



FINDING OF NO SIGNIFICANT IMPACT

REHABILITATE GENERALS HIGHWAY FROM AMPHITHEATER POINT TO DEER RIDGE AND WOLVERTON ROAD TO LITTLE BALDY PULLOUT

SEQUOIA AND KINGS CANYON NATIONAL PARKS, CALIFORNIA
June 2008

PURPOSE AND NEED FOR FEDERAL ACTION

The National Park Service (NPS) in cooperation with the Federal Highway Administration /Western Federal Lands Highway Division (FHWA) will rehabilitate two sections of Generals Highway, the primary artery through Sequoia and Kings Canyon National Parks (parks), Tulare County, California. The purpose of the project is to maintain public access over Generals Highway. This will be accomplished by reconstructing and rehabilitating two sections of Generals Highway by improving the road geometry and structural instability; increasing the road width, where necessary, to two 10 foot travel lanes; formalizing and making uniform parking areas/pullouts or removing and revegetating social pullouts; and improving pavement surface and drainage.

Portions of the road have been in continuous use since 1926 and continue in service today as originally constructed. These actions are needed because:

1. The road geometry is inadequate in many areas. Retaining walls, cut walls, culverts, and support structures are unstable or failing (Amphitheater Point to Deer Ridge).
2. The pavement surface is deteriorated and of inconsistent width, varying from 18 to 22 feet (Amphitheater Point to Deer Ridge).
3. Parking areas and pullouts are often poorly designed and located (both sections).
4. Structural deficiencies and failures, including raveling edges, slumping of outside fills, and surface cracking, are occurring in the existing asphalt (both sections).
5. Drainage problems are present in some locations (both sections).

Continued deterioration of the road would result in damage to the adjacent natural environment, higher maintenance costs, loss of historic features, and hazardous driving conditions. Ultimately, the continued deterioration would threaten the ability of the visitors to see and enjoy the parks.

SELECTED ALTERNATIVE

The National Park Service's selected alternative (reconstruct Generals Highway from Amphitheater Point to Deer Ridge and Wolverton Road intersection to Little Baldy pullout) is alternative 2 and is the preferred alternative in the environmental assessment/assessment of effects (EA/AoE).

The selected alternative will meet the Sequoia and Kings Canyon National Parks' planning objective of providing a safe and adequate transportation route through these sections of the parks and opportunities for visitors to stop and experience the parks along the route.

Roadway Facilities

The first section will rehabilitate Generals Highway for 8.5 miles, from Wolverton Road north to the Little Baldy pullout. The project will recycle and overlay the existing pavement, including rebuilding the roadbed within the existing road bench. The typical section of two 10-foot travel lanes with 1-foot shoulders will be used, and curves will be widened to accommodate a 40-foot vehicle length. Existing curb will be eliminated on fills, and at Suwanee Creek the curb will be removed and replaced. Steel-backed timber guardrails or walls will replace metal guardrails in two locations between Wolverton Road and Little Baldy pullout. Any new wall construction or rehabilitation of existing walls will be in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (1992). Existing pullouts will be reshaped to a consistent depth and layout throughout the project.

At the Clover Creek Bridge, the pullout may be extended approximately 30 feet to allow for two additional parking spaces. Rumble strips may be added across both travel lanes to attract attention to the pedestrian traffic in the area. The roadway cross-slope will be corrected on curves.

Little Baldy Saddle trail crosses Generals Highway at the pullout at the northern terminus of this project. Existing pullouts on both sides of the roadway allow visitors to park and access the trail and will be retained. Improved signing and interpretive waysides will be upgraded or replaced as necessary throughout both sections.

Existing underdrains south of the Lodgepole area will be replaced during construction. Utilities, including sewer, water, electrical and telephone, are buried beneath the current road facility from Wolverton Road intersection to the Red Fir Maintenance Facility. The utility access boxes located in the road at this location will be modified or replaced. The vegetation along the road will be cut throughout the project.

The second section will reconstruct Generals Highway for 1.50 miles from Amphitheater Point to Deer Ridge. Work will entail constructing retaining walls, guardwalls, cantilever bridges, drainage structures, base material, and asphalt. The existing grade and alignment will be maintained as much as possible. Revegetation will occur where areas adjoining the road are disturbed. Widening the existing travel lanes to a consistent 10-foot width and improving the turning radius of the switchbacks to accommodate a 22-foot long design vehicle is a design standard adopted for the section from Potwisha to Giant Forest, which includes the Amphitheater Point to Deer Ridge section. Shoulder stabilization and rock outcrop blasting will be necessary to establish the proposed width.

The projects will be constructed in multiple (3 to 4) phases due to high costs and complexity of the work. In accordance with previous Generals Highway road projects, daytime traffic delays through the project will be a maximum of one hour during peak visitation, from Memorial Day weekend to late September and a maximum of two hours during the shoulder construction season, from early October to Memorial Day. Construction will be limited to daylight hours in the Wolverton Road to Little Baldy pullout section. An exception to this limitation may be made to repair or replace deep culverts mainly in the area between Red Fir to Little Baldy pullout with appropriate mitigation measures for wildlife. The 1.5 mile road section from Amphitheater Point to Deer Ridge requires complicated construction, including the widening of existing travel lanes requiring the construction of cantilevered bridges and retaining walls, on switchbacks, several of which are within the ¼ - mile radius of a known California spotted owl territory. The construction on this road section may take the entire construction season making it impossible to limit construction during the nesting season. Impacts on historical nest sites may be unavoidable. These impacts may include shifts in territory use away from construction noise, changes in feeding behavior, or changes in adult nesting behavior, e.g. increased flushing from the nest.

Drainage Improvements

Drainages with stone masonry culverts will not be disturbed. Some masonry headwalls will be replaced or rehabilitated. Generals Highway and some associated stone masonry features have been found eligible for listing in the National Register of Historic Places (NRHP). Any rehabilitation or new construction will be in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (1992). An erosion hole was found at the culvert 4.5 miles northeast of the Wolverton Road intersection. The existing pipe will be replaced with a 36- or 48-inch pipe. The inlet will be raised and the existing hole filled.

There are several deep culverts that need to be repaired or replaced, mainly in the area from Red Fir to the Little Baldy pullout. The replacement of these culverts may require excavating material down several feet to reach the damaged culvert. This may require extended road closures which will only be possible at night.

Wuksachi Village Road Improvements

The Wuksachi Village Road (approximately 0.7 miles) will be rehabilitated under this project. The road was originally constructed to half the pavement depth recommended. Curb will be added minimally in select locations to aid in drainage. Previously constructed curb and ditch will not be disturbed. The existing acceleration and deceleration lanes on Generals Highway at the Wuksachi Village Road will be redesigned with the goal of staying within the existing footprint.

Halstead Meadow Restoration and Bridge Construction

Generals Highway crosses Halstead Meadow approximately 5.3 miles north of the Wolverton Road intersection. The road embankment bisects the meadow, altering the natural sheet flow of water and adversely impacting the meadow ecosystem. Most of the meadow's water is diverted into two 36-inch pipe culverts, resulting in incision of a channel that is greater than 20 feet deep in many areas that extends for nearly the entire length of the meadow. In *Analysis of Meadow Hydrology, Vegetation, and Soils and Suggestions for Restoration of Upper Halstead Meadow, Sequoia National Park, California* (Cooper and Wolf, 2006), the incision was determined to be actively widening the channel, eroding additional meadow area, lowering the water table, and

altering the native wet meadow plant community both above and below the roadway. Approximately 1.6 acres in the Upper Halstead Meadow has been drained by the channel and an estimated 2 acres in the Lower Halstead Meadow. The restoration of the Upper Halstead Meadow was completed in September 2007. Environmental effects of the restoration were discussed in a separate environmental compliance document.

The Lower Meadow Restoration, which will start in 2010, will be achieved by using a combination of restoration measures, which may include the following:

- use fill produced as waste from other projects in the park to fill the gullies and restore level cross-meadow grades;
- import fill from outside the park to fully or partially fill the gullies;
- grade and compact surface channels and tunnels in the highly disturbed, dried part of the meadow to restore level cross-meadow grades and eliminate piping of water toward the gullies;
- use earthen berms to exclude water from sections of gullies that cannot be filled;
- use rocks, logs, earth, and geotextile fabric to build check dams within the gullies;
- use rocks, logs, and geotextile fabric to build a large, stepped-down grade transition where the filled section of the large gully transitions down to the bed of the incised channel;
- build a temporary road (10 to 20 years) from the Generals Highway down into the large gully so that fill can be placed as it is produced as waste from other projects; alternatively, this access may be made through the existing Halstead Meadow picnic area, requiring short (one to two month) closures of the picnic area.
- embed logs across the meadow, below the bridge to provide grade control that will prevent headcuts from continuing up the meadow, endangering the bridge and the upper meadow restoration;
- obtain material on site – under the road or other parts of the upper or lower meadow without causing adverse grades;
- divert water temporarily to allow gullies to be filled. Water will be collected near the bridge area and piped further downstream for discharge to minimize headcutting near the restoration site and allow gullies to be filled;
- remove upstream, depositional sediment caused by the road acting as a dam; and
- fell approximately 15 to 35 live and dead trees, some over 24 inches in diameter, across the meadow perpendicular to the water flow to dissipate flow energy, spread water evenly across the meadow, and prevent channelization.
- plant approximately 50,000 native wetland plants, propagated from seed collected from Halstead Meadow or, if necessary, from other meadows located within 10 miles and within an elevation of 500 feet of Halstead Meadow. Until plants are established, erosion control blanket will be used to provide surface complexity and prevent surface erosion.

According to Cooper and Wolf (2006), the Lower Meadow Restoration will require 15,000 cubic yards of fill. Because this quantity of fill may not be immediately available within a 10-mile radius, the lower meadow restoration may extend over a longer time period (approximately 10

years), utilizing fill dirt in phases as it is produced by other projects. Once the gully is filled, surface water will be allowed to flow across the meadow.

Because California spotted owl surveys conducted in 2006 and 2007 indicated an owl pair within the vicinity of Halstead Meadow, larger trees will be flagged by the parks and evaluated by the owl survey crew to determine if the trees are within 100 meters of the owl's core use area. To protect other sensitive bird species that may use smaller trees for nesting, trees will be cut down between August 15 and March 1, avoiding conflicts with the nesting season. If the contractor encounters a situation where tree removal is required during the nesting seasons, they will contact the project manager and the tree will be evaluated for nests and/or roosts. If a roost or nest is found, the tree will be left in place or removed outside of the breeding season.

The road rehabilitation and lower meadow restoration work will tie-in with the upper restoration work to allow for a stable transition across the meadow. The lower meadow work could begin in 2010 and is expected to last several years as fill becomes available. The bridging of the meadow to restore sheet flow will require the installation of a one lane temporary detour road on the north side of the roadway, which will allow for removal of the existing road embankment and installation of the bridge. Construction of the bridge abutments will require removal of existing trees that have grown up in the road embankment. Areas of the meadow that have been eroded may require minor filling or grading to reestablish the natural flow across the meadow. Once surface water is reestablished across the meadow, the temporary roadway will be removed, and plants grown from seed collected in Halstead Meadow will be replanted in the spring following implementation of the earthwork.

Construction to rehabilitate these sections of Generals Highway is scheduled to take place, weather permitting, between March and November in 2009, 2011 and 2013. Construction activities to restore the lower Halstead Meadow will begin in 2010 and could extend to 2020, depending on the availability of fill.

OTHER ALTERNATIVES CONSIDERED

The no action alternative, alternative 1, would be the continuation of existing conditions for Generals Highway from Amphitheater Point to Deer Ridge and Wolverton Road intersection to Little Baldy pullout. The NPS would respond to future needs and conditions associated with Generals Highway in the parks without major actions or changes in the present course. The no action alternative does not preclude short term, minor repair or improvement activities for the road that would be a part of routine maintenance for continuing operation of the road.

The existing condition at Halstead Meadow below the roadway would persist. An eroded channel in the meadow would widen, damaging additional meadow area, lowering the water table, and altering the native wet meadow plant community.

Alternative 1 would not meet the Sequoia and Kings Canyon National Parks' planning objective of providing a safe and adequate transportation route through this portion of the parks, and providing opportunities for visitors to stop and experience the parks along the route. Safety improvements, such as retaining walls, guardwalls, cantilever bridges, corrected roadway cross-slopes on curves, and greater turning radii on roadway switchbacks would not be constructed. A considerable number of the vehicles traveling the roadway are large or lengthy, and often encounter operational hazards while negotiating the curves and switchbacks. Pullouts along the roadway would not be enlarged to provide additional safe parking.

ALTERNATIVES CONSIDERED BUT DISMISSED

One design option considered and dismissed allowed for maintaining the various road widths. This option was not carried forward because the NPS interdisciplinary team determined the impacts would be too great for visitor experience and health and safety, and this option does not meet the purpose and need for the project.

Another construction option considered and dismissed allowed for a full road closure during construction. This construction option was dismissed because the impact to the visitor experience, the gateway community, and park operations would be too great.

RATIONALE FOR SELECTED ALTERNATIVE

The selected alternative meets the project objectives of improving traffic safety on Generals Highway and providing the best improvements for the visitor experience. As summarized in the following sections, the selected alternative (preferred alternative) also best meets the criteria in Section 101 of the National Environmental Policy Act (NEPA) for the environmentally preferred alternative; and, after consideration of effects described in the environmental assessment, there are no significant impacts on the human environment as defined by criteria in 40 CFR 1508.27.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Director's Order 12, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents, including EAs. The environmentally preferred alternative is determined by applying the criteria suggested in NEPA, which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "[t]he environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of NEPA, which considers:

1. fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations
2. assuring for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings
3. attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
4. preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice
5. achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
6. enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources" (NEPA, section 101)"

The no action alternative is not the environmentally preferred alternative because it would not:

- address the deteriorating road surface and poor visibility that creates safety hazards for employees and visitors (criteria 2, 3, and 5 not met as well as under the preferred alternative)

- reduce the need for road and culvert maintenance that consumes depletable resources (criteria 1 and 6 not met as well as under the preferred alternative)
- ensure safer access to park facilities (e.g., parking areas, trails, wayside exhibits) for all individuals (criteria 2, 3 and 4 not met as well as under the preferred alternative)
- correct conditions producing the erosion/degradation at Halstead Meadow and would not restore the wetlands (criteria 1, 2, and 4 not met as well as under the preferred alternative)

The environmentally preferred alternative is the selected alternative; this determination was based on the following criteria:

- protects public and employee health, safety, and welfare by addressing safety concerns associated with a deteriorated road surface and poor visibility (NEPA criteria 2, 3, and 5)
 - prevents loss of cultural and natural resources by improving drainage and revegetating/restoring social pullouts (NEPA criteria 1, 2, 3, 4, and 5)
- improves operations efficiency and sustainability by reducing the need for ongoing road maintenance and the consumption of depletable resources associated with such maintenance (criteria 1 and 6)

MITIGATION

Mitigation measures have been incorporated into the selected alternative to reduce impacts (Table 1). Mitigation measures include clearly defining construction zones; avoiding introduction of non-native species; best management practices to minimize erosion, sedimentation, noise, and dust emissions; blending cut areas into natural environment; and minimizing new disturbance.

Table 1. Mitigation measures to be implemented.

Resource Area	Mitigation Measure	Responsible Party
General Measures	▪ The FHWA & NPS will ensure that the project remains within the construction limits and parameters established in the compliance documents and that mitigation measures are properly implemented. ▪ Construction zones outside of the existing disturbed area will be identified and fenced with construction tape or some similar material prior to any construction activity. The fencing will define the construction limits and confine activity to the minimum area required for construction.	FHWA Project Engineer/NPS Park Project Manager FHWA Project Engineer/NPS Park Project Manager

Resource Area	Mitigation Measure	Responsible Party
General Measures continued	▪ All protection measures will be clearly stated in the construction specifications/special construction requirements, and workers will be instructed to avoid conducting activities beyond the construction limits as defined by the construction fencing or similar material. This does not exclude necessary temporary structures such as erosion control fencing. ▪ All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project work limits upon project completion. Any asphalt surfaces damaged due to work on the project will be repaired to original condition. All demolition debris will be removed from the project site, including all visible concrete and metal pieces. ▪ Contractors will be required to properly maintain construction equipment (i.e., mufflers) to minimize noise from use of the equipment. ▪ A hazardous spill plan will be in place, stating what actions will be taken in the case of a spill, notification measures, and preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials, etc. ▪ Where appropriate and available “environmentally friendly” grease, hydraulic oil, and bar and chain oil will be used. These lubricants are vegetable or mineral oil based, less toxic, and biodegradable. ▪ All equipment on the project will be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fluids. All equipment will be checked daily. ▪ Best management practices for drainage and sediment control, as identified and utilized by the FHWA’s and the NPS’ Stormwater Pollution Prevention Plan, will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. Use of Best Management Practices in the project area for drainage area protection will include all or some of the following actions, depending on site-specific requirements: – keeping disturbed areas as small as practical to minimize exposed soil and the potential for erosion; – locating waste and excess excavated materials outside of drainages to avoid sedimentation;	FHWA Project Engineer/NPS Park Project Manager FHWA Project Engineer/NPS Park Project Manager FHWA Project Engineer FHWA Project Engineer FHWA Project Engineer FHWA Project Engineer FHWA Project Engineer/NPS Park Project Manager

Resource Area	Mitigation Measure	Responsible Party
General Measures continued	– installing silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material) prior to construction; – conducting regular site inspections during the construction period to ensure that erosion-control measures were properly installed and are functioning effectively; and storing, using, and disposing of chemicals, fuels, and other toxic materials in a proper manner – storing, using, and disposing of chemicals, fuels, and other toxic materials in a proper manner. ▪ Delays for emergency response vehicles will be kept to a minimum by having the emergency responders notify the traffic monitors via park radio/frequency immediately when the vehicle is dispatched, thus allowing approximately 10 minutes to clear the road before the arrival of the emergency vehicle.	NPS Emergency Responders/ FHWA Project Engineer
Wetlands/ Floodplains	▪ Wetland Protection Best Management Practices will be adhered to, thus limiting impacts on wetlands. Restoration measures for Halstead Meadow described in the above section will also help limit wetland impacts.	FHWA Project Engineer /NPS Park Project Manager and Restoration Ecologist
Vegetation	▪ A revegetation plan will be developed for disturbances outside of the existing road prism. ▪ Ground surface treatment will include grading to natural contours, replacing topsoil, and, where necessary, seeding, and planting. On the Wolverton Road to Little Baldy pullout section, topsoil placement and mulching with litter and duff will be the primary revegetation treatment. If insufficient litter and duff is salvaged from the project area, additional litter and duff will be gathered from adjacent areas to place as mulch over disturbed soil. ▪ Reclaimed areas will be monitored after construction to determine if reclamation efforts are successful or if additional remedial actions are necessary, as outlined in the revegetation plan developed by the NPS. ▪ Remedial actions will include installation of erosion-control structures, reseeding, topsoil placement, and/or replanting the area, and controlling non-native plant species with herbicide.	Park Restoration Ecologist FHWA Project Engineer/NPS Restoration Ecologist FHWA Project Engineer/NPS Restoration Ecologist FHWA Project Engineer/NPS Restoration Ecologist

Resource Area	Mitigation Measure	Responsible Party
Vegetation continued	▪ In an effort to avoid introduction of non-native/noxious plant species, no hay bales will be used during revegetation or for temporary erosion control. ▪ Best Management Practices will include: – Minimize soil disturbance. – Pressure wash and/or steam clean all construction equipment to ensure that all equipment, machinery, rocks, gravel, or other materials are cleaned and weed free before entering the parks. Construction equipment will be inspected by NPS staff prior to entering the parks to ensure compliance with cleanliness requirements and inadequately cleaned equipment will be rejected. – Cover all haul trucks bringing fill materials (excluding asphalt) from outside the parks to prevent seed transport and dust deposition along the road corridor. – Limit vehicle parking to existing roadways, parking lots, or access routes. – Limit disturbance to roadsides and culvert areas, including limiting equipment to the roadbed area - no machinery or equipment should access areas outside the construction limits. – Obtain all fill, rock, or additional topsoil from the project area, if possible. If not possible, obtain weed-free sources from NPS approved sources outside the parks. – If weed-free quarry sources cannot be located, the contractor may be required to scrape away topsoil at the quarry and/or acquire freshly exposed material with minimal seed deposition and washing of course materials (rip rap). – Initiate revegetation of disturbed sites immediately following construction activities. – Monitor disturbed areas for up to three years following construction to identify growth of noxious weeds or non-native vegetation. Treatment of non-native vegetation will be completed in accordance with NPS-13, <i>Integrated Pest Management Guidelines</i>.	FHWA Project Engineer/NPS Restoration Ecologist FHWA Project Engineer /NPS Park Project Manager and Restoration Ecologist NPS Park Project Manager and Restoration Ecologist

Resource Area	Mitigation Measure	Responsible Party
Vegetation continued	▪ To maximize vegetation restoration efforts after completion of construction activities, the following measures will be implemented: – Salvage topsoil from construction areas for reuse during restoration on disturbed areas. Additionally, the topsoil containing the seed bank from identified, main jewelflower populations will be removed, stored, and replaced after construction. – Incorporate native litter and duff layer in forested sites for replacement over salvaged topsoil.	NPS Park Project Manager and Restoration Ecologist
Wildlife	▪ The clearing limits (construction limits) outside of the existing road prism will be clearly marked or flagged prior to construction. All construction activities, including staging areas, will be located within previously disturbed areas and fenced, if necessary.	FHWA Project Engineer /NPS Park Project Manager and Wildlife Ecologist
Special Status Species	▪ Construction personnel will be informed of the occurrence and status of special status species and will be advised of the potential impacts on the species and potential penalties for taking or harming a special status species. ▪ Great grey and California spotted owl surveys will be conducted to protocol and until the projects are complete, to locate use areas that may be impacted. Construction activities will be adjusted as practicable, to avoid sensitive life stages of these species. ▪ Blasting is scheduled to occur in the Amphitheatre to Deer Ridge section of the project. After extensive surveys, one nesting pair of California spotted owls was found within the vicinity of this section of the project. In 2006 and 2007, the pair nested below Amphitheatre Point. Blasting will only be required in the upper half of this segment of work and outside of the quarter mile radius surrounding the current nest location. During the construction, currently scheduled for 2011, if there is an occupied nest in the area as determined by qualified experts, blasting will be scheduled outside of the limited operating season (March 1- August 15) when possible. ▪ A bat survey will be conducted prior to construction to identify any maternity or roost colonies that may be affected by the project. Construction activities will be adjusted as practicable, to avoid sensitive life stages of these species.	FHWA Project Engineer /NPS Park Project Manager and Wildlife Ecologist NPS Wildlife Ecologist and Park Project Manager FHWA Project Engineer /NPS Park Project Manager NPS Park Project Manager and Wildlife Ecologist

Resource Area	Mitigation Measure	Responsible Party
Special Status Species continued	- Most construction activity will be limited to daylight hours for the Wolverton Road to the Little Baldy pullout section. Some night work and/or road closures may be necessary for culvert repair or replacement, mainly from Red Fir to the Little Baldy pullout. - To reduce noise disturbance and limit impacts on breeding avian and mammalian species, all tree removal work will be conducted August 15 – March 1, where feasible. If larger trees, with a diameter at breast height of 24 inches or greater, need to be removed outside of this time frame, they will be identified for removal and evaluated for nesting or roosting use. If nesting or roosting is found, the tree will be left in place or removed outside of the breeding season. - Feeding or approaching wildlife will be prohibited by construction personnel. - Any wildlife collisions will be reported to park personnel. - Park biologist or ranger will be notified if bears loiter in area or if fisher sightings occur. - A litter control program will be implemented during construction to eliminate the accumulation of trash. All food will be stored in bear proof containers except when it is being consumed. Food stored in vehicles will be in bear proof containers. Spilled food will be cleaned up. Visitors in traffic delays will be educated by NPS staff, when available, to not approach or feed wildlife.	FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager
Air Quality	- Dust control will occur, as needed, on active work areas where dirt or fine particles are exposed. - The contractor will not leave vehicles idling for more than five minutes when parked or not in use. - Concrete and asphalt plants will be located outside Sequoia and Kings Canyon National Parks. No long term or overnight storage of these materials will be permitted within the parks. Small quantities of concrete and asphalt may be stored for a short term only at the designated staging areas. - Construction debris will be hauled from the parks to an appropriate disposal location. - Visitors will be asked to not idle their vehicles while waiting for the traffic delay to be re-opened.	FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager

Resource Area	Mitigation Measure	Responsible Party
Water Quality	▪ Sediment traps, erosion checks, and/or filters will be constructed above or below all culvert drains (if such drains are required) and in all other ditches before the water (runoff) leaves the project construction limits. ▪ At all cut and fill areas, erosion and sedimentation control will be implemented to minimize impacts on water quality. ▪ Surface restoration and revegetation of disturbed soils will be implemented to minimize long term soil erosion. ▪ Water needed for construction and dust control will come from the existing developed water systems within the parks and will not be diverted from surface waters.	FHWA Project Engineer /NPS Park Project Manager NPS Park Proj Mgr and Restor Ecologist FHWA Project Engineer /NPS Park Project Manager
Soils/ Geologic Resources	▪ Blasting will be allowed with stipulations (see “Special Status Species”), in clearly identified areas, and an appropriate blasting plan will be established and strictly enforced. ▪ Where blasting occurs, soils will be reestablished in “pockets” so that vegetation can be planted. ▪ Erosion and sediment control will be required (see “General Measures”). ▪ Topsoil will be removed from areas of construction and stored for later reclamation use. The topsoil will be redistributed as near the original location as possible and supplemented with scarification, mulching, seeding, and/or planting with species native to the immediate area.	FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager and Restoration Ecologist
Park Operations	▪ As necessary, future park utilities conduit may be incorporated into the project to reduce damage and the removal of any new road surface. ▪ Only one of the major overlooks (Amphitheater Point or Deer Ridge) will be used for staging during different phases of the project, but the other will be clear and remain open for visitors. ▪ Once the winter season terminates construction, the turnouts should be cleared of all construction storage equipment and materials.	FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager

Resource Area	Mitigation Measure	Responsible Party
Park Operations continued	Delays for emergency response vehicles will be kept to a minimum by having the emergency responders notify the traffic monitors via park radio/frequency immediately when the vehicle is dispatched, thus allowing approximately 10 minutes to clear the road before the arrival of the emergency vehicle.	FHWA Project Engineer/NPS Emergency Responders
Visitor Experience	- One lane of traffic will remain open during construction, when feasible, and access to Wolverton Road and to the Sherman Tree Parking Lot will remain open, although delays will occur during intersection reconstruction. - From Amphitheatre to Deer Ridge, traffic delays through the project will be a maximum of one hour during the peak visitation season, from Memorial Day to late September and a maximum of two hours during the off-peak season, from early October to Memorial Day. - From Wolverton to Little Baldy, traffic delays will be a maximum of one hour, year round. When delays are necessary, traffic will be released through the construction zone on the hour. - To minimize delays, when possible slip lines will be installed in existing culverts and/or overflow culverts will be installed, which will reduce installation time. - All closures will be limited to weekday closures from 6 a.m. Monday to 12 p.m. Friday with weekend closures limited to short delays to account for the possibility of single lane travel. - The park will provide information, e.g. brochures, signs, telecommunication, and interpretative programs to inform visitors, concessions, USFS, and employees of alternative routes and project schedule. - Visitors will be notified when road closures or traffic delays will occur and information will be posted in neighboring communities, on the park website, at visitor centers and entrance stations. - At the traffic delay locations and if conditions warrant, an NPS interpreter will be present to answer questions from visitors and advise them of procedures and construction expectations.	FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager FHWA Project Engineer /NPS Park Project Manager NPS Park Project Manager & Public Information Officer NPS Project Manager and Interpreters

Resource Area	Mitigation Measure	Responsible Party
Cultural Resources	- Should unknown archeological resources be uncovered during construction, work will be halted in the discovery area, the site secured, and the appropriate Sequoia and Kings Canyon National Parks staff will consult with the California State Historic Preservation Officer (CA SHPO) and affiliated tribes, if necessary, according to 36 CFR 800.13 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA). - In compliance with the NAGPRA, the NPS will also notify and consult with concerned American Indian tribal representatives for the proper treatment of human remains, funerary, and sacred objects should these be discovered during the project. - Archeological specimens found within the construction area will be removed only by the NPS or their designated representatives. - When a historic stone masonry feature is to be rehabilitated, the rehabilitation will be in accordance with the Secretary of Interior Standards for the Treatment of Historic Properties (1992) and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Weeks and Grimmer, 1995). - Known historic sites will be flagged and avoided during construction, and an NPS archeologist will be on site during the entire ground disturbance near the site. - The bedrock milling site with a lithic scatter located during the “1985 and 1986 Generals Highway Archeological Survey, Sequoia National Park,” (1990) will be fenced off to indicate that no ground disturbing activities are allowed outside of the already disturbed area. - All new stone masonry features will be built in accordance with the Secretary of Interior Standards for the Treatment of Historic Properties (1992) and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Weeks and Grimmer, 1995).	FHWA Project Engineer /NPS Park Project Manager and Park Cultural Resources Specialist NPS Park Cultural Resources Specialist FHWA Project Engineer /NPS Park Project Manager and Park Cultural Resources Specialist FHWA Project Engineer /NPS Park Project Manager Park Cultural Resources Specialist

Resource Area	Mitigation Measure	Responsible Party
Cultural Resources continued	- Contractor-selected, noncommercial areas outside of the project limits, including but not limited to material sources, disposal sites, waste areas, haul roads, and staging areas, will not encroach upon sites listed or eligible for listing in the NRHP. Written proof satisfactory to the NPS and the CA SHPO shall document, for compliance with Section 106, that no historic properties will be affected because: - there are no historic resources present or - there is no effect to historic properties present.	FHWA Project Engineer /NPS Park Project Manager
Health and Safety	- Traffic monitors will have park radios with the appropriate park frequency and appropriate safety clothing and reflective signs. - Visitors and NPS staff will not be allowed to stop/park in a pullout or on the road in the construction zone. Emergency vehicles will be allowed on an as needed basis.	FHWA Project Engineer /NPS Park Project Manager NPS Park Project Manager

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON QUALITY OF THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an EIS: No major adverse or beneficial impacts were identified that would require analysis in an environmental impact statement.

The selected alternative (preferred alternative) will have no or negligible impacts on soils/geologic resources, wildlife, vegetation, air quality, soundscapes, night sky experience, wild and scenic rivers and other unique natural areas, prime and unique farmland, environmental justice, wilderness, socioeconomics/gateway communities, archeological resources, ethnographic resources, museum objects, and Indian trust resources.

Short-term, negligible to minor, adverse impacts on special status species and on cultural landscapes will result during road reconstruction activities. Construction activities will have short-term minor to moderate adverse impacts on wetlands and floodplains at Halstead Meadow, and on park operations and visitor experience.

Long-term adverse impacts on special status species and visitor experience will be minor. Long-term adverse impacts on historic structures and cultural landscapes will be moderate.

Section 106 analysis identifies an adverse effect on historic structures and cultural landscapes.

To address those adverse effects, a programmatic agreement between NPS, the California State Historic Preservation Officer (CA SHPO), the United States Forest Service (USFS), the Advisory Council on Historic Preservation (ACHP) and affiliated tribes has been completed.

The project will have long-term beneficial effects on the wetlands and floodplains at Halstead Meadow and on park operations, visitor experience and cultural landscapes.

Degree of effect on public health or safety: During construction, the public will be adversely affected by noise, dust, fumes, delays, increased congestion, and construction vehicle traffic along these sections of Generals Highway. Traffic hazards will be mitigated during construction by traffic monitors with park radios, to help direct traffic flow. During peak visitation, NPS interpreters will be on hand at traffic delays to provide information regarding the construction activities and the park. Vehicle operators will be encouraged to shut off their engines during construction delays. Emergency vehicles will be able to pass through the construction areas as needed.

Upon completion of the selected alternative, public and employee health and safety will be improved. The rehabilitated roadway sections will be consistently 20 feet wide, with a new driving surface, improved signage, and appropriate guardrail installation. Pullouts will be better designed for safer use.

The improved radii of the switchbacks will provide safer passage for buses and larger recreational vehicles. Sight distances will be longer, reducing the potential for loss of vehicle control and associated collisions.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: As described in the environmental assessment, wilderness values, wild and scenic rivers, and prime and unique farmlands will not be affected.

There are historic structures and cultural landscape features identified in the project area that will be affected by project actions. In the 1.5 mile section between Amphitheater Point and Deer Ridge, 35 to 40 stone masonry guardwalls and 12 to 15 stone masonry culvert headwalls will be reconstructed. Two to five stone masonry culvert headwalls will be reconditioned, and two to seven stone masonry culvert headwalls will be removed, because they are not functioning. Two to five drop inlets with stone masonry cap stones will be installed. One stone masonry parapet wall will be replaced with a stone veneer cantilevered bridge. Two major, historic stone masonry features, a large granite wall and a car watering station, will be retained and incorporated into the highway design.

In the 8.53 mile section from Wolverton Road north to the Little Baldy pullout, two metal guardrails will be replaced with steel backed timber guardrails or walls. Work will also include removing 10 to 15 stone culvert headwalls and replacing them with stone headwalls, reconditioning approximately five stone masonry headwalls, and installing up to five culverts with stone masonry headwalls. Existing signs and interpretive pullouts and sidewalks will be upgraded or replaced as necessary. Existing pullouts will be reshaped to a consistent depth and layout throughout the project, while some unauthorized pullouts will be eliminated and revegetated.

Wetlands and floodplains will be impacted in Halstead Meadow. The existing road embankment across the meadow will be removed and replaced with a proposed bridge. A one lane bypass will

be constructed north of the existing roadway to accommodate traffic during construction. Heavy equipment will be used to fill the existing eroded gullies downstream of the road. After construction, water now captured by the gullies will flow across the meadow as sheet flow, and the meadow will be revegetated with local flora. After completion of the bridge, the bypass lane will be removed and the area rehabilitated.

Construction of the bridge and restoration work in Halstead Meadow will have moderate, short-term, adverse impacts on the wetland and floodplain. Long-term impacts on the wetland and floodplain will be beneficial, with natural conditions restored in the meadow.

Some ecologically critical areas will be affected. Removal of vegetation may impact owl habitat where trees are removed adjacent to the road. Longer distances between trees may affect the flight patterns of owls flying from perch to perch across the road, increasing the danger of being struck by vehicles. Construction noise may adversely impact the nesting success of owls in the vicinity of the road.

Tree removal, the scaling back of rock faces, and work around larger culverts may displace or kill individual bats listed as species of concern. However, an evaluation of bat use areas will be conducted before construction, and if colonies are found, construction will be timed outside of the breeding season.

Three park plant species of concern, bigleaf maple, California nutmeg, and the Farnsworth jewelflower are found within the 1.5 mile section of Generals Highway from Amphitheater Point to Deer Ridge. Construction of the wider road widths in this section will impact individuals of the bigleaf maple and the California nutmeg, and result in some removal. Permanent loss of habitat will occur. Topsoil containing the seed bank from identified jewelflower populations will be retained separately and replaced after construction.

Degree to which effects on the quality of the human environment are likely to be highly controversial: There were no highly controversial effects identified during either preparation of the environmental assessment or the public review period.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: There were no highly uncertain, unique or unknown risks identified during either preparation of the environmental assessment or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The selected alternative (preferred alternative) neither establishes a National Park Service precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: Impacts on special status species, wetlands and floodplains, park operations, visitor experience, historic structures, and cultural landscapes were analyzed in the selected alternative (preferred alternative) of the environmental assessment.

As described in the environmental assessment, cumulative impacts were determined by combining the impacts of the selected alternative (preferred alternative) with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at Sequoia and Kings Canyon National Parks and, if applicable, the surrounding region.

Projects that Make Up the Cumulative Impact Scenario

To determine potential cumulative impacts, projects in the area surrounding Sequoia and Kings Canyon National Parks were identified. The area included lands administered by the USFS, non-profit organization landowners, and private landowners. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future. Past actions were also included in the analysis.

These cumulative actions were evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular natural resource, cultural resource, visitor use, or the socioeconomic environment. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project.

Past Actions

The following past actions could contribute to cumulative effects:

- Generals Highway Cut Slope Repair Route 10(7A)
- Generals Highway Halstead Meadow Erosion Repair
- Generals Highway Rehabilitate Route 10(1 – 6)
- Rehabilitation of the Lodgepole Campground
- Giant Forest Development Area Removal
- Construction of the Wuksachi, Clover Creek, and Red Fir Development Areas
- Reconstruction of the Crescent Meadow / Moro Rock Road

Current and Future Actions

Current actions and those projected for the future could also contribute to cumulative effects. These include:

- Rehabilitate 10.7 km of Generals Highway
- Replace Cedar Grove Bridge in the Cedar Grove District of Kings Canyon National Park
- Replace Wolverton Corrals
- Lodgepole and Grant Grove - Replace Water Distribution Systems
- Replace Big Stump Entrance Station
- Restoration of Big Meadow

The negligible to moderate, adverse impacts of the selected alternative (preferred alternative), combined with impacts of past, present, and reasonably foreseeable actions, could result in negligible to moderate adverse cumulative impacts on special status species, wetlands and floodplains, park operations, visitor experience, historic structures, and cultural landscapes.

Beneficial impacts of the preferred alternative, when combined with other past, present, and foreseeable future impacts, could result in increased long-term beneficial effects on special status species, wetlands and floodplains, park operations, visitor experience, and cultural landscapes.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: The impacts on historic structures will be long-term, moderate, and adverse. There will be short-term, negligible, adverse impacts, and long-term, moderate, adverse impacts on cultural landscape features. Removal of the unauthorized social pullouts and the metal pipe guardrails, both of which are non-supporting/non-contributing road features, will have a beneficial impact on the cultural landscape.

After applying the ACHP criteria of adverse effect (36 CFR 800.5) the National Park Service proposes that implementing the selected alternative (preferred alternative) will result in a determination of ***adverse effect*** on properties listed or eligible for listing in the National Register. The NPS has negotiated a new programmatic agreement with the CA SHPO, the USFS, the ACHP and the associated tribes to address any design changes specific to the Generals Highway Rehabilitation.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: The United States Fish and Wildlife Service (USFWS) website provided a list of federally-listed special status species and designated critical habitats that may be within the project area or affected by any of the alternatives. One federally listed wildlife species, the California condor, and two candidates for federal listing, the Pacific fisher and the Sierra Madre yellow-legged frog, have been known to occur or to travel through the project area. Both the California condor and the Sierra Madre yellow-legged frog appear to be extirpated from the project area.

The Pacific fisher, a federal candidate species, is known to occur in the project area. The fisher inhabits logs or tree cavities. They tend to be rather shy and solitary, generally avoiding large open areas. Due to these habitat specifications, the fisher is limited to extensive tracts of relatively undisturbed, late-successional forest.

There is no designated critical habitat in the project area.

Whether the action threatens a violation of federal, state, or local environmental protection law: The selected alternative (preferred alternative) violates no federal, state, or local environmental protection laws.

IMPAIRMENT OF PARK RESOURCES OR VALUES

In addition to reviewing the list of significance criteria, Sequoia and Kings Canyon National Parks determined that implementation of the selected alternative will not constitute an impairment of park resources and values. This conclusion is based on a thorough analysis of the impacts described in the environmental assessment, the agency and public comments received, and the professional judgment of the decision-maker in accordance with the *NPS Management Policies, 2006*. As described in the environmental assessment, implementation of the selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Sequoia and Kings Canyon National Parks; (2) key to the natural or cultural integrity of the parks; or (3) identified as a goal in the parks' *General Management Plan* or other relevant National Park Service planning documents.

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

Staff of Sequoia and Kings Canyon National Parks, FHWA, and resource professionals of the NPS, DSC, conducted internal scoping from May 2005 through July 2006. This interdisciplinary process defined the purpose and need, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the proposed action to other planning efforts at the parks.

A press release initiating public scoping and describing the proposed action was sent to over 300 recipients including news media, special interest groups, gateway community business owners, other government agencies and members of the public on August 4, 2006. Comments were solicited for thirty days following the press release. No comments were received.

The undertakings described in the EA/AoE are subject to Section 106, as amended in 1992 (16 USC 470 *et seq.*). A copy of the EA/AoE was sent to the CA SHPO in early 2007. Project scoping letters went out to the parks' affiliated tribes on August 16, 2006.

In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*), it is the responsibility of the federal agency proposing the action (in this case the NPS) to determine whether the proposed action would adversely affect any listed species or designated critical habitat. After consulting internet sources and with species experts, it was determined that no listed species or their critical habitats will be adversely affected by either alternative.

The EA/AoE was made available for public review and comment during a 30-day period ending April 21, 2008. An electronic copy of the EA/AoE was placed on the parks' Planning, Environment, and Public Comment website. Copies of the EA/AoE were also made available at the Three Rivers and Visalia libraries and the parks' visitor centers. Copies of the EA/AoE were sent to regulatory and affected agencies including the United States Fish and Wildlife Service, the United States Forest Service, the Army Corp of Engineers and California Department of Fish and Game. Fourteen copies of the EA/AoE were distributed to the CA SHPO and the affiliated tribes during the comment period. Other entities on the mailing list received a letter and/or a press release announcing the availability of the EA/AoE for review. Due to the low level of controversy relative to this project, no public scoping meetings were held.

The National Park Service received one letter commenting on the EA/AoE: none were received from private citizens. The one letter received was from the California Department of Fish and Game, Habitat Division. The letter supported a number of project plans and mitigation measures which were stated in the Environmental Assessment. This letter contained one comment regarding impacts of blasting on special status species. Consequently, an additional mitigation measure for blasting has been added to the Mitigation Measures table under the impact topic, Special Status Species.

The Federal Highway Administration administers a coordinated federal lands program, including park roads. The project, Rehabilitate Generals Highway from Amphitheater Point to Deer Ridge and Wolverton Road to Little Baldy Pullout, will be funded through the Federal Lands Highway Program. The Federal Highway Administration, Western Federal Lands Highway Division, is a cooperating agency on the design of the project and the preparation of the environmental assessment.

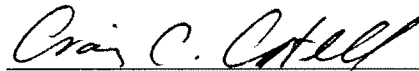
CONCLUSION

The NPS has selected alternative 2 for implementation. The potential impacts that may result from implementing the selected actions will not impair any park resources or values necessary to fulfill specific purposes identified in the park's enabling legislation.

The selected alternative does not constitute an action that normally requires preparation of an environmental impact statement. The selected alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are negligible to moderate in intensity. Mitigation measures will be incorporated into the selected alternative to reduce or eliminate impacts. There are no foreseen significant adverse impacts on public health, public safety, threatened or endangered species, historic properties either listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region, no highly uncertain or unacceptable impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the environmental analysis completed, the capability of the mitigation measures to eliminate, reduce or avoid impacts, and with consideration of the minimal nature of public and agency responses, it has been determined that an environmental impact statement is not required for this project and the selected alternative will be implemented as soon as practicable.

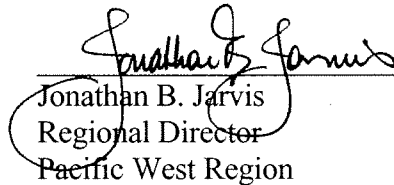
Recommended:



Craig Axtell
Superintendent
Sequoia and Kings Canyon National Parks

28-Jun-08
Date

Approved:



Jonathan B. Jarvis
Regional Director
Pacific West Region

July 7, 2008
Date