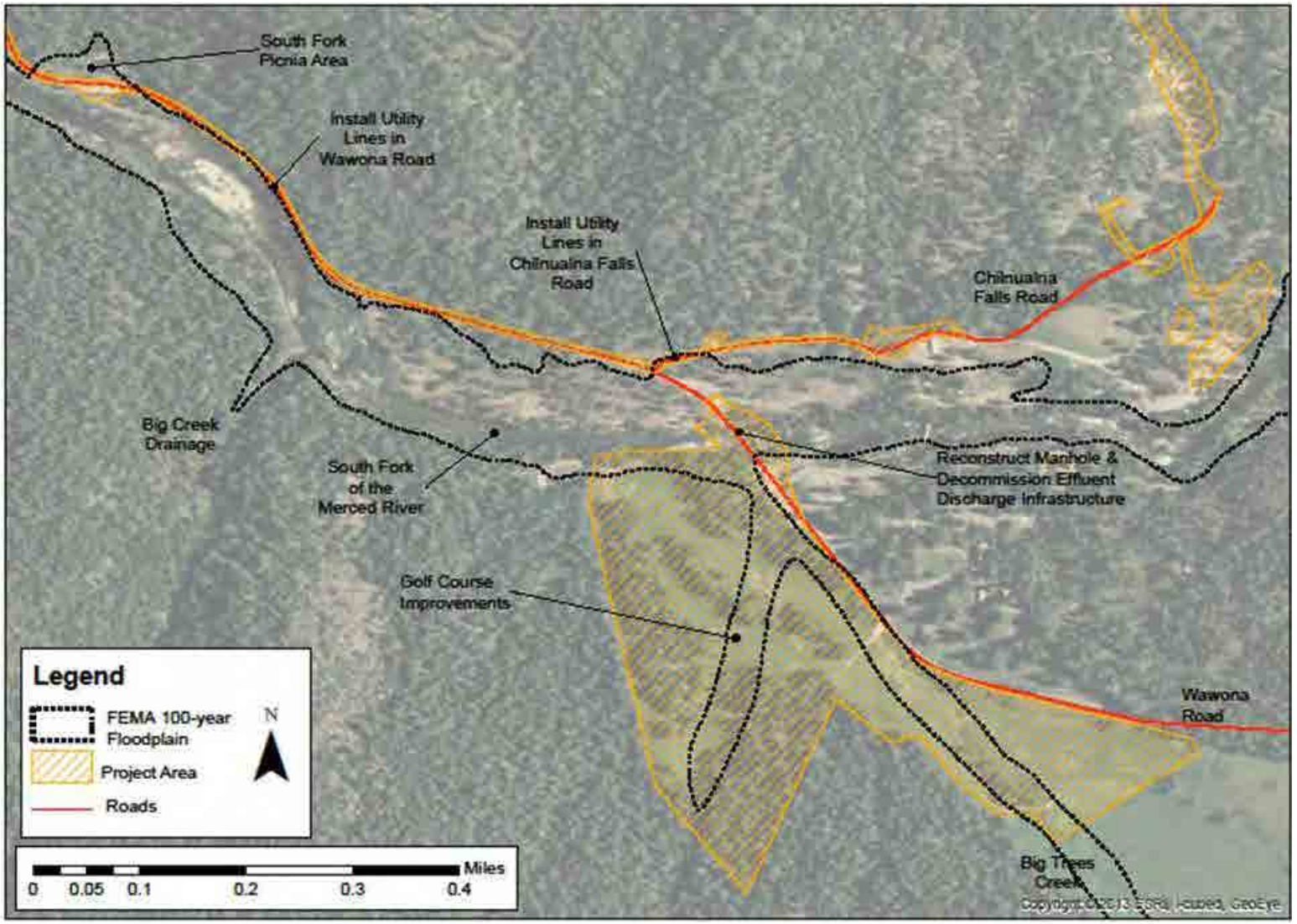


Figure A-1. Project Elements in the Big Trees Golf Course and Along Chilnualna Falls Road

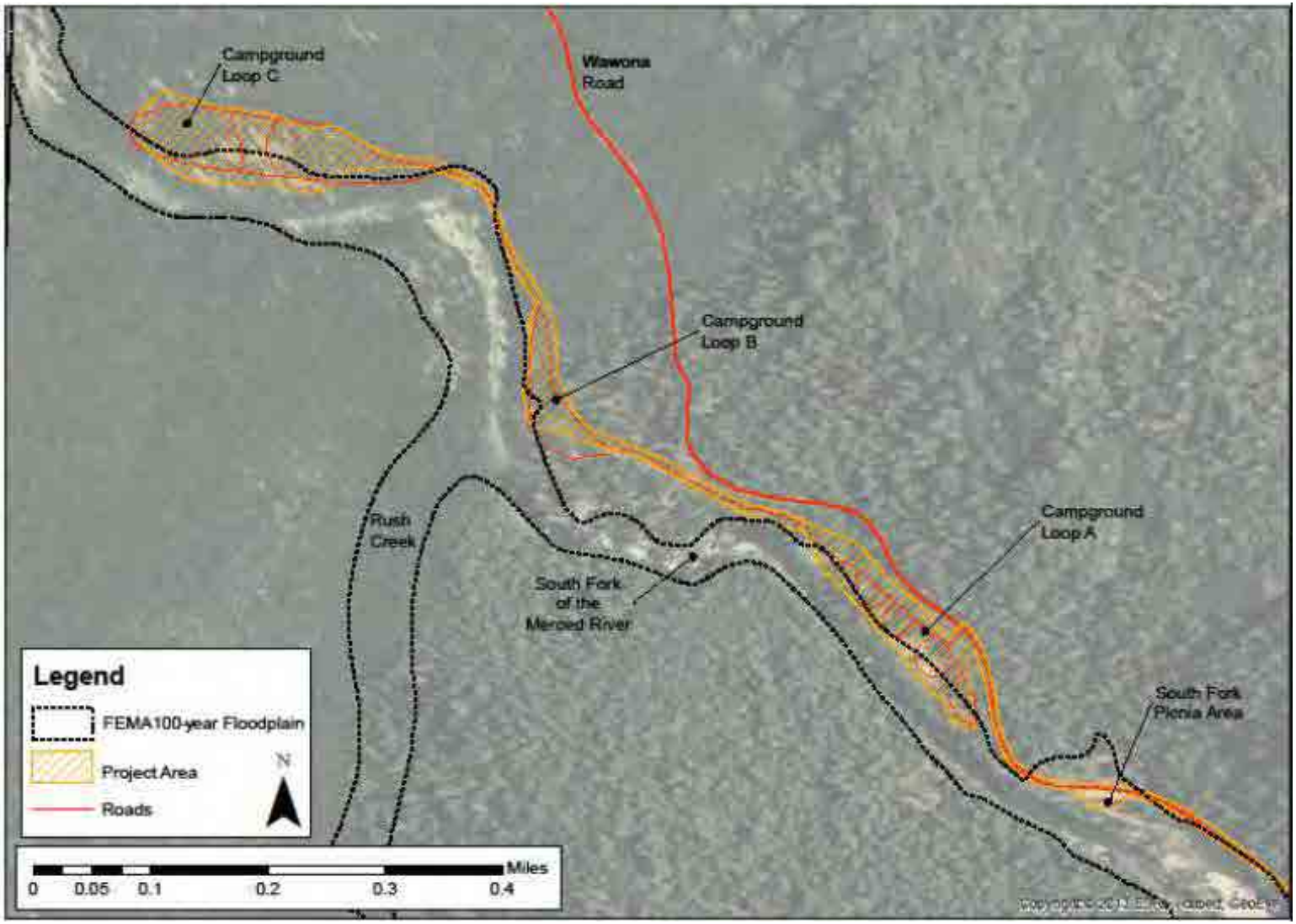


Figure A-2. Project Elements In the Wawona Campground and Along Wawona Road

existing and proposed new structures in the 100-year floodplain described under the Selected Action in the Wawona Wastewater Treatment Plant 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 location or construction of administrative, residential, warehouse, and maintenance buildings and non-excepted (overnight) parking lots, if they lie within the 100-year floodplain.
- *Class II Actions* create "an added disastrous dimension to the flood event." Class II actions include the location 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, if they lie within the 500-year floodplain.
- *Class III Actions* include Class I or Class II Actions that are 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 *Wawona Wastewater Treatment System EA* constitute Class I Actions (Figure D-1 and D-2) (see also Figures 3-2, 3-3, and 3-4 in the EA):

- **Install utility lines in the Wawona Campground Loop Road**. Installation of new utilities (electrical, communications, and sewer lines) would occur in Wawona Campground Loop Road; 100 linear feet of the alignment would run through the 100-year floodplain. There is an existing water line in the Campground Loop Road. During a large flood event, water depth would be expected to be low, but velocities could be swift due to the river morphology forming a bend. The utilities could sustain damage during extreme flood events, though the need for repair would be rare as the paved road above would provide some armoring and the infrastructure would not exert drag on floodwaters passing over the area.
- **Decommission individual septic systems at the Wawona Campground.** The existing leach fields that serve six comfort stations, portions of which are within the 100-year floodplain, would be abandoned in place by filling their lines with concrete. This action would protect public safety by preventing the potential for introduction of sewage into surface waters during large flood events and would greatly reduce the risk of sewer infrastructure being damaged due to large flood events.
- **Install utility lines in Wawona Road and Chilnualna Falls Road**. Electrical, communications, water, and sewer utility lines would be installed within Wawona Road and Chilnualna Falls Road. In Chilnualna Falls Road, 266 linear feet of the utility alignment would be located within the 100-year floodplain and in Wawona Road 545 linear feet of the utility alignment would be located in the 100-year floodplain. Along Wawona Road, an additional 950 linear feet of the utility alignment would be located on the margin of the 100-year floodplain. The project would install a new water line to replace an aging existing water line. Portions of the proposed utility alignments that are within the 100-year floodplain are located in broad, flat areas where water levels and velocities would be low during a large flood event. The utilities would be located underground beneath a paved road, further protecting them from flood damage. Although a large flood event may damage utilities, damages would likely be minor and easily repairable.
- **Install a new restroom at South Fork Picnic Area with a Flushing Toilet.** The NPS would construct a new restroom with two flush toilets at the South Fork Picnic Area to replace the existing vault toilet. The park would construct the restroom using robust building materials suitable for the site conditions, making it flood resistant. A lift Station would be installed to convey sewage into the sewer force main in Wawona Road and on to the Wawona Wastewater

Treatment Plant. The restroom is located about 70 feet from the top of the bank of the South Fork of the Merced River, where flood depth would be expected to be low and flood velocities would be high during extreme flood events. The existing vault toilet would be removed, which would protect public safety by greatly reducing the possibility of raw sewage being introduced into surface waters during a large flood event.

- **Reconstruct manhole near the South Fork Bridge.** An existing manhole in the 100-year floodplain north of the South Fork Bridge would be reconstructed to raise the top of the manhole by three feet. This action elevates the manhole in the floodplain profile, and although not completely removing it from the 100-year floodplain, it would reduce the risk that floodwaters may overtop the manhole in a large flood event. In a flood event, damage sustained would be low due to the low water velocities in the broad floodplain in this area.
- **Decommission effluent disposal pipe and valves to the South Fork of the Merced.** The pipe and valves that allow for the potential release of treated effluent to the South Fork of the Merced River would be decommissioned. The pipe is currently located at the ordinary high water mark of the South Fork of the Merced River adjacent to the South Fork Bridge. The valves are at road-level within the floodplain near the South Fork Bridge. This action eliminates some infrastructure in the 100-year floodplain and is thus beneficial.
- **Renovate the effluent disposal system at the golf course.** Aging spray field components that irrigate the golf course turf with treated effluent would be replaced and upgraded. A new subsurface drainage field would be constructed in Fairway 7. These improvements would replace and re-install roughly 6,625 linear feet of sub-surface pipes 100-year floodplain. The renovations would allow for better monitoring of ground moisture and increased control of the system, which will protect the floodplain by allowing for greater flexibility in operating the disposal system. When flooding is imminent, effluent disposal to these areas would be turned off until favorable ground moisture conditions resumed. Water depths and velocities at these locations during a larger flood event are expected to be low due to the gentle gradient of the golf course, which was previously a meadow. The majority of the infrastructure being installed would be below ground (underground spray field piping and sub-surface disposal system) and resilient to water impacts (due to being effluent conveyance infrastructure). The need to repair portions of the golf course effluent disposal system after extreme flood events is expected to be low.
- **The Big Trees Lodge Golf Course, Wawona Campground, and the South Fork Wawona Picnic Area would remain in the floodplain.** These facilities would not be removed from the floodplain. Evacuation or closures of these facilities could occur with ample warning as flood conditions in this area usually occur with at least 24 hours' notice.

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

Alternatives Considered

The *Wawona Wastewater Treatment System EA* considered one action alternative, Alternative 2, in addition to the Selected Action considered in this Statement of Findings. Alternative 2 would have no differences with regard to the amount of facilities located within the floodplain. The No Action alternative, Alternative 1, evaluated existing conditions in the area with no additional structures in the floodplain.

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.

Installation of utility lines in the Wawona Campground Loop Road, Wawona Road, and Chilnualna Road would greatly improve and protect floodplain values by conveying sewage to a central treatment facility at the Wawona Wastewater Treatment Plant outside of the 100-year floodplain. In addition, a manhole in the floodplain would be reconstructed to elevate its top section, and although not completely removing it from the 100-year floodplain, this would be beneficial in reducing the risk that floodwaters may overtop the manhole in a large flood event. Installing a sewer force main, electrical service, and communications utility lines allows for the decommissioning of leach fields which are partially located within the 100-year floodplain in the Wawona Campground and allows for the replacement of a vault toilet with a flush toilet restroom at the South Fork Picnic Area. These actions would reduce the risk of sewage being released to surface waters during a large flood event.

Replacement of the vault toilet with a restroom with flush toilets at the South Fork Picnic Area would substantially improve natural resource conditions and water quality in the area in the long-term. It would eliminate the need for regular pumping and overland transport of human waste for facility maintenance in this portion of the 100-year floodplain. It would also reduce the risk of human waste being introduced into surface water during a large flood event at the South Fork Picnic Area.

Infrastructure would be reduced in the floodplain, which would have a beneficial impact on floodplain values. The project would decommission leach fields at Wawona campground, as well as the piping and valves that have the ability to release effluent into the South Fork of the Merced River (although the Wawona Wastewater Treatment Plant is no longer permitted to discharge treated effluent to the river). None of this infrastructure is above ground, and no impacts to natural floodplain functions would be impacted by decommissioning and abandoning the infrastructure in place.

Renovation of the effluent disposal system at the golf course would have no impacts on floodplain values, as the park would reconfigure the spray irrigation system in a similar alignment to the current infrastructure and the disposal field would be constructed out of the floodplain.

Portions of the Big Trees Lodge Golf Course, Wawona Campground, and the South Fork Wawona Picnic Area would remain in the floodplain; these facilities would result in only minor to minimal interference with potential flood flows.

JUSTIFICATION FOR THE USE OF A FLOODPLAIN

Although components of the project remove or decommission infrastructure located in the 100-year floodplain, portions of the project would also install, retain, or improve infrastructure located within the 100-year floodplain. Overall, the proposed project actions will improve the conditions within the floodplain as compared to current conditions.

Installing a sewer force main (and associated utilities) from Wawona Campground to the Main Central Lift Station to connect the campground with central sewage treatment at the Wawona Wastewater Treatment Plant requires crossing the floodplain, and locating the infrastructure outside of the floodplain is unavoidable. These utility lines would be located under the existing roads and only intersect the floodplain in a few short segments. The proposed action would enhance floodplain values as compared to existing conditions by allowing for the decommissioning the campground septic systems, which now treats sewage partially within the 100-year floodplain. The Wawona Campground would remain in the floodplain; the facility is currently in use and offers a unique recreational experience in the Wawona area.

The project proposes to install a new double stall flush-toilet restroom and lift station at the South Fork Picnic Area to replace the existing vault toilet located within the 100-year floodplain. Complete removal of the restroom facility to improve floodplain values was not considered viable, as access to a restroom at this location is important for visitors and removing it would likely result in visitors

inappropriately disposing of their human waste in close proximity to the South Fork of the Merced River. The proposed actions to replace the vault toilet with flushing-toilets and convey the sewage to the Wawona Wastewater Treatment Plant would enhance floodplain values as compared to existing conditions by conveying waste out of the floodplain and eliminating the need for waste handling and overland transportation in this area.

The manhole near the South Fork Bridge is critical infrastructure for the Wawona sewer system in its present location and this it cannot be removed/relocated out of the floodplain, without significant system redesign. The proposed actions would elevate the top portion to decrease the risks of floodwaters overtopping the manhole, improving the floodplain values over the existing condition.

The project would improve the sewage effluent disposal system, partially within the 100-year floodplain, at Big Trees Lodge Golf Course. This effluent disposal system is critical infrastructure, without which the Wawona Wastewater Treatment System cannot function; removing components of this system is not feasible. Portions of the Big Trees Lodge Golf Course would remain in the floodplain. The golf course is currently in use and offers a unique recreational experience in the Wawona area. In addition, the golf course is an important contributing element to the Wawona Hotel and Pavilion National Register Nomination, and its removal or demolition would result in an adverse effect on this historic resource. For these reasons, the golf course facilities would remain in the floodplain.

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 for minimizing flood damage, as contained in the National Flood Insurance Program "Floodplain Management Criteria for Flood-Prone Areas" (CFR 44, 60.3). 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 resource protection measures (Attachment B).

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. Given that flooding within the vicinity of Wawona occurs with at least 24 hours of warning, and that areas suitable for evacuation are located in the adjacent areas of Wawona, these facilities could be easily evacuated in the event of an anticipated flood.
- In order to minimize potential damage to facilities located within the floodplain, prior to an anticipated flood event, any removable facilities that could be damaged by flooding would be removed and stored outside of the floodplain. Minor and localized armoring may be also installed so as to minimize potential damage from debris and floodwaters. Residual flood damage would require intermittent minor repairs to the affected facilities.
- No mitigation is available to offset the potential minor effects of these facilities on floodplain hydrology during flooding events; however, associated effects would be minor.

CONCLUSION

Implementation of the Selected Action in the *Wawona Wastewater Treatment System 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 resource protection 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 *Wawona Wastewater Treatment System EA* to be acceptable under Executive Order 11988 and the NPS Directors Order 77-2 for the protection of floodplains.

REFERENCES

Cardno ENTRIX

2011 Merced River and Riparian Vegetation Assessment. Prepared by Cardno ENTRIX for Yosemite National Park, National Park Service.

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

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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.

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

2003 Director's Order #77-2: Floodplain Management. September 8, 2003.

2004 NPS Procedural Manual 77-2: Floodplain Management. February 5, 2004.

2012 Merced Wild and Scenic River Values Draft Baseline Conditions Report. National Park Service files, Yosemite National Park, CA.

PBS&J

2011 Floodplain Modeling Report Floodplain Mapping of the Merced River in Wawona and El Portal Yosemite National Park, California.

Attachment B
Resource Protection Measures

The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of impacts. To help ensure that field activities protect natural, cultural, and social resources and the quality of the visitor experience, mitigation measures have been developed. The following section discusses mitigation measures that would occur prior to, during, and after construction of specific management actions.

This table consists of relevant mitigation measures from the Merced River Plan Final Environmental Statement and Finding of No Significant Impact (off of which the portion of this project connecting the Wawona Campground to the Wawona Wastewater Treatment Plant is tiered), as well as additional mitigation measures added for this specific project.

Topic	Resource Protection Measures	Responsibility
A. General Construction Management Measures		
A.1 General Construction Management	All Contractor and subcontractor employees shall receive a brief orientation about working in Yosemite National Park prior to actually 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. 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 Yosemite National Park. 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. If deemed necessary, demolition/construction work on weekends or federal government holidays may be authorized, with prior written approval of the Superintendent. 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. 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. Contractor shall verify utility locations by contacting the Underground Services Alert prior to the start of construction. The Contractor shall provide protective fencing enclosures around construction areas, including utility trenches to protect public health and safety. The NPS will apply for and comply with all federal and state permits required for construction-related activities. 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. 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	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
A.1 General Construction Management (continued)	spilled material, evacuation processes, etc. The emergency notification plan will be submitted to the park for review/approval prior to commencement of construction activities. Notify utilities prior to construction activities 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.	Yosemite National Park; Contractor
A.2 Design	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 (www.nps.gov/dscw/design.htm)	National Park Service
A.3 Construction	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).	National Park Service
A.4 Yosemite National Park Design Guidelines	A Sense of Place: Design Guidelines for Yosemite National Park shall be followed to ensure that park facilities are designed to be compatible with the existing resources.	National Park Service
A.5 Design Approvals	All final construction documents (plans and specifications) will be approved by the Park Superintendent prior to implementation.	National Park Service
A.6 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 (www.nps.gov/dscw/design.htm).	National Park Service
A.7 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 (www.nps.gov/dscw/design.htm).	National Park Service
A.8 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 (www.nps.gov/dscw/design.htm).	National Park Service
A.9 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
A.10 Construction timing	The National Park Service will limit the operating period for construction to daylight hours. No on-site work shall be performed between the hours of 7:00 p.m. Friday and 7:00 a.m. Monday, unless approved by the Contracting Officer's Representative (COR). No on-site work shall be performed between the hours of 7:00 p.m. and 7:00 a.m., unless approved by the COR and park Wildlife Biologist; with the exception that work at the Wawona Wastewater Treatment Plant is permissible during night time hours and at the Main Lift Station. No machinery shall be operated in visitor use areas before 9:00 a.m. without prior approval of the COR (or other designee). Visitor Use Areas shall be indicated on contractor drawings.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
A.11 Construction Vehicles and Equipment	Construction vehicles will be confined to established roadways and pull-outs, and pre-approved access roads and turn-outs, and project work areas. All construction vehicles, equipment, and materials shall be parked or stored in designated staging areas or parking areas. Yosemite National Park resources staff (natural and cultural) shall review and approve proposed staging areas prior to use for construction equipment and materials. Construction vehicles and passenger vehicles transporting construction personnel to work sites will observe a 25 mile per hour (mph) speed limit on all roads and access routes in the project area. No off-road travel will be permitted except for equipment and vehicles necessary to carry out the specific construction activities required in the construction footprint. All equipment will be maintained to avoid leaks of automotive fluids, such as fuels, solvents, or oils. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than 100 feet from stream channel and banks. All equipment and fuel stored on-site shall be bermed to contain any spilled material and shall be protected from rain. Berms shall consist of plastic covered dirt or sand bags.	Contractor
B. Soils and Geohazards		
B.1 Soils Management	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 COR. 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. 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 COR (or other designee). **Fungal Pathogens In Soil (Root Rot):** Soil infected with fungal pathogens shall not be imported into areas that are free of the pathogens. Soils at work sites for this project are assumed to be infected with fungal pathogens; the following procedures must be followed: ◢ All plant material used on the project, including sources for turf, must be approved by Vegetation and Ecological Restoration to prevent the introduction of non-native invasive plants, phytopthora or other pathogens. The Contractor will; present the NPS with data, protocols, and testing procedures relating to the prevention of Phytopthora contamination for their proposed plant material (sod, seed, etc) supplier in advance of purchasing any materials by at least 30 days for approval by NPS Botanists or Restoration Ecologists. ◢ Ensure that soil is stored within the construction zone. Should 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. ◢ Clean equipment buckets and tires or hand tools used in areas containing fungal pathogens before moving to or working in unaffected areas. Sterilize saws with a 10% bleach solution or ethanol before using on the project to prevent introduction of root borne pathogens. ◢ Whenever possible, all stumps shall be removed from excavations and disposed of in a legal manner outside of the Yosemite National Park boundary. ◢ 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 its' spread can be managed. ◢ Conifers: Treat all stumps (>6 inches in diameter in recreational use areas, >12 inches diameter in undeveloped areas) with Sporax within a few days of felling the tree. If a stump is ground, it still 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 >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. ◢ 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. ◢ Disturb no more than 15 percent of the roots for any given tree. ◢ Do not over-water oak trees.	Yosemite National Park; Contractor

<table>
<tr><th>Topic</th><th>Resource Protection Measures</th><th>Responsibility</th></tr>
<tr><td>B.1
Soils Management
(continued)</td><td>◢ Do not compact soil within drip lines of the tree.
◢ Treatment of Infected Soils: Remove root material by sifting or sorting soil before backfilling.
◢ Treatment of soils in an annosus zone. Only infected HA areas need to be treated for removal of root material. Standard specification for roots to be removed from disturbed soil: >3 inches diameter or >20 inches in length. Remove ALL stumps from excavation.
◢ Do not move soil from infected areas.
◢ 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
All disturbed soil and fill slopes shall be stabilized in a manner consistent with other provisions of this document.</td><td>Yosemite National Park; Contractor</td></tr>
<tr><td colspan="3">C. Hydrology and Water Quality</td></tr>
<tr><td>C.1
Stormwater Pollution Prevention Plan</td><td>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
Straw Bales
Straw bales are not authorized for use in storm water control at Yosemite National Park. They have the potential to introduce exotic species into the Park environment.
Diversion Dikes
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.
Filter Fabric
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 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:
<table><tr><th colspan="3">Filter Fabric for Silt Screen Fence</th></tr><tr><th>Physical Property</th><th>Test Procedure</th><th>Strength Requirement</th></tr><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-1</td></tr><tr><td>AOS (U.S. Std Sieve)</td><td>ASTM D 4751</td><td>20-100</td></tr></table>
Silt Fence Stakes and Posts
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 by 2 inches when hardwood is used and 4 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.</td><td>Contractor</td></tr>
</table>

Topic	Resource Protection Measures	Responsibility
C.1 Stormwater Pollution Prevention Plan (continued)	**Identification Storage and Handling** Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873. **Maintenance** 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. 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. 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. Concrete wash areas shall be located so they do not drain directly into water bodies. If a concrete wash area drains into a water body, catch basins shall be constructed to intercept sediment before it reaches the channels. Concrete wash areas shall be graded, if necessary to avoid the potential for erosion. **Inspections** 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. 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. 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.	Contractor
C.2 Non-Hazardous Liquid Waste Management	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. 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 COR.	Contractor
C.3 Hazardous Materials/Wastes	Identify potentially hazardous substances to be used on the job site. Identify handling procedures to ensure that hazardous substances are not released into the air, water, or ground. Comply with Federal, State, and local laws and regulations for storage, handling, and disposal of these materials. Storage of hazardous or flammable chemicals in the staging area or elsewhere on the site is prohibited except as approved by the COR. Hazardous materials shall not be discarded into the jobsite debris or waste-disposal facilities. Empty containers shall be removed from the site and disposed of in a manner prescribed by law.	Contractor

Topic	Resource Protection Measures	Responsibility
C.3 Hazardous Materials/Wastes (continued)	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. 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 COR. Before new hazardous materials are brought on site or removed from the site, the MSDS file shall be updated and submitted to the COR.	Contractor
C.4 Spill Prevention and Response Plan (SPRP)	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 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. 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 (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. All Contractor employees are required to be trained in the Spill Prevention Control in accordance with this SPRP.	Contractor
C.5 Hazardous Materials Spill Prevention and Response Plan	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 Yosemite National Park, Federal and State requirements and allows contractors to properly notify officials in the event of an emergency occurring during construction activities. Yosemite National Park requirements include, and the plan shall state, at a minimum: ◢ During non-work operations, stationary equipment shall be parked over specially prepared containment pads designed to trap any leaking oil, fuel, or hydraulic fluids. ◢ 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. ◢ 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. ◢ 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. ◢ 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 COR. ◢ 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 COR (and a copy visibly displayed in work areas on site. ◢ Comply with all applicable regulations and policies during the removal and remediation of asbestos, lead paint, and polychlorinated biphenyls.	Contractor

Topic	Resource Protection Measures	Responsibility
C.5 Hazardous Materials Spill Prevention and Response Plan (continued)	◢ Contractor shall have the COR's and other appropriate Government emergency numbers posted and shall immediately notify the COR and other appropriate Government representative(s) on any accidental release of hazardous substances to air, soil or water. ◢ 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. ◢ Place drip pans under construction vehicles and all parked equipment. ◢ Check construction equipment for leaks regularly. ◢ Refuel vehicles and equipment no less than 100 feet from adjacent creeks, drainages, and storm drains to minimize the risk of run-on, runoff, and spills that could affect water bodies. Conduct fueling in paved and curbed areas to contain spills if this is possible; if not, refuel over drip pans or absorptive mats. ◢ Cover all storm drain inlets when paving or applying seals or similar materials to prevent the offsite discharge of these materials. ◢ Equipment and materials shall be stored at least 100 feet from waterways. No debris (such as trash and spoils) shall be deposited within 100 feet of creeks. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located outside of the stream channel and banks.	Contractor
C.6 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
D. Vegetation and Wetlands		
D.1 Protection from Exotic Plant Species	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. All heavy equipment shall be steam-cleaned or pressure washed to prevent importation of non-native plant species prior to entry to the project area. Wash heavy equipment prior to moving between sites/phases of the project to prevent further spread of invasive plants. 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. 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 COR (or other designee) 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 COR (or other designee) at Contractor's sole expense. Contractor shall minimize ground disturbance to the greatest extent possible. The contractor shall get approval in writing from the COR (or other designee) for fill material that must be used in a way or stored in a location not clearly specified in the contract. 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 COR (or other designee). The Contractor shall submit to the COR a list of proposed sources for imported fill materials requiring certification 30 calendar days in advance of importing material; materials will only be imported from NPS certified weed-free sources. The presence of noxious weed species is grounds for rejection of the source. 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 COR (or other designee)'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).	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
D.1 Protection from Exotic Plant Species (continued)	The Contractor shall not spray any herbicides until approved in writing by the COR. Survey for invasive plants in subsequent years following construction and treat any plants found to prevent the establishment of new infestations. Treat medium and high priority invasive plants prior to and after construction to prevent spread and establishment of new populations in disturbed areas 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: ◢ 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. ◢ 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. ◢ 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.	Yosemite National Park; Contractor
D.2 Vegetation Inventory and Assessment	The project will supply a NPS natural resource monitor to consult on vegetation protection periodically throughout construction. Plant Condition Inventory: The Contractor and the COR (or other designee) 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 COR (or other designee) 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). On-site inventory shall be scheduled in coordination with the pre-construction conference. Avoid construction, trenching, grading, paving, and staging within the drip line of black oaks (*Quercus keloggii*). 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 addition to the measures outlined below. Access to work sites requiring travel through undeveloped areas outside the work limits must be approved by the COR. Contractor should consult with a natural resource specialist when removal or damage of black oaks or large diameter (>40-inch dbh) trees cannot be avoided. Adjust trenches and excavations to keep them beyond tree drip lines where possible. 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. 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. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy vegetation 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. Removal of trees will be performed by Yosemite National Park 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 COR (or other designee) 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.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
D.2 Vegetation Inventory and Assessment (continued)	Minimize disturbance to tree trunks and root zones to prevent damage to trees; avoid disturbance of more than 15percent of a tree's roots. Avoid soil compaction within drip lines of trees and do not pile soil against tree trunks. Maintain original soil topography Adjust trenches and other excavations to keep them beyond the drip line wherever possible. If trenching is proposed with the dripline, it will be done with on-site consultation of a natural resource monitor. Adjust the survey line, as necessary to maintain required clearances. Notify the COR (or other designee) and consult with NPS natural resource monitor on implementing tree and root protections of any proposed trenches or other excavations within the drip line of trees. **Steps to Mitigate Damage to Roots Due to Excavation:** Take steps (as called for below) to mitigate damage to tree roots due to excavation, wherever the following circumstances apply: ◢ Wherever excavation must take place within the drip line of oak trees regardless of diameter. ◢ Wherever excavation must take place within the drip line of trees other than oaks, for all trees 12 inches or larger in diameter. ◢ Trees which are anticipated to meet these criteria and therefore require steps to mitigate damage to roots due to excavation are shown on the drawings. 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:** ◢ 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. ◢ Do not cut roots over 2-inch-in-diameter without approval of COR (or other designee). ◢ 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. ◢ Avoid soil compaction within plant root zones with heavy equipment and vehicles within the project work limits. ◢ Do not cut wheels or make sharp turns with wheeled or tracked equipment in root zones. ◢ Do not pile excavated soil against tree trunks. ◢ Do not mechanically compact soils in undeveloped areas except to meet minimum compaction requirements as approved by the COR (or other designee). ◢ Maintain original soil topography in plant root zones whenever possible. ◢ Preserve tree snags where feasible as potential bat or bird habitat	Yosemite National Park; Contractor
D.3 Plant Appraisal	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 Arborculture'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: ◢ Removal of any tree or shrub. ◢ Pruning or removal of more than 30 percent of a tree or shrub canopy. ◢ Removal or fracture of any limb or trunk that is one of the major structural entities of the damaged plant. ◢ Removal or fracture of any limb greater than 12 inches in diameter. ◢ 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 & Wildlife Service.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
D.3 Plant Appraisal (continued)	◢ Bark damage or removal around more than 30 percent of the trunk circumference. ◢ Trenching or soil disturbance within the critical root zone that is deeper than 1-foot unless shown on the Drawings. ◢ Pruning or removal of vegetation shall be supervised by COR (or other designee). The designated personnel may designate plant species for salvage. When authorized and supervised by the COR (or other designee), the Contractor is exempted from any penalties that might be assessed due to damage to vegetation. 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 COR (or other designee). 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 COR (or other designee). 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 COR (or other designee). Repair to the plant will be at the recommendation of the Yosemite National Park personnel and approval of the COR (or other designee).	Yosemite National Park; Contractor
D.4 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.	Yosemite National Park; Contractor
D.5 Wetlands Regulation	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: 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. 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. Re-grade and restore disturbed areas to preexisting contours to maintain drainage patterns.	Contractor
D.6 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 COR (or other designee).	Yosemite National Park, Project Manager; Contractor
D.7 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 if necessary.	Yosemite National Park
D.8 Special Status Plant Species	Yosemite National Park natural resources staff will flag avoidance zones around special status plant species prior to work. 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	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
D.8 Special Status Plant Species (continued)	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
E. Wildlife and Special-Status Species		
E.1 General Fish and Wildlife Protection	The Contractor and Contractor's employees shall not feed any animals within Yosemite National Park. Contractor shall schedule construction activities with seasonal consideration of wildlife lifecycles (see below sections) 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. Tree removal shall occur between August 15 and October 31 if at all feasible. If this is infeasible, consult with the Terrestrial Ecologist. Night-time work only permitted to occur at the Wawona Wastewater Treatment Plant, with the exception of bypass-pumps which may need to operate at all hours. To avoid impacting reptile and amphibian species, only tightly woven netting or similar material (such as natural fiber rolls and geotextiles) or durable/reusable materials (such as Animex or Ertec fencing) will be used for erosion control. No plastic monofilament netting will be used. **Special Status Species:** 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. If a special status species is encountered within work areas, work crews will stop all activities in the surrounding area with the potential to harass, injure, or cause death of the individual, and contact the Branch Chief of Wildlife or the park Aquatic or Terrestrial Ecologist to select a course of action that will avoid adverse effects to the individual If deemed appropriate by the Park Aquatic or Terrestrial Ecologist, an NPS biologist will conduct a once-a-month survey throughout the active season for special-status species **Contractor Training:** 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 Before the onset of construction activities, a NPS and USFWS–approved biologist will conduct an education program for construction personnel. At a minimum, the training program will include a description of California red-legged frog, western pond turtle, great gray owl, willow flycatcher, all other species listed in Table 3.2-2 of this EA, and their habitats; the potential occurrence of these species within the action area; an explanation of the status of the species and protection under the federal ESA, CESA, and the NPS Management Policies (NPS 2006); the measures to be implemented to conserve these species and their habitats as they relate to the work site; and the boundaries within which construction may occur. **Excavated Pits:** 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. Excavation pits shall have a ramp or incline at either end to allow for human and wildlife escape. Each morning prior to commencing work activities, Contractor shall inspect the site for trapped wildlife in excavation pits and carefully remove the animal, except for California red-legged frog (CRLF), which shall not be captured or handled. If the animal cannot be easily or safely removed, contact NPS wildlife staff immediately at (209)372-0322.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
E.2 Bear Precautions, Human-Wildlife Conflict	Bears may be present at any location within the Yosemite National Park boundaries, including at the project site. The Contractor shall incorporate the following precautions in all activities within the Yosemite National Park boundary. All food, toiletries, and scented items (i.e., bug spray) shall be placed in bear-proof food lockers (also known as, "bear boxes") at the construction site provided by the Contractor. Bear-proof food lockers 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. All food waste and food-related waste shall be disposed of in accordance with Non-Hazardous Solid Wastes requirements described elsewhere within this section. All windows and doors in recreational vehicles or trailers used for lodging or office space shall be closed and latched when not occupied. 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. 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. 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.	Contractor
E.3 Bat Protection Guidelines	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. If bats are detected during reproduction May 15 to August 15 or hibernation periods: October 31 to April 15, 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. 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. Within 30-days prior to initiating ground disturbance (e.g., grading, trenching, excavation) or vegetation removal, a qualified bat biologist shall conduct surveys to evaluate whether habitat that will be affected by the proposed construction activity provides hibernacula or maternity roost habitat for bats. Generally, the survey area shall include the project area plus a 50-foot buffer. Surveys shall be conducted in the fall to determine if roost sites are used as hibernacula and in spring and/or summer to determine if they are used as maternity or day roosts. Surveys shall consist of evening emergence surveys to note the presence or absence of bats and could consist of visual surveys at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts, but are not required. If no bat roosts are found, then no further study is required. Tree removal shall occur between August 15 to October 31 if at all feasible. If this is not infeasible, consult with the park Terrestrial Ecologist. The park Terrestrial Ecologist will conduct bat surveys before any tree removal occurs during this sensitive time period involving roosting/hibernating. If the park Terrestrial Ecologist deems tree removal acceptable, then the ecologist might recommend actions to reduce bat mortality that may include, but not be limited to: Limb trees the day before felling them (or make some other loud noises). Limb and fell trees later in the day when temperatures are above 55 degrees Fahrenheit and the weather forecast for the night is clear. This will allow bats that are not hibernating or that are not in a maternity roost to depart that night and find another roost. If snags can remain in the project site, top snags to ~20 ft. so they can still serve as a bat roost sites.	Yosemite National Park; Contractor
E.4 Bird Protection Guidelines	Beginning in early spring, a park Terrestrial Ecologist 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. If nesting birds are observed (e.g., discovered by workers) that are not special status species, the project manager will notify the park Terrestrial Ecologist who will recommend steps to avoid undesirable impacts to the nest or young. **Great Gray Owls, California Spotted Owl, and other Raptors:** No construction work shall occur at dawn, dusk, or night-time hours, except at the Wastewater Treatment Plant and the Main Lift Station (where night-time work is permissible)	Yosemite National Park, Project Manager

Topic	Resource Protection Measures	Responsibility
E.4 Bird Protection Guidelines (continued)	Construction or staging activities within 0.25 miles of Wawona Meadow that could disrupt great gray owl nesting shall be implemented outside of the great gray owl nesting season (March 1 to July 31); if this is for some reason unavoidable the park Terrestrial Ecologist will be contacted for consultation well ahead of work commencing. All construction fencing along or adjacent to any roadway shall be outfitted with spikes or other devices that prevent large or raptorial birds from using the structure as a perch. If by-pass pumping is required during night-time hours in the vicinity of the Wawona Golf Course or the Main Central Lift Station, it will be staged if to occur between August 1 and February 28. If by-pass pumping must occur between March 1 and July 31, then the planned duration of operation will be minimized and pumps that minimize noise will be selected; plans for the duration of operation and selection of noise-minimizing pumps will be subject to the approval of the park Terrestrial Ecologist at least 30 days before planned operation. Night-time lighting at the Main Central lift station and Wawona Golf course will remain un-changed from pre-construction conditions. **Other Birds:** For any project activity that would occur during the songbird nesting season (May 15–June 30), the park Terrestrial Ecologist shall conduct preconstruction nesting bird surveys. The preconstruction surveys shall be conducted before any activity occurring within 500 feet of suitable nesting habitat for any special-status bird species. Nesting surveys shall be timed to maximize the potential to detect special-status nesting birds, and should be repeated within 10 days of the start of project-related activity. If an active bird nest is found during preconstruction surveys, an appropriate no-disturbance buffer shall be determined by the park Terrestrial Ecologist based on site-specific conditions, the species of nesting bird, nature of the project activity, noise level of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances. Monitoring of active nests by the park Terrestrial Ecologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by the park Terrestrial Ecologist.	Yosemite National Park, Project Manager
E5. General Aquatic Species Protection	The contractor shall fence construction areas adjacent to aquatic habitats to prohibit movement of aquatic species into the construction area and to control siltation and disturbance in aquatic habitats at the discretion of the Aquatic Ecologist. If dewatering becomes necessary, 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. If project construction will occur within 500 feet of favorable aquatic habitat during the Western Pond turtle's (*Emys marmorata*) nesting season (June to August), the NPS biologist shall conduct preconstruction surveys for Western pond turtle, including surveys for nesting habitat and preferred aquatic habitats, and recommend exclusion fencing where applicable.	Contractor
E6. California Red-legged Frog Protection	Preconstruction surveys and surveys during construction activity: Preconstruction surveys for California red-legged frog (*Rana draytonii*) will occur in suitable habitat (standing water, and low gradient streams <4%), both using eDNA and visual encounter survey (day and night) methods. If deemed appropriate by the Park Aquatic Ecologist, an NPS biologist will conduct a once-a-month survey throughout the active season for California red-legged frogs. Contractor will encourage employees to drive slowly on rainy, warm nights (nights where California red-legged frog dispersal is likely). If a California Red-legged Frog is encountered in the project area, all activity in the surrounding area shall stop and the frog shall be allowed to move out of the project area on its own volition. Prior to commencing project activities, the NPS will contact the Fish and Wildlife Service to reinitiate consultation. Under no circumstance shall Contractor personnel nor NPS staff capture, handle, or relocate the frog.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
E7. Fisher Protection Guidelines	In construction or staging zones, conduct remote camera surveys targeting fishers (*Pekania pennati*) to inform proper mitigation actions that would reduce impacts to wildlife as directed by the park Terrestrial Ecologist. Culverts shall not be blocked during construction activities, as they are important for Fisher dispersal and movement through the area. Park biologists will survey the area and designate a buffer around essential habitat elements (e.g., downed logs, hollow trees, etc.) or sign of fisher, and may conduct more intensive surveys if appropriate to determine the presence or absence of active dens or place protective barriers around areas adjacent to the project area that requires special attention as identified by the park, such as sensitive wildlife habitats. The park forester, fire management, and design contractor will consult with the park Terrestrial Ecologist to retain key habitat features for fisher including overhead cover, large diameter snags, large diameter down logs, large diameter live conifer and oak trees with decadence such as broken tops or cavities, root masses, live branches, and multi-layered vegetation. No night work shall occur on project elements on Wawona Road (Highway 41), at the South Fork Picnic Area (Texas Flat), the Golf Course, or the Wawona Campground vicinities. Project activities and staging shall not occur during the sensitive period of March 17 to June 24 (sensitive denning and mating periods) in sensitive habitats designated as avoidance areas as directed by the park Terrestrial Ecologist. Adaptively manage for fishers through continued targeted surveys during key time periods during construction as directed by the park Terrestrial Ecologist. This will include camera monitoring for fisher in sensitive habitat locations as designated by the park Terrestrial Ecologist.	Yosemite National Park; Contractor
F. Lightscapes		
F.1 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: http://www.nps.gov/yose/naturescience/dark-night-sky.htm.	Yosemite National Park; Contractor
F.2 Yosemite National Park Lighting Guidelines	Yosemite National Park Lighting Guidelines 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
G. Soundscapes		
G.1 Construction Work Plan and Noise	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: ◢ Ensure that all construction equipment has functional exhaust muffler systems. ◢ Use hydraulically or electrically powered construction equipment, when feasible. ◢ Locate stationary noise sources as far from sensitive receptors as possible. ◢ Limit the idling of motors except as necessary (e.g., concrete mixing trucks). ◢ A construction schedule that minimizes impacts to adjacent noise-sensitive activities. ◢ Engine braking ("jake" brakes) shall not be used in lodging, camping or residential areas. Engine brakes that are used shall be muffled. ◢ 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. ◢ If the COR (or other designee) 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. ◢ Ensure that noise barriers, if needed are not located in sensitive habitats. ◢ 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.	Contractor

<table>
<tr><th>Topic</th><th>Resource Protection Measures</th><th>Responsibility</th></tr>
<tr><td>G.2
Noise Management</td><td>
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:
<table>
<tr><th colspan="2">Sound Level in dB(A)</th><th>Time Duration of Impact Noise</th></tr>
<tr><td rowspan="2">Ambient Noise:</td><td>70</td><td>More than 12 minutes in any hour</td></tr>
<tr><td>80</td><td>More than 3 minutes in any hour</td></tr>
</table>
Maximum noise levels (dB) for receiving noise area at property line shall be as follows:
<table>
<tr><th>Earthmoving</th><th>dB(A)</th><th>Materials Handling</th><th>dB(A)</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>
Residential receiving area — Daytime: 65 dB; Nighttime: 45 dB
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.
</td><td>Contractor</td></tr>
<tr><td>G.3
Field Quality Control</td><td>
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.
</td><td>Contractor</td></tr>
<tr><td colspan="3">H. Air Quality</td></tr>
<tr><td>H.1
Dust Abatement Program</td><td>
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:
water or apply soil stabilizers to disturbed areas;
when hauling dry materials, securely cover truck beds to prevent blowing dust or loss of debris;
limit speeds to a maximum of 15 mph within construction areas. slower speeds shall be maintained if necessary to reduce dust formation.
minimize vegetation clearing;
</td><td>Yosemite National Park; Contractor</td></tr>
</table>

Topic	Resource Protection Measures	Responsibility
H.1 Dust Abatement Program (continued)	◢ re-vegetate disturbed areas post construction; ◢ at construction zone access points, prevent paved areas from accumulating mud, soils, and other organic materials.	Yosemite National Park; Contractor
H.2 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: ◢ 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; ◢ require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM; ◢ require all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines; ◢ require all equipment operations to occur during daytime hours to minimize effects of local inversions; ◢ equipment operations shall be in accordance with all Federal and State air emission and performance laws and standards; and ◢ 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.	Yosemite National Park; Contractor
I. Visitor Experience		
I.1 Non-Hazardous Solid Waste Management Measures	Waste, trash, and debris shall be controlled at all times and disposed in authorized containers in the Contractor's staging area. 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. All large, normally open top, waste bins or dumpsters shall be lidded and clearly marked "No Food or Trash". All construction personnel shall adhere to park regulations concerning food storage and refuse management. 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. 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 Yosemite National Park boundary for disposal in accordance with law. Remove debris from permanently closed spaces prior to enclosing them. Properly secure trash during the workday and remove all trash from site at the end of each workday	Yosemite National Park; Contractor
I.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
I.3 Campsite Closures	Any work requiring the closure of a camping areas should be scheduled, if at all feasible, out of the normal season of operation for that facility. If work must occur during the normal season of operation at the campground, the park campground manager will be informed of the closure at least 6 months ahead of the first date of planned closure period. Construction activities in camping areas will be planned to minimize campground or campsite closure periods. Wawona Campground Loop A is generally open year-round; Loops B and C are generally operational from April to September.	Contractor

Topic	Resource Protection Measures	Responsibility
J. Transportation		
J.1 Traffic Control Plan	Contractor shall prepare a Traffic Control Plan. This plan shall include but not be limited to the following: ◢ Maps showing how any detour routes will be signed and controlled. ◢ 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. ◢ 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. ◢ Show how any detour routes will be signed and controlled. Furnish and install all signs. Provide flag-persons as required. ◢ Revise and update the Traffic Control Plan to reflect changes in the project schedule or sequence of work, as required. ◢ 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. ◢ 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. ◢ The Yosemite National Park 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. ◢ 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. ◢ 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.	Contractor
J.2 Road Closure Traffic Control and Detour Plans contents	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: ◢ 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 COR a minimum of 7 days prior to any planned road closures. ◢ 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.	Contractor
J.3 Traffic Control Devices	Traffic control devices shall be provided in sufficient quantities and types as required to provide safe and adequate traffic control. 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. Barricades shall be furnished and maintained along all open trenches in contact with traffic. 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. All traffic control devices shall be placed in accordance with the Manual of Traffic Controls and favorably reviewed Traffic Control Plan. Locations of devices shall be adjusted to suit the conditions and circumstances of each detour situation. In all cases, signs shall be placed to most effectively convey their messages to approaching traffic. Immediately after traffic control devices have been placed, the detour shall be test driven by the Contractor. Test Drive shall include approach to the detour from each possible direction and traversing full length of each detour route.	Contractor

Topic	Resource Protection Measures	Responsibility
J.3 Traffic Control Devices (continued)	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 (or other designee). The Contractor shall provide additional traffic control devices if required to maintain flow of traffic through construction operation. 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. The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations. 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. 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. The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations. 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.	Contractor
J.4 Traffic Control Flaggers	The Contractor shall employ flaggers: ◢ As required for each specific detour. ◢ At all locations on a construction site where barricades and warning signs cannot control the moving traffic. ◢ 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 (or other designee). ◢ 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
J.5 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. The contractor shall provide for the protection of pedestrians, bicyclists, and equestrians at all times. The contractor shall 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 flagpersons and guards as necessary to give adequate warning of any dangerous conditions to be 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.	Contractor

Topic	Resource Protection Measures	Responsibility
J.5 Traffic Control and Maintenance (continued)	The contractor shall employ flagpersons to direct traffic as required to ensure safe vehicular travel. While on duty, flagpersons and guards shall be equipped with orange safety wearing apparel and a paddle-type signal, which shall be clean and in good repair. The contractor shall provide two-way programmable radios to flagpersons if they are not in sight of each other at all times, or if necessary to ensure safe passage of vehicles. The contractor shall 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. The contractor shall 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. The contractor shall replace permanent pavement markings and traffic signs upon completion of each phase of work. 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. 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. 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. 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. 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 COR (or other designee) as necessary 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 COR. 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.	Contractor
K. Cultural Resources		
K.1 Evaluation of Revetment Removal Sites	Prior to any ground disturbing activities associated with construction, further analysis and possible documentation at each site would be required in order to assess potential adverse effects to historic resources.	Yosemite National Park; Contractor
K.2 Evaluation of Revetment Removal Sites	As per Section 106 of the NHPA, prior to construction or demolition activities, the Park shall survey the project area for potential impacts to historic buildings, structures, and districts within the project area of potential effect (APE). This will include a review of existing known historic resources for their continued integrity and eligibility for listing in the National Register, identification of currently unknown historic properties within the APE, determination of potential adverse effects and resolution of those effects in compliance with 36 CFR Part 800 – Protection of Historic Properties. Every effort shall be made to avoid adverse impacts. These efforts may include screening and/or sensitive design that would be compatible with cultural landscapes.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
K.3 Submittals	**Historic Properties Treatment Program:** The contractor shall submit a written plan for each phase or process including protection of surrounding materials during operations. Contractor shall describe in detail materials, methods, and equipment to be used for each phase of work and in each area. 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 COR prior to commencement of work, existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by historic treatment operations.	Yosemite National Park; Contractor
K.4 Removed and Salvaged Historic Materials:	Contractor shall handle removed and salvaged historic materials in accordance with the following: ◢ Clean salvaged historic items. ◢ Pack or crate items after cleaning. Identify contents of containers. ◢ Store items in a secure area until delivery to the NPS. ◢ Transport items to storage area approved by COR (or other designee). ◢ Protect items from damage during transport and storage. ◢ Do not dispose of items removed from existing construction without prior written consent of COR.	Yosemite National Park; Contractor
K.5 Existing Historic Materials to Remain	The contractor shall protect against damage and soiling of retrieved cultural artifacts or features during construction. When permitted by COR, and in coordination with Park's cultural resources staff, items may be removed to a suitable, protected storage location during project.	Yosemite National Park; Contractor
K.6 General Historic Resource Protection	Contractor shall undertake the following historic resource protection measures: ◢ Ensure that construction supervisors and crews view the Yosemite video "Working in Yosemite" (https://www.youtube.com/watch?v=CuRn-tZ8SL4&feature=youtu.be), to familiarize crews with the importance of resource protection responsibilities while working within the park. ◢ Ensure that supervisory personnel are present when work begins and during its progress. ◢ If specific construction areas/phases will be subject to archeological and/or tribal monitoring o The contractor will notify the COR at least 7 days in advance of work to schedule on-site monitoring. ◢ Protect existing materials during installation of temporary protections and construction. Not deface or remove existing materials. ◢ Obtain COR (or other designee) approval prior to attaching temporary protection to existing construction. ◢ Protect landscape work adjacent to or within work areas as follows: ◢ Provide barriers to protect tree trunks. ◢ Bind spreading shrubs. ◢ 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. ◢ Set scaffolding and ladder legs away from plants. ◢ 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. ◢ Notify the COR (or other designee) immediately of drains or systems that are stopped or blocked. Not begin Work of this Section until the drains are in working order. ◢ 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. ◢ Protect storm drains from pollutants. ◢ Block drains or filter out sediments, allowing only clean water to pass.	Yosemite National Park; Contractor

Topic	Resource Protection Measures	Responsibility
K.7 Plan-Specific Programmatic Agreements	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. 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.	Yosemite National Park
K.8 Protection of Properties with Religious and Cultural Value	A government provided botanist, and as necessary, a Native American Monitor, will identify traditionally used plants in the project area. The botanist and Native American Monitor will work with the Contractor to establish fencing to protect the traditionally used plants from construction disturbance. The Native American Monitor may check on the fencing throughout the construction period to confirm that the traditionally used plants are sufficiently protected.	National Park Service and traditionally-associated American Indian tribes and groups
K.9 Archeological Resources	Train all members of the restoration/construction teams in proper handling 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 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 prehistoric or historic archeological artifacts, features, or 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. 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. 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 a 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).	Yosemite National Park; Contractor
K.10 Ground Disturbance and Monitoring	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, COR (or designee), 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. 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 COR (or designee). Upon verification, erect necessary fencing to identify and protect cultural resources from disturbance. 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.	Yosemite National Park; Contractor; Traditionally-associated American Indian tribes and groups

Topic	Resource Protection Measures	Responsibility
K.10 Ground Disturbance and Monitoring (continued)	The archeological monitor shall record and be authorized to collect soil samples artifacts, cultural features, and other 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. If Archeological Monitor or Tribal 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. 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. If resources are discovered while Monitors are absent, stop work immediately and report the discovery to the COR. 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. 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. Adjustments for Work Stoppage. See Federal Acquisition Regulations.	Yosemite National Park; Contractor; Traditionally-associated American Indian tribes and groups
K.11 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; Traditionally-associated American Indian tribes and groups
K.12 Section 106 Compliance	Continue consultation with the SHPO, ACHP, traditionally-associated American Indian tribes and groups and other consulting parties consistent with 36 CFR §800.5 to minimize or mitigate adverse effects and seek ways to resolve adverse effects through project specific agreements through 36 CFR §800.6 (b) and (c) for projects/actions assigned to Category 2 in Exhibit 5 of the 2014 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.	National Park Service
K.13 Inadvertent Discovery of Historic Properties or American Indian Human Remains	In accordance with the 2014 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; 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

WAWONA WASTEWATER TREATMENT SYSTEM REHABILITATION PROJECT ENVIRONMENTAL ASSESSMENT

February 2019

This document evaluates and determines whether the Selected Action in the *Wawona Wastewater Treatment System Rehabilitation Project Environmental Assessment* (*Wawona Wastewater System 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.

The park developed the *Foundation Document for Yosemite National Park* in 2016. This document summarizes the park's purpose, significance, fundamental resources and values, and interpretive themes. It describes the park's significance as being derived from Yosemite's outstanding scenery, unique granite domes and glacial features, 2.5 million acres of contiguous designated wilderness, intact old growth forests, and extensive reaches of two designated wild and scenic rivers. The purpose of the park is to preserve the dynamic natural setting within its boundaries, including granite domes, dramatic cliffs, towering waterfalls, ancient sequoia groves, expansive wilderness, and free-flowing wild and scenic rivers; to celebrate the cultural and historic traditions of the Central Sierra Nevada, including thousands of years of human history; to perpetuate the American conservation ethic; and to provide opportunities for scientific exploration, recreation, education, and inspiration for generations to come.

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 1987, the U.S. Congress officially designated the Merced River as a component of the National Wild and Scenic Rivers System. The river runs for 81 miles through Yosemite National Park and includes two main segments, the mainstem Merced River and the South Fork of the Merced River, in the park. The park developed the 2014 *Merced Wild and Scenic River Comprehensive Management Plan Environmental Impact Statement and Record of Decision* (Merced River Plan) to protect and enhance the values for which the Merced River was designated a Wild and Scenic River. The Merced River Plan amended portions of the park's GMP. The portion of this project that connects the Wawona Campground to the Wawona Wastewater Treatment Plant tiers off of the Merced River Plan. All proposed actions are consistent with protection of the outstandingly remarkable values as identified in the Merced River Plan.

NO IMPAIRMENT DETERMINATIONS FOR THE SELECTED ACTION

Under guidelines promulgated by the October 2011 NPS National Leadership Council, Memorandum L7615 (2310), non-impairment determinations must include a discussion for each impact topic analyzed in detail within the *Wawona Wastewater System 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.

Cultural Resources

Historic Properties in the Built Environment: There are four historic properties within the area of potential effects. With implementation of the project's resource protection measures and avoidance measures in place, the Selected Action will result in no adverse effects to historic properties in the built environment. 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 historic resources in the built environment and the purpose, mission, and significance of the park.

Archeology: Nine archeological sites are within the area of potential effects that are either contributing or considered as being eligible as contributors to the Wawona Archeological District. The Selected Action will result in no adverse effects to the Wawona Archeological District, with resource protection measures 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 project. On April 25, 2017, the park requested tribal consultation on the project and formally requested identification of historic properties with religious and cultural significance that might be affected by the project. The park and tribal representatives conducted multiple site visits to identify properties with religious and cultural significance and the park has worked in partnership with the traditionally associated tribes and groups to develop project designs for the Selected Action. The Selected Action will not result in impairment of American Indian traditional cultural resources, including tribally-identified, eligible, and listed National Register properties.

Biological Resources

Habitat: The Selected Action will result in reduced long-term risk to habitats through sewer system upgrades and decreasing the need for overland hauling of sewage. The Selected Action involves removal an estimated 10 trees from the ponderosa pine and Sierran mixed conifer forest and earthmoving activities during construction may result in cutting tree roots, which could potentially lead to mortality. Implementation of resource protection measures will prevent significant tree mortality and avoid the potential for adverse effects. Although construction will have minor temporary impacts to habitat, the Selected Action will not result in a loss of acreage of forest habitat. Overall, the Selected Action will not result in impairment of habitat and will improve habitat quality.

Aquatic Resources: The Selected Action will have potential short-term construction impacts on aquatic resources, including wetlands. Disturbance of aquatic habitats will be largely avoided by

constructing in the existing developed footprint. Under the Selected Action, the installation of utility pipelines and replacement of existing effluent spray irrigation system components in the Big Trees Golf Course will require construction disturbance in wetlands (less than 0.02 acres delineated wetlands disturbed) but will not permanently alter or fill aquatic resources. Resource protection measures will be implemented to minimize and avoid impacts to wetlands and aquatic resources. The Selected Action will not alter hydrologic regimes or habitat functions, and will overall protect water resources and the purpose, mission, and significance of the park.

Special Status Wildlife: Under the Selected Action short-term impacts on special-status wildlife may occur. Scheduling construction to avoid critical periods for wildlife, conducting pre-construction surveys, and avoiding night activities will reduce potential impacts to wildlife, as outlines in resource protection measures.

Effects on the California red-legged frog (listed under the federal Endangered Species Act), will be discountable or insignificant, and not likely to adversely affect the population. The U.S. Fish and Wildlife Service concurs that the Selected Action may effect, but is unlikely to adversely affect the frog based on the following reasons:

- The frog is not believe to be present and no historic observations are known in the vicinity.
- It is unlikely the frog could disperse from the Yosemite Valley reintroduction sites to the project area.
- The project area contains limited habitat, reducing the likelihood that the frog would occupy the area.
- The proposed mitigation measures further minimize or avoid potential adverse effects to the frog.

Adverse impacts to special-status wildlife under the Selected Action will be avoided. While some local, short-term, minor, construction-related effects to wildlife resources will occur, the project will protect wildlife and the purpose, mission, and significance of the park.

Special Status Plants: The Selected Action has the potential to result in disturbance to five species of special-status plants in the project vicinity. Disturbance of these plant populations and loss of individuals will be avoided through implementation of resource protection measures. Impacts to vegetation communities will be minimal as the majority of project actions occur in previously disturbed and currently developed areas. Under the Selected Action there will be no alteration or loss of special-status plants. Overall, the Selected Action will not impair special-status plants, and will protect the purpose, mission, and significance of the park.

Invasive Plants: Although construction activities may create conditions for the establishment of invasive plant populations, resource protection measures will be implemented to prevent the spread of invasive plants, and post-construction surveys for invasive plants will occur, consistent with the Yosemite National Park Invasive Plant Management Plan Update (NPS 2010). The Selected Action will have no long-term adverse effects related to invasive plants. Overall, the project will enact adequate measures to protect park resources from invasive plant establishment and not impair the purpose, mission, and significance of the park.

Water Resources

Surface Waters/Groundwater/Water Quality: The South Fork of the Merced River and its tributaries are adjacent to or cross the *Wawona Wastewater System EA* project area. The river is a prominent

feature in the Wawona area and is designated a wild and scenic river. The Selected Action will have a beneficial effect on water quality, surface water, and groundwater due to the decommissioning of campground septic systems, replacing the South Fork Picnic Area vault toilet, and improvements to the manhole near the South Fork Bridge, all of which reduce water quality risks posed during large flood events. Improvements to the wastewater treatment plant that will allow for on-site solids handling, as well as the other aforementioned actions, will lead to decreased overland hauling of solid waste, decreasing risks to water quality posed by accidental spills from overland sewage transport. The increase in land-based effluent discharge under the Selected Action will not cause degradation of underlying ground or surface waters. In the short-term, construction activities could lead to impacts to surface waters, groundwater, or water quality, although implementation of resource protection measures greatly reduces these risks. Overall, the project will protect and preserve surface water and groundwater resources, water quality, and the purpose, mission, and significance of the park.

Floodplain: The project area is within the 100-year floodplain. Under the Selected Action the majority of infrastructure proposed will be either located underground or, if above ground, will be very similar to existing facilities, and will not substantially impact hydrologic flows beyond existing conditions. No additional structures or impervious surfaces are proposed outside of existing development. The Selected Action will not increase the water surface elevation of the 100-year floodplain or increase flood hazards. The Selected Action will require temporary construction in the floodplain and may result in minor short-term adverse effects on floodplain values. Overall, the project will protect and preserve hydrologic functions, floodplain resources, and the purpose, mission, and significance of the park.

FINDING

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 *Wawona Wastewater Treatment System 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.