



## Tioga Road Rehabilitation

Finding of No Significant Impact  
October 2012



**FINDING OF NO SIGNIFICANT IMPACT  
TIOGA ROAD REHABILITATION  
YOSEMITE NATIONAL PARK  
OCTOBER 2012**

**INTRODUCTION**

The Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt a plan to rehabilitate 41 miles of Tioga Road and the determination that no significant impacts on the human environment are associated with this decision. The Tioga Road Rehabilitation Project is intended to address various rehabilitation needs, including road surface and drainage system improvements, along a 41-mile corridor. Centrally located within Yosemite National Park, Tioga Road traverses the crest of the Sierra Nevada and is a major scenic and recreational attraction for park visitors. The portion considered in this project extends from Crane Flat (mile post 0) at an elevation of 6,200 feet to Blue Slide (mile post 41) just east of Tuolumne Meadows at an elevation of 8,600 feet. The remaining easternmost segment, from Blue Slide to the park's eastern boundary, has been resurfaced more recently and is not anticipated to require rehabilitation for another 10 to 15 years.

**PURPOSE AND NEED**

The purpose of the Tioga Road Rehabilitation Project is to rehabilitate, restore, and resurface approximately 41 miles of roadway while protecting natural and cultural resource values. The project will also improve roadway drainage and manage roadside parking. The need for the action arises from the road's high accident rate, heavy use, and a "poor" pavement condition inventory rating from the Federal Highway Administration.

Tioga Road has not been fully repaved in over 40 years and has deteriorated substantially due to oxidized and fatigued pavement, poor drainage, failing culverts, and erosion. There are periodic potholes that can cause vehicle damage (e.g. flat tire) and superelevation rates along the road that can affect traction of vehicles and can cause sliding during icy conditions. Crumbling asphalt and common undesignated roadside parking have also caused Tioga Road's shoulders to narrow.

The main safety concern along the roadway is driving visibility. In several areas, dense roadside trees or shrubs substantially reduce both forward and peripheral driving sight distance, providing less time to respond to pedestrians, animals, rocks, or other cars on the road. Road shoulders, roadside drainage, and asphalt condition are key concerns addressed as part of this road rehabilitation project. Collectively these existing road hazards increase public safety risks for visitors and employees driving along this road.

**SELECTED ACTION**

The *Tioga Road Rehabilitation Environmental Assessment* analyzed two alternatives, including Alternative 1 – No Action Alternative, and one action alternative, Alternative 2 (rehabilitation). The National Park Service identified Alternative 2 – Rehabilitation, as the preferred alternative in the Environment Assessment (EA). The National Park Service has

identified Alternative 2 – Rehabilitation, as the Selected Action. This FONSI incorporates two modifications (detailed below) from Alternative 2 as described in the EA. There is no change in the determination of potential environmental effects resulting from these changes. National Park Service developed these alternatives based on the project purpose and need, issues raised during internal and public scoping, and project-specific research and design. The EA disclosed potential environmental consequences that may result from implementation of each alternative.

### **Selected Action - Alternative 2: Rehabilitation**

The Selected Action will improve driving conditions on a 41-mile section of Tioga Road extending from Crane Flat (mile post 0) to Blue Slide (mile post 41), just east of Tuolumne Meadows. Implementation of the project will occur in phases, beginning in 2013 with project completion anticipated in 2018. The Selected Action is substantively the same as described for the Preferred Alternative, Alternative 2, in the EA with two exceptions. The Olmsted quarry is no longer a staging area in order to avoid disturbance to pika habitat and the design addition of an outside road berm at the NPS corral will mitigate the unstable and erosive conditions. In addition, the mitigation measures listed in Table 1 of this FONSI has been expanded to include new data collection. These additions were made to ensure environmental concerns were addressed from park subject matter experts and public comments. The following general improvements will occur under the Selected Action.

- Repave the 41-mile section of road in the project area over multiple years.
- Restore the original pavement width of 22 feet, which includes two 10-foot travel lanes with one-foot paved shoulders on each lane.
- Delineate and formalize turnouts to manage impacts to natural and cultural resources.
- Remove and restore unsafe, undesignated turnouts.
- Clear sight lines for ingress and egress will minimize visual restrictions for safety.
- Modify the superelevation rates (roadway cross-slope) on road curves where needed to reduce vehicle sliding (during icy conditions).
- Improve drainage (including repairing, replacing, lining or removing existing culverts; installing new culverts; installing or replacing paved ditches; and adding riprap rundowns) to route water away from the road, to minimize saturated areas underneath the paved road surface, as well as minimize deterioration of the shoulder due to saturation and erosion along the shoulder of the road.
- Conduct selective roadside vegetation thinning and brush removal to improve sight distance and aid snow removal operations.
- Perform slope scaling (removal of unstable rock from steep cut slopes) to reduce the frequency of rocks and debris sliding down the slope onto the road or into drainage structures.

## **SUMMARY OF OTHER ALTERNATIVES CONSIDERED**

### **Alternative 1: No Action**

Under the No Action Alternative, the existing roadway would not be improved, except for continuation of emergency repairs and routine and periodic maintenance activities. Conditions under this alternative serve as a baseline from which impacts from other alternatives can be analyzed. Because no rehabilitation or comprehensive resurfacing would occur, under this alternative there would not be any improvements to the condition of the road or the visitor experience, many safety issues would not be addressed, and there would be no new resource impacts. The existing paved turnouts would remain paved and those that are unpaved would remain unpaved, including numerous user-created informal turnouts along the length of the route.

Under Alternative 1, however, routine maintenance actions would occur as needed. These include snow removal; spring opening; winter closing; unpaved road grading, shaping and repair; asphalt patching, crack sealing, and application of slurry or chip-seal treatments; ditch and culvert cleaning and repair; vegetation maintenance; striping; and sign replacement.

### **PRELIMINARY ALTERNATIVES CONSIDERED BUT DISMISSED**

The National Park Service considered but rejected two additional alternatives to the proposed action during the design phase of the project. The following sections describe additional alternatives considered but dismissed.

#### **In-Kind Replacement**

The National Park Service considered simply repaving what is currently paved. However, this would not address several public safety concerns and ongoing natural and cultural resource impacts. Alternative 2 is similar to this alternative but would include several additional components that would address the purpose and need of the project.

#### **Upgrade Road to Meet NPS or American Association of State Highway and Transportation Officials Standards**

National Park Service road standards as articulated in the *1984 Park Road Standards* called for new non-historic roads with a proposed traffic volume similar to Tioga Road to be designed with 11- to 12-foot lane widths and 3-foot shoulders. Walls and hillside cuts would be needed to redesign horizontal curves and provide improved line of sight and a minimum 10-foot clear zone along the road edge. The *1984 Park Road Standards* would not maintain the historic character of the road and thus this alternative was dismissed. To preserve the historic integrity of the Tioga Road, the proposed project includes 10-foot lanes with 1-foot shoulders.

### **ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) and NPS NEPA guidelines require that “the alternative or

alternatives which were considered to be environmentally preferable” be identified (CEQ Regulations, section 1505.2). “Environmentally preferable” is defined as “the alternative that will promote the national environmental policy as expressed in NEPA’s section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources” (CEQ 1981).

Section 101 of NEPA states that:

*It is the continuing responsibility of the Federal Government to . . . (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.*

The Selected Action, Alternative 2 as presented in the EA, will improve the quality of the roadway, including adding and replacing culverts, replacement of its sub-base and alterations to its cross slope (superelevation rate) where necessary, and recreating a uniform top-width/paved surface. The work will be completed with limited impacts on adjacent resources while retaining the historic character of the road. Upon implementation of Alternative 2, visitors will find a consistent road width with a smooth surface and improved site distance and well defined turnouts. Alternative 1 would result in ongoing deterioration of the roadway, including its culverts and other features.

Therefore, the alternative that best meets the environmentally selected criteria is Alternative 2. Analysis of resource and visitor impacts and mitigation strategies as noted indicate that Alternative 2 achieves the greatest balance between the need for repairing the road to improve public safety and park operations and preserving the road corridor’s natural and cultural resources. Alternative 1 would result in continued adverse impacts to public safety and natural resources and does not best meet the criteria.

Upon full consideration of the elements of Section 101 of the National Environmental Policy Act, the Selected Action represents the Environmentally Preferred Alternative for the Tioga Road Rehabilitation plan. The Selected Action best protects, preserves, and enhances historic, cultural, and natural resources.

### **WHY THE SELECTED ACTION WILL NOT HAVE A SIGNIFICANT EFFECT**

In considering the ten criteria for significant impact as defined by CEQ regulations 40 CFR 1508.27, it was determined that the Selected Action will not have a significant effect. The

"human environment", as defined in Sec. 1508.14, shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. All criteria were considered, and it was determined that none of the significance criteria are triggered under the Selected Action. Specifically, no highly uncertain or controversial impacts, unique or unknown risks, elements of precedence, or cumulatively significant effects have been 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 Selected Action will benefit both the quality of visitors' experience and to the public's safety. Neither of these are effects to the natural or physical environment nor to the relationship of people with that environment.
- Impacts may be beneficial or adverse. The language in the EA analysis sections *Special-Status Vegetation*, *Special-Status Wildlife* and *Historic Structures, Archeological and Ethnographic Resources, Buildings and Cultural Landscapes* differs to reflect other relevant federal law, but is in keeping with this concept.
- Special-status species are not likely to be adversely affected.
- The Selected Action was evaluated in context with other ongoing and proposed management actions, and no adverse cumulative impacts are expected. Some of these other management actions include the *Merced Wild and Scenic River Comprehensive Management Plan*, the *Tuolumne Wild and Scenic River Comprehensive Management Plan*, and the *Yosemite Wilderness Stewardship Plan*.
- No highly uncertain or controversial impacts or elements of precedence have been identified. Although there were some opposing comments made during public review, the level of controversy was determined not to be significant.
- The adverse effect on the historic property resulting from improving hydrological functioning will be resolved through implementation of mitigation measures specified in the *1999 Programmatic Agreement among The National Park Service at Yosemite, The California State Historic Preservation Officer, and The Advisory Council on Historic Preservation Regarding Planning, Design, Construction, Operations and Maintenance, Yosemite National Park, California*, and are therefore not determined to be significant. The Selected Action will not affect the Tioga Road's eligibility for listing in the National Register of Historic Places.
- The Selected Action neither establishes an NPS precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

Based on the following summary of effects, and as discussed in the environmental assessment, the Selected Action - Rehabilitation is determined not to have a significant effect on the human environment. All criteria were considered and the specific impacts of the Selected Action on natural, cultural, and socio-cultural resources are identified below.

## **Geology and Soils**

Geology and soils will be affected in many areas over the length of the road, wherever scaling, obliteration, paving, excavation, and/or fill will occur. During excavation and grading, soils will be mixed, moved, and replaced, affecting the area's soil profiles, with the greater degree of impact occurring in the limited areas not previously disturbed by construction. Local soil compaction will constitute a negligible to minor, short-term adverse impact on soils. Upon successful seeding and/or replanting, there will also be a long-term minor to moderate beneficial impact as the growth of plants and their return of nutrients and water holding capacity to soils in restored areas result in less erosion and more stable roadsides. With the implementation of mitigation measures (see Table 1 of the Finding of No Significant Impact), impacts to soils will be minimized or avoided.

## **Vegetation**

Vegetation impacts will include selective vegetation removal along both sides of Tioga Road, resulting in the loss of trees, shrubs, forbs, grasses and other plants. Approximately 366,970 square feet (8.4 acres) of existing informal paved turnouts will be formalized and paved as permanent pullouts. Approximately 141,129 square feet (4.6 acres) of existing informal turnouts will be restored and revegetated. Implementation of construction Best Management Practices will be employed to minimize impacts associated with erosion and sedimentation. Long-term beneficial impacts on vegetation will occur through culvert improvements and restoration of hydrologic processes. Implementation of mitigation measures (see Table 1, Mitigation Measures) will minimize or avoid impacts to vegetation.

## **Special Status Species – Plants**

There are 20 special status plant species known to occur within the vicinity of the project area, and another 33 species that have the potential to occur near the project area. Of these 53 species, only one is known to occur directly within the footprint of the project area, short-leaved hulsea (*Hulsea brevifolia*). The short-leaved hulsea population occurs on both sides of the Tioga Road, and individual plants grow on the sandy embankment of the road shoulder. With mitigation (seed collection and post-project reseeding), there would be minimal adverse impacts on the population as a whole.

Overall, there would no impact on plants protected under Section 7 of the Endangered Species Act (none are present in the vicinity of the project area), and negligible impacts on special status plants of the park.

Long-term beneficial impacts are expected for habitats in general, from improvements to culverts that would restore natural flow and reduce sedimentation and erosion. In addition, elimination of unwanted informal turnout areas would reduce unwanted foot traffic in nearby habitats, while paving of existing formal unpaved turnouts and revegetation of informal turnouts would reduce soil runoff. Rehabilitation of steep curves would reduce high speed runoff into nearby habitats. With the implementation of mitigation measures (see Table 1, Mitigation Measures) impacts to special status species plants will be minimized or avoided.

## **Wildlife**

Impacts on wildlife are expected in the short term to be minor to moderate and adverse and in the long term minor and beneficial. Impacts will be limited to the immediate Tioga Road corridor. Minor short-term impacts on wildlife habitat from rehabilitation will occur due to soil and vegetation disturbance from road and culvert repairs. With the implementation of mitigation measures (see Table 1, Mitigation Measures), especially during breeding seasons, any noise and visual disturbance to wildlife will be minimized or avoided. The Olmsted quarry staging area has been eliminated to mitigate potential impacts to the American pika habitat.

Implementation of Best Management Practices would be employed to minimize impacts. Adverse impacts on wildlife as a whole are expected to be temporary and minor. Habitat along the immediate Tioga Road corridor is relatively disturbed and lower quality habitat than that of the surrounding area. In addition, construction would occur during the visitor use season, not the quieter winter months, and noise and activity associated with the construction would be similar to noise and disruption from typical visitor traffic.

Long-term beneficial impacts on wildlife habitat within the vicinity of Tioga Road are expected from the proposed improvements. Improvement to culverts would restore natural flow and reduce sedimentation and erosion into nearby habitats. In addition, restoration of some informal turnouts would reduce unwanted foot traffic in nearby habitat. Paving of existing formal unpaved turnouts and revegetation of restored turnouts would also reduce soil runoff. Implementation of mitigation measures (see Table 1, Mitigation Measures) will minimize or avoid impacts to wildlife.

### **Special Status Species - Animals**

There are three federal candidate species in the project area - Yosemite toad, Mount Lyell salamander, and the Sierra Nevada yellow-legged frog. These amphibians are especially vulnerable to impacts from roads, including mortality from construction, vehicle collision, modification of behavior, and alteration of habitat. In order to avoid impacts to Yosemite toads, construction activities adjacent to meadows where populations have been documented would be avoided between the second week in June and the second week in July (breeding season). If construction activities during these times were unavoidable, a qualified biologist would survey the sites prior to construction to determine breeding times so that construction can be phased accordingly.

Long-term beneficial impacts are expected for aquatic and wetland species' habitats in general, from improvements to culverts that will restore natural flow and reduce sedimentation and erosion. Minor short-term and indirect impacts from construction may occur to habitat due to soil disturbance from road and culvert repairs. However, implementation of construction Best Management Practices will be employed to minimize impacts associated with erosion and sedimentation. Impacts on special status species on the whole are expected to be temporary and minor. Implementation of Table 1, Mitigation Measures with a focus upon avoidance, limiting construction activities during breeding seasons, and limiting areas of impacts will reduce potential adverse effects.

The project will occur in suitable habitat for special-status bird, bat, and aquatic species but the project will apply mitigation measures (see Table 1, Mitigation Measures) that focus on limiting activities during breeding seasons. Detailed surveys will be conducted at each bridge and other structures immediately before project implementation will minimize the potential for impacts on habitat or individuals. Therefore, the Selected Action may affect, but is not likely to adversely affect special-status species.

## **Hydrology**

During installation of new and modification of existing culverts, excavation and the use of heavy machinery will result in adverse impacts on water quality from sedimentation and increased erosion. However, after installation, the culvert improvements will result in a beneficial impact on hydrology by facilitating the passage of water under the road. Following construction, the improved drainage and reduced erosion and sedimentation will result in minor long-term beneficial impacts on water quality and hydrology by improving roadside drainage and decreasing roadside erosion and sedimentation. Implementation of mitigation measures (see Table 1, Mitigation Measures) will minimize or avoid impacts to hydrology.

## **Wetlands**

Impacts on nearby wetlands are expected to range from minor adverse to beneficial, and will be limited to local areas within the project footprint along Tioga Road. Long-term, beneficial impacts are expected from improvements to culverts that will restore natural flow and reduce sedimentation and erosion. Minor, short-term and indirect impacts from construction may occur due to soil disturbance from road and culvert repairs. However, implementation of mitigation measures (see Table 1, Mitigation Measures) will minimize or avoid overall impacts to wetlands.

## **Air Quality**

Air quality impacts will relate primarily to construction equipment emissions and dust generated during construction activities along the roadway and the potential short-term use of an asphalt batch plant. Emissions will occur in the immediate vicinity of construction activities and trucks moving into and out of the project area. Additionally, excavation activities along the road corridor could generate increased levels of dust. Implementation of construction activities will result in local, short-term, negligible, adverse effects on overall air quality along Tioga Road. With the implementation of mitigation measures (see Table 1, Mitigation Measures) impacts to local air quality will be minimized or avoided.

## **Soundscapes**

Construction noise will be loudest immediately adjacent to the construction area, but due to generally low background sound levels in Yosemite National Park, the noise may be audible a long distance from the source. Some construction equipment and activities can produce sounds in excess of 100 dB, typically in short bursts over the duration of the project. These noises will be perceived as 16 or more times as loud as a typical vehicle. Overall, impacts are expected to be local, short-term, minor to moderate and adverse to park visitors, residents, and contractors in the vicinity of maintenance activities. Long-term impacts on ambient noise

levels are not expected. Implementation of mitigation measures (see Table 1, Mitigation Measures) will reduce potential adverse effects.

### **Archeological Resources**

Ground disturbing actions associated with the Tioga Road Rehabilitation have the potential to impact identified sites and previously unidentified sites within the Area of Potential Effect (APE). Archeological and American Indian cultural monitors will be present during construction activities. Mitigation measures (see Table 1) will be in place to minimize impacts, following procedures outlined in the *1999 Programmatic Agreement among The National Park Service at Yosemite, The California State Historic Preservation Officer, and The Advisory Council on Historic Preservation Regarding Planning, Design, Construction, Operations and Maintenance, Yosemite National Park, California* (1999 Programmatic Agreement). However, the majority of other activities associated with the project (resurfacing of the road, paving of turnouts and restoration of existing turnouts and parking areas) will occur in previously disturbed areas.

The NPS has determined that implementation of the Selected Action will have no adverse effect on archeological properties. Components of the Selected Action would be designed to avoid or minimize impacts to historic properties, pursuant to the 1999 Programmatic Agreement.

### **Historic Structures/Cultural Landscapes**

Historic features will be protected and adverse effects avoided or minimized, wherever possible. The historic alignment and character of the road will not be affected. Actions that will have the potential to affect historic structures and cultural landscapes include

- installation of new curbing;
- modification of drainage structures along Tioga Road including historic culverts, ditches, and rundowns;
- construction of new drainage structures along Tioga Road; and
- formalization of pullouts that were not part of the original road design.

Damaged curbing will be replaced in-kind. The addition of new curbing to prevent further erosion of slopes along the road will be minimized. Of the 624 historic culverts, 20 will be replaced to improve hydrological flow. Five culvert headwalls will be rebuilt to improve their hydrological function; upsizing these culverts, which are contributors to the Tioga Road Historic District, will be an adverse effect to the historic district. In these instances, the stone masonry surrounding the headwalls will be salvaged and reused to the extent practical; historically compatible materials will be used to minimize the impact to the character of the road. Contributing retaining walls and bridge railing will be repaired in-kind.

For adverse impacts the park will use Standard Mitigation Measures identified in the park's 1999 Programmatic Agreement, including recordation of features impacted by the project as well as the salvage of historic materials. Actions under this alternative will be consistent with the *Secretary of the Interior's Standards for Rehabilitation*. Under NEPA, the adverse effects will be minor and long-term.

## **Public Safety**

Several local long-term moderate beneficial impacts on public safety will occur. Pavement rehabilitation will result in a smoother, more uniform travel surface for vehicles, which will improve safety of visitors and employees traveling on Tioga Road. High banks in the road will be corrected so it will be less likely that vehicles will slide across the road into oncoming traffic during inclement weather conditions. Improvements to damaged/decayed railing along bridges will improve visitor pedestrian safety within those areas. Installing curb modifications will stabilize the road shoulder and reduce or eliminate the shoulder stability concerns associated with the steep drop off behind the curb. Installation of a centerline rumble strip will also decrease vehicle accident potential as drivers will be more aware of encroachments onto the opposing lane.

New paved formal turnouts will reduce any confusion regarding informal turnouts and accident risk potential to visitors walking and parking near existing turnouts. Vegetation removal in several areas along Tioga Road, where dense roadside trees or shrubs reduce both forward and peripheral driving visibility, will reduce accident risk potential. Slope scaling will improve safety by reducing the potential of a rockfall and hazardous rocks and soil on the road, thereby reducing the accident risk potential. Implementation of mitigation measures will reduce potential adverse effects during construction.

## **Scenic Resources**

The rehabilitation of Tioga Road does not realign or expand the road. As a result the scenic driving experience on Tioga Road will not change appreciably over the long term as a result of implementation of the rehabilitation. However, it will include selective roadside tree thinning and removal and brush removal to aid in sight distance, which may also help maintain some views. Populations of showy plants including mountain pride penstemon will be removed as part of the ditch paving activities. Because it will not be possible to salvage and replant, the plants will not regrow until the new pavement decomposes. There will be a moderate, long-term beneficial impact on the scenic character of the landscape.

## **Visitor Experience and Recreation**

The rehabilitation and road improvements will enhance visitor experience and recreation access. Visitors will continue to find turnouts widely distributed along the road, resulting in a moderate to major beneficial impact. During rehabilitation activities, vehicles and pedestrians will be delayed along Tioga Road. Traffic delays will result in short-term, minor, adverse impacts on visitor experience and recreation access. Implementation of mitigation measures (see Table 1, Mitigation Measures) will reduce potential adverse effects during construction. Rehabilitation of Tioga Road will be expected to result in moderate, beneficial impacts on visitor experience and recreation over the long term.

## **Park Operations**

The systematic improvements to Tioga Road will result in long-term improvements that will reduce the annual maintenance and emergency repair costs of the road over the long term when compared to existing conditions, resulting in a minor to moderate beneficial impact. Instead of improvements potentially funded out of special project or emergency funding and

the annual park operations budget, improvements will be funded through the federal highways program and will be comprehensive.

**CUMULATIVE IMPACTS**

Actions addressed in the analysis include past and present actions, as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive impacts on a particular resource. Impacts of the Selected Action, when considered in conjunction with past, present, and foreseeable future actions, will ultimately result in a negligible to minor adverse cumulative impact for the natural and cultural resources analyzed in the environmental assessment. Natural resources will experience short-term local negligible to minor adverse impacts during rehabilitation and local long-term minor beneficial impacts following rehabilitation.

Although most of the work is typical of a Federal Highways 3R project (resurfacing, restoration, and rehabilitation), several changes need to be made to address chronic issues associated with the hydrologic function of the road, including expansion of five contributing headwalls that will need to be rebuilt to accommodate larger culverts. Because the Determination of Effect for the Tioga Road identified all 772 structures as individually contributing features to the historic district, the park has determined these actions will result in an adverse effect to the Tioga Road Historic District; however the effect to the integrity of the historic district will not be significant.

**MITIGATION MEASURES**

Throughout the planning process mitigation measures were identified and have been incorporated into the Selected Action to avoid, eliminate, or reduce impacts. These measures are identified in the table below.

Table 1. Mitigation Measures

Resource	Mitigation Measures	Coordinate With
General	<p>Supervisory construction personnel shall attend an Environmental Protection briefing provided by the park prior to working on site. This briefing is designed to familiarize workers with statutory and contractual environmental requirements and the recognition of and protection measures for archeological sites, sensitive habitats, water resources, and wildlife habitats.</p> <p>Construction activities shall be monitored by qualified park natural and cultural resource specialists to ensure proper compliance with the implementation of mitigation measures.</p> <p>Protective barriers shall be placed around areas adjacent to the project area that require special attention as identified by the park, such as specified staging areas, trees, plants, root zones, river edges,</p>	<p>Project Manager            Construction Contractor            Park Archeologist            Park Vegetation and Restoration Specialist            Park Wildlife Biologist</p>

Resource	Mitigation Measures	Coordinate With
General	<p>aquatic habitats, wetlands, sensitive wildlife habitats, cultural resource features, and infrastructure. Barriers shall be installed prior to construction and field inspected by natural and cultural resource personnel to verify proper placement.</p> <p>All tools, equipment, barricades, signs, surplus materials, debris, and rubbish shall be removed by the construction Contractor from the project work limits upon project completion.</p>	<p>Project Manager Construction Contractor Park Archeologist Park Vegetation and Restoration Specialist Park Wildlife Biologist</p>
Geology and Soils	<p>The park will identify staging areas prior to work to minimize disturbance of sensitive soils, vegetation, and wildlife.</p> <p>Ground disturbance will be minimized to the greatest extent possible.</p> <p>Driving over or compacting root-zones will be minimized.</p> <p>Mats or plywood will be used where appropriate to minimize compaction of soils in and around staging, riparian and meadow areas.</p> <p>The contractor will ensure topsoil is salvaged from excavated areas for use in recovering source area or other project areas.</p> <p>Soil and rock will not be piled within the dripline of trees scheduled to remain. Trees and roots will be protected from equipment damage.</p> <p>Trenching will avoid trees that will remain in an effort to preserve the dripline soils. For roots 2 inches or larger in diameter, hand excavation will be used as appropriate to prevent damage.</p> <p>Conserved topsoil will be stored in a separate location (segregated from subsoils).</p> <p>Topsoil will be windrowed at a height that will help to preserve soil microorganisms (less than 3 feet).</p> <p>The contractor will reuse (rather than remove from the project area) excavated materials for use in constructing berms or to level areas of impact.</p> <p>Berms created for roadside restoration will have a natural, undulating appearance and will use excavated fill as a first choice followed by clean fill as specified by the park.</p> <p>Sources of imported materials will be compiled by construction contractor and submitted for park review and approval prior to construction. Construction contractor will ensure that any imported soils, fills or aggregates are weed-free.</p>	<p>Construction Contractor Park Vegetation and Restoration Specialist Park Wildlife Biologist</p>
Vegetation	<p>Construction limits will be mapped and may be flagged or fenced to protect sensitive areas. Work near wetland or riparian areas will follow Best Management Practices to minimize impacts (siltation, erosion, compaction, etc.).</p> <p>Install temporary barriers to protect natural surroundings (including trees, plants, and root zones) and highly sensitive sites, such as creek</p>	<p>Construction Contractor Park Vegetation and Restoration Specialist</p>

Resource	Mitigation Measures	Coordinate With
Vegetation	<p>edges and wetlands, from damage. Vegetation to be preserved within the project area will be clearly identified by marking, fencing, or another appropriate technique.</p> <p>An invasive plant prevention plan will be prepared by the contractor prior to bringing construction equipment and materials into the park (including hazard tree removal) that specifies the locations and methods for removing existing non-native species; directions and requirements for construction contractor equipment including washdown and/or cleaning, ensuring construction-related equipment arrives on site free of mud or seedbearing material; certifying all seeds and straw material as weed-free; identifying and treating areas of noxious weeds prior to construction; revegetating with appropriate native species; and monitoring the restored site annually for three years to ensure absence of noxious weeds, successful revegetation, plant maintenance, and replacement of unsuccessful plant materials. The plan will be provided to the park for approval prior to work. The project site will be monitored for invasives and treated as necessary following invasive plant management program protocol for up to two years following construction.</p> <p>The park will monitor the success of revegetation efforts. Plant materials used for revegetation will be required to remain alive and in a healthy, vigorous condition for a period of one year after final acceptance of planting. All plants determined to be in unhealthy condition will be replaced.</p> <p>Prior to entry into the park, heavy equipment will be steam cleaned to prevent importation of non-native plant species, and inspected to ensure that hydraulic fittings are tight, hydraulic hoses are in good condition and replaced if damaged, and there are no petroleum leaks.</p> <p>The project area will be inspected to ensure that impacts stay within the parameters of the project area and do not escalate beyond the scope of the environmental assessment.</p> <p>The project contractors will be required to conform to all applicable permits or project conditions. All construction equipment will be stored within the delineated work limits and work areas within creek channels will be confined to the smallest area necessary, and within parameters of permits.</p> <p>Trees to be removed in selective vegetation removal will be flush cut, but not grubbed.</p> <p>Shrubs will be flush cut unless previously identified for grubbing (such as those that rootcrown sprout like ceanothus).</p> <p>Removal of vegetation will be done carefully to avoid damage to remaining vegetation.</p> <p>A contractor damage clause for impacts to trees/vegetation not within the project area will be part of the contract for road rehabilitation.</p>	<p>Construction Contractor</p> <p>Park Vegetation and Restoration Specialist</p>

Resource	Mitigation Measures	Coordinate With
Vegetation	<p>The specific locations and type of vegetation work will be identified, specified in plans and approved by the contracting officer based on consultation with the park vegetation ecologist and forester.</p> <p>Only native species, appropriate to the site will be used in revegetation (seeding or planting).</p> <p>Salvage of topsoil and duff will occur in and adjacent to the rehabilitated shoulders and salvage of vegetation will occur to the degree possible, staff time and need permitting; however, most plants will be propagated from seed collected within each plant community along the road where revegetation is needed.</p> <p>Established vegetation on cut or fill slopes will be retained unless it impedes visibility or road maintenance operations. Older plants have well-developed root systems that anchor soils on slopes. Younger plants have poorly developed root systems that hold only a small amount of soil and may actually destabilize slopes by adding extra weight.</p> <p>The South Landing staging area will be surveyed and treated for invasive species prior to beginning rehabilitation work.</p>	<p>Construction Contractor</p> <p>Park Vegetation and Restoration Specialist</p>
Wildlife	<p>Preconstruction surveys shall be conducted by a qualified biologist to identify the number, type and location of special status bird, bat and aquatic species within the project area. Structures and habitats that provide hibernacula, nursery colonies, or roosting habitat are to remain and other protective measures shall be identified during surveys.</p> <p>Contractors and Project Manager will be provided with information regarding protection of special species wildlife at project briefings and they will be given specifications including Best Management Practices to avoid activities that are destructive to wildlife and habitats.</p> <p>The project manager will consult with the NPS biologist to schedule construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods.</p> <p>Work in and around riparian areas (ponds, streams, meadows) will be scheduled to avoid spring and early summer (nesting and breeding season). Stream culvert work will be scheduled for low-flow conditions. Trees that are not immediate hazards will be removed after the nesting season, in fall (September-November). For trees needing removal outside of fall, the project manager and forester will coordinate with the park wildlife biologist to determine whether there are nesting species of concern present prior to removal.</p> <p>Routes of escape for animals that might fall into excavated pits and trenches will be maintained (minimize length of time trenches remain open; insert planks or sticks as exit routes for amphibians and small mammals). During construction activities, contractor personnel will maintain vigilance for animals caught in excavations</p>	<p>Construction Contractor</p> <p>Park Wildlife Biologist</p>

Resource	Mitigation Measures	Coordinate With
Wildlife	<p>and take appropriate action to free them.</p> <p>Impacts of light and construction noise will be minimized where possible to avoid disturbance to nesting and breeding wildlife, especially if conducting night work.</p> <p>If wildlife is observed nesting in the project area, the area will be avoided while the project manager consults with the park biologist to determine how/when construction activities should resume to avoid disruption and nest abandonment.</p> <p>Proper food storage is mandatory, and important to protect the park's bear population. Violators will be cited.</p> <p>All food, toiletries, and scented items (e.g., bug spray) will be placed in bear boxes at the construction site. Bear boxes must remain closed and latched at all times, unless items are being retrieved. No trash, food, toiletries, or scented items will be stored in vehicles or left outside of bear boxes.</p> <p>The contractor is responsible for ensuring all food and food-related waste will be disposed of promptly, in a bear-proof receptacle. All vehicles shall be checked daily to ensure that no items that may attract bears remain inside an unattended vehicle. Items that will 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.</p> <p>All windows and doors in recreational vehicles or trailers used for lodging or office space will be closed and latched when not occupied.</p> <p>The job site will be checked at the end of each day for trash, food, and food-related items remaining at the site.</p>	<p>Construction Contractor</p> <p>Park Wildlife Biologist</p>
Special Status Species	<p>The project manager will consult with the park wildlife biologist prior to construction, to identify areas of concern and to schedule surveys and plan phases of work appropriately to avoid impacts to special status species.</p> <p>Precaution will be taken to avoid impacts to special status species, particularly state and federally listed and candidate species and their habitat. These include, but are not limited to: Mt. Lyell salamander, Sierra Nevada mountain yellow-legged frog, Yosemite toad, Pacific fisher, and great gray owl.</p> <p>Preconstruction surveys will be conducted by a qualified biologist to identify the number, type, and location of special status bird, bat, other mammal species, and aquatic species within the project area.</p> <p><b>Specific Species Considerations:</b></p> <p><b>American pika:</b> American pika have been observed in the Olmsted quarry at various times of the year. The Selected Action will not utilize the quarry for this project to avoid disturbance to the pika's habitat, which is located in the upper western portion of the quarry</p>	<p>Construction Contractor</p> <p>Park Wildlife Biologist</p>

Resource	Mitigation Measures	Coordinate With
Special Status Species	<p>where large boulders and rocks occupy the quarry floor.</p> <p><b>Mt. Lyell salamander:</b> Schedule construction activities to occur during daylight hours. Avoid trenching, staging, and ground disturbance directly adjacent to granite cliffs, rocky zones, waterfalls and streams during snowmelt (May/June). In the rare event that a salamander or salamander nest is found during construction, the project manager shall avoid directly disturbing the salamander, postpone work in the immediate vicinity (20 m radius), and document its location/habitat and notify the wildlife biologist to relocate the animal(s) to nearby suitable habitat out of harm's way.</p> <p><b>Sierra Nevada yellow-legged frog:</b> In the event that SNYLF are present, a NPS approved biologist will monitor ground disturbance and construction activities within and adjacent to SNYLF habitat.</p> <p>If suitable Sierra Nevada yellow-legged frogs (SNYLF) habitat exists within, or adjacent to, the project area, a NPS biologist will determine if SNYLF are present either by checking existing data sources, or by conducting surveys between June 1 and September 15. Surveys will be conducted during the frog's active season which varies by elevation, habitat, and snow pack. If SNYLF are detected, the biologist will inform the Project Manager how best to avoid harm during construction activities, and may recommend delaying/rescheduling work in that particular area or minimizing the diversion of water from streams.</p> <p>If surface water is present in streams or other drainages during culvert removal and construction, or bridge construction, a dewatering and diversion plan will be developed in consultation with the NPS biologist. Water pump intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent amphibians and other aquatic wildlife from entering the pump system. Water will be released or pumped downstream at an appropriate rate to avoid scour and sedimentation. The methods and materials used in any dewatering (diversion) will be determined by the NPS biologist, in consultation with regulatory agencies (United States Fish and Wildlife Service, United States Army Corps of Engineers, Regional Water Quality Control Board, State Water Resources Control Board). Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration to the streambed will be minimized to the maximum extent practical. Any imported material will be removed from the streambed upon completion of construction activities within the waterway.</p> <p>Protective barriers will be placed around aquatic habitats to protect</p>	<p>Construction Contractor</p> <p>Park Wildlife Biologist</p>

Resource	Mitigation Measures	Coordinate With
Special Status Species	<p>them from damage and to clearly delineate the project area. Work near aquatic habitats will follow Best Management Practices to minimize impacts (siltation, erosion, and compaction). Barriers will be installed prior to construction and field inspected by NPS biologist to verify proper placement. Construction limits will be mapped and may be flagged or fenced to protect sensitive areas.</p> <p>Containments, ditches, and other construction features that may trap wildlife will include wildlife escape ramps and the features will be inspected in the morning before beginning work and at the end of the day to ensure that no animals have</p>	<p>Construction Contractor</p> <p>Park Wildlife Biologist</p>
Hydrology	<p>A stormwater pollution prevention plan will be prepared by the construction contractor and implemented for construction activities to control surface run-off, reduce erosion, and prevent sedimentation from entering water bodies during construction. The plan will be submitted for park review and approval prior to construction.</p> <p>Develop and implement a comprehensive spill prevention/response plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements. The spill prevention/response plan will be submitted to the park for review/approval prior to commencement of construction activities.</p> <p>Oil and hazardous materials spill prevention control, and countermeasure plan will be prepared by the construction contractor for the project to address hazardous materials storage, spill prevention and response. The plan will be submitted for park review and approval prior to construction.</p> <p>Wastewater contaminated with silt, grout, or other by-products from construction activities will be contained in a holding or settling tank to prevent contaminated material from entering watercourses or wetlands.</p> <p>Temporary sediment control devices will be employed, such as filter fabric fences, sediment traps, or check dams as needed during culvert replacement.</p> <p>Any stockpiled soil will be covered throughout the duration of the project with semi-permeable matting or plastic or another type of erosion control material.</p> <p>Soil disturbance will be minimized and reseeded or revegetation of disturbed areas will be accomplished as soon as practical.</p> <p>Silt fencing or biodegradable sediment logs will be retained in disturbed areas until stabilization (by reseeded or revegetation) occurs.</p> <p>Swales, trenches, or drains will be employed to divert stormwater</p>	<p>Environmental Planning and Compliance Water Quality Permitting Coordinator</p>

Resource	Mitigation Measures	Coordinate With
Hydrology	<p>runoff away from disturbed areas.</p> <p>Staging areas will be located away from areas where water can runoff to adjacent rivers and streams.</p> <p>Tackifier/paper mulch will be used for erosion control in revegetated areas and/or silt fences and seed-free sediment control barriers for erosion control.</p> <p>Site watering and truck speeds will be managed as appropriate to control dust. When hauling dry materials, truck beds will be securely covered to prevent blowing dust or loss of debris.</p> <p>Submission and review of an erosion control plan and stormwater pollution prevention plan will be required (as also required by the California Water Quality Control Board).</p> <p>The contractor will install protective construction fencing around, adjacent to or near wetland and/or riparian areas that are to be protected or other erosion control measures to protect water resources in the project area.</p>	Environmental Planning and Compliance Water Quality Permitting Coordinator
Wetlands	Protect wetlands from damage caused by construction equipment, erosion, siltation, and other ground disturbing activities. The contractor will not fasten ropes, cables, or fences to trees. The contractor will install signs as needed to direct contractor workers use to more appropriate areas.	Project Manager
Soundscapes	<p>Stationary noise sources shall be located as far as possible from known wildlife nesting areas, residential housing and visitor lodging and camping areas.</p> <p>Construction equipment shall not be left running while standing by. All on site work that generates noise levels above 76 decibels at the site boundary in the vicinity of such areas shall be done between 8am and 5pm.</p>	Project Manager
Archeology	<p>The park archeologist and American Indian liaison will be notified of the specific work schedule prior to staging and construction.</p> <p>Prior to construction, fencing will be placed at archeological site locations to ensure protection of previously undisturbed deposits.</p> <p>Archeological and Native American monitors will be present to ensure the protection of archeological sites, monitor ground disturbance at archeological sites within the road corridor, provide an educational message for construction crews, and document any inadvertent discoveries. Monitoring will focus on areas where buried historical deposits might be present beneath existing development.</p> <p>Prior to construction, a monitoring plan will be prepared, detailing the final construction plans, the cultural material that might be encountered, important archeological questions that could be addressed (following the park's archeological research design), and a range of treatment options (e.g., avoidance, National Register of Historic Places evaluation, data recovery) for any inadvertent findings.</p>	Park Archaeologist and American Indian Liaison

Resource	Mitigation Measures	Coordinate With
Archeology	<p>When it is necessary to stop work due to archeological resources discovery, the contractor will cease all activities in the area of discovery; allow the archeologist to complete investigations; and take measures to protect the resources discovered as directed by the park.</p> <p>In the unlikely event that human remains or any objects protected under the Native American Graves Protection and Repatriation Act are exposed, the National Park Service will follow procedures outlined in Native American Graves Protection and Repatriation Act regulations (including the potential need to stop work for a minimum of 30 calendar days). Work may resume in non-sensitive areas during this time.</p>	Park Archaeologist and American Indian Liaison
American Indian Traditional Cultural Practices	<p>Tribal consultation will be ongoing throughout project implementation.</p> <p>All ground disturbing activities in the vicinity of culturally sensitive areas (including <u>all</u> archeological sites) will be monitored by an American Indian cultural specialist.</p>	Project Manager and Contractor working with the park tribal liaison
Historic Structures/Cultural Landscapes	<p>The road's existing 10-foot travel lanes and vertical and horizontal alignment will be maintained. The park will ensure that during the resurfacing and repair of the road, no additional historic features (that have not already been identified in this document), are adversely affected by construction activity.</p> <p>All contributing features affected by the project will be documented in accordance with Yosemite's 1999 PA:</p> <ul style="list-style-type: none"> <li>• Stipulation VIII A.1 (b): Documentation by black and white 5-inch by 7-inch photographic prints before and after construction. Copies of documentation will be deposited at the Yosemite archives and with the State Historic Preservation Officer.</li> <li>• Stipulation VIII.A.2: Salvage of historic masonry materials for new culvert headwalls.</li> </ul> <p>Historic culvert headwalls will be maintained, where possible, or repaired in kind, on a case by case basis, in consultation with the park historical landscape architect. If additional stone is necessary for these headwalls, it will match the size, texture, color and masonry pattern of the existing stone. Replacement and/or addition of new stone will be done to replicate the character of the joints, including mortar, if present. New headwalls will be date-stamped in a location that allows for easy identification and clearly distinguish it from historic fabric. Depending on the type of the wall (concrete, masonry, dry laid), the park would require the contractor to date stamp either the stone, mortar or concrete structure with a device compatible with the material selected for the construction of</p>	Park Historic Landscape Architect Park Historic Architect

Resource	Mitigation Measures	Coordinate With
Historic Structures/Cultural Landscapes	<p>the wall.</p> <p>New drop inlets will be placed where needed to accommodate drainage, and designed in consultation with park resources staff to blend with the local site. Where granite is used, it will be of a color and texture similar to historic headwalls.</p> <p>Riprap at culvert outlets will be as unobtrusive as possible. Stone will be selected to blend with the environment and/or match historic riprap used in adjacent areas along the road.</p> <p>Informal parking areas that are being formalized will be designed in a manner that is compatible with the overall design of the historic road using similar design and materials to ensure compatibility.</p>	<p>Park Historic Landscape Architect</p> <p>Park Historic Architect</p>
Public Safety	<p>The construction contractor will prepare a health and safety plan to address all aspects of contractor health and safety issues compliant with OSHA standards and other relevant regulations. The plan will be submitted for park review and approval prior to construction.</p> <p>An oil and hazardous materials spill prevention, control, and countermeasure plan will be prepared by the construction contractor for the project to address hazardous materials storage, spill prevention and response. The plan will be submitted for park review and approval prior to construction.</p> <p>The Underground Services Alert (USA) will be informed by construction personnel 72 hours prior to any ground disturbance to enable Valley Utilities staff to verify the on-site location and depth (elevation) of all existing utilities and services through field survey (potholing).</p>	<p>Project Manager</p> <p>Park Safety Officer</p>
Visitor Experience and Recreation	<p>The park will develop a communications strategy plan to alert necessary park and concessioner employees, residents, and visitors to pertinent elements of the construction work schedule.</p> <p>Supervisory construction personnel will attend an environmental protection briefing provided by the park prior to working on site. This briefing is designed to familiarize workers with statutory and contractual environmental requirements and the recognition of and protection measures for archeological sites, sensitive habitats, water resources, and wildlife habitats.</p> <p>Protective barriers will be placed around areas adjacent to the project area that require special attention as identified by the park, such as specified staging areas, trees, plants, root zones, river edges, aquatic habitats, wetlands, sensitive wildlife habitats, cultural resource features, and infrastructure. Barriers will be installed prior to construction and field inspected by natural and cultural resource personnel to verify proper placement.</p> <p>Stationary noise sources will be located as far as possible from residential housing and visitor lodging and camping areas. Construction equipment will not be left running while standing by. All on site work that generates noise levels above 76 decibels at the site boundary in the vicinity of residential housing and visitor</p>	<p>Project Manager</p> <p>Park Public Outreach and Engagement Office</p>

Resource	Mitigation Measures	Coordinate With
Visitor Experience and Recreation	lodging and camping areas will be done between 8 am and 5 pm. Appropriate signage will be located and sequenced during construction activities to ensure safe and efficient traffic and pedestrian circulation. Information about traffic detours and recreational closures will be provided to visitors as they enter the park at each entrance station as well as at visitor centers.	Project Manager Park Public Outreach and Engagement Office
Park Operations	A transportation plan will be prepared by the construction contractor to ensure safe and efficient pedestrian and vehicle circulation (including park operations and emergency vehicles) during construction. The plan will determine the phasing and sequencing of signage to route visitors around construction areas and to day use parking and other appropriate locations. The plan will be submitted for park review and approval prior to construction.  Disruption of utility service will require advanced notification to the park, concessioners, and residents prior to scheduled disruptions. Unexpected interruptions due to construction activities will promptly be reconnected.	Project Manager

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## **PUBLIC INVOLVEMENT**

### **Public Scoping**

Public scoping comments were used to assist the park in clarifying the purpose and need identifying possible actions and in developing a range of reasonable and feasible project alternatives that meet the purpose and need, including a No Action Alternative, and then analyzing the environmental impacts of each alternative in the environmental assessment. A 30-day public scoping period for the Tioga Road Rehabilitation Project was conducted from February 4, 2010, through March 5, 2010. Two public open houses were held to inform interested parties about the proposed project and solicit comments from members of the public in order to understand the spectrum of concerns, interests, and issues that should be considered in the planning process. The first meeting was held at the public library in Groveland, California on February 18th from 6 p.m. to 8 p.m. The second meeting was held at the Valley Visitor Center Auditorium in Yosemite Valley on February 24th from 1 p.m. to 4 p.m. Comments were invited for submission by mail, fax, email, through the Planning, Environment, and Public Comment (PEPC) system, and on comment forms that were made available during public scoping meetings. During the scoping period, 11 comment letters were received, generating 18 individual substantive comments. In addition, a public site visit was held along Tioga Road on October 29, 2010.

The following overarching issues were identified for consideration during the public scoping process:

- Maintain the historic integrity of the road by not widening it.
- Address safety issues such as vegetation removal, widening the road width and turnout formalization.
- Include cleanup of road corridor into the scope of the project.

### **Public Review and Comment Period**

The *Tioga Road Rehabilitation Environmental Assessment* formal public review period occurred from August 8th through September 8th. One public site visit was held on August 23, 2011 at Sunset View turnout within Yosemite National Park. The scoping announcement was included in the *Yosemite National Park Electronic Newsletter*, which has approximately 7000 subscribers. Copies of the EA were mailed to 50 recipients with four copies going to local libraries to increase availability. A press release was issued on August 8, 2011 and printed in the *Mariposa Gazette* on August 10, 2011. The plan was presented at Open Houses at the Valley Visitor Center on July 27, 2011 and August 31, 2011. Written public comments were received though email and online through the PEPC website. The National Park Service received 12 individual letters from 9 individuals and 3 organizations (San Francisco Hetch Hetchy Water and Power, Central Sierra Environmental Resource Center, and Sierra Club), during the public review and comment period.

The main concerns expressed in public comments included:

- Concerns regarding road safety on Tioga Road.
- Maintain culturally significant width.
- Cost and quality concerns for using recycled asphalt.
- Improved signage for safety and traffic/parking issues.
- Keep snow poles in place year round.
- Use Yosemite granite quarry to provide stones for culverts and aggregate for road surface.
- Consider using permeable paving methods.
- Concerns regarding runoff of petroleum products from roads and parking features.
- Concerns regarding staging location near pika populations. Consider additional mitigation measures.
- Implement mitigation measures for the Mount Lyell salamander and Sierra Nevada yellow-legged frog.
- Address emissions from idling vehicles during construction.
- Consider additional noise mitigation measures such as damping materials, enclosures, barriers or mufflers.
- Do not open Tioga Road during winter.
- Consider park fees based on gross vehicle weight of vehicles using the road.
- Reduce the number of turnouts that will be formalized and increase those that will be restored.
- Incorporate a permanent berm on the edge of the road prism above the Tuolumne corral.
- Concerns regarding non-paved turnouts and parking off pavement illegally.

All comments received during the public comment period have been duly considered by the National Park Service, those considered substantive were analyzed for potential modifications to the project's scope of work. Public concerns did not result in any changes to the alternatives presented in the EA or the proposed action. Internal scoping and consultation with other governmental agencies and American Indian tribes and groups informed the planning process.

## **AGENCY CONSULTATION**

### **Federal Highway Administration**

The National Park Service has been coordinating with the Federal Highway Administration regarding the rehabilitation plans for the Tioga Road Rehabilitation Project. The project is a Federal Highway Administration 3-R project and the agency is developing the engineering plans with Yosemite National Park and National Park Service Pacific Region staff.

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

The National Park Service is coordinating with the U.S. Army Corps of Engineers regarding wetland permitting for the Tioga Road Rehabilitation Project. The National Park Service will

submit a Clean Water Act section 404 wetland fill permit application to the U.S. Army Corps of Engineers for the Tioga Road Rehabilitation Project if necessary.

### **U.S. Fish and Wildlife Service**

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The National Park Service obtained a list of federally listed endangered and threatened species that may be present in the Tioga Road corridor from the U.S. Fish and Wildlife Service. The list was used as the basis for the special status species analysis in the environmental assessment. The U.S. Fish and Wildlife Service has reviewed the Environmental Assessment and requested continued coordination through the completion of the Tioga Road Rehabilitation Project. A Biological Assessment is being prepared in anticipation of the listing of the Sierra Nevada Yellow-Legged Frog. Consultation and coordination will continue through implementation of the project.

### **California State Historic Preservation Officer/Advisory Council on Historic Preservation**

A Programmatic Agreement among the National Park Service at Yosemite, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Planning, Design, Construction, Operations and Maintenance was developed in consultation with American Indian tribes having cultural association with Yosemite National Park, and was executed in October 1999. Pursuant to Article VI of the 1999 Programmatic Agreement, the review process for Section 106 of the National Historic Preservation Act of 1966, as amended, a historic context and determination of eligibility (DOE) report for Tioga Road has been prepared. The State Historic Preservation Office has concurred with the park's DOE and with the NPS-defined contributors and non-contributors on February 21, 2012.

The Tioga Road Rehabilitation project focuses on resurfacing, restoration, and rehabilitation; there are five areas where contributing headwalls will need to be rebuilt to improve the road's hydrologic function. There are a total of 772 structures along the road that have been identified as contributors to the historic district; only five will be altered. The park has determined these actions will result in an adverse effect; however the impact to the integrity of the historic district will not be significant.

In accordance with Stipulation VIII of 1999 Programmatic Agreement (Resolution of Adverse Effects), the park proposes to implement the following standard mitigating measures:

- Stipulation VIII.A.1(b) – Recordation  
Documentation will be by black and white 5 x 7 photographic prints and a Historic Record that includes a narrative history. Copies will be deposited in the Yosemite Archives and with your office.
- Stipulation VIII.A.2 – Salvage  
The original headwall components affected by installation of larger culverts will be salvaged and reused in the new structures in a manner consistent with the original design for the headwalls. Additional stone needed to complete the larger walls will

match the color and character of the existing granite headwalls. A date stamp identifying the year of the work will be marked in the mortar in a location that will be evident for future reference.

On April 5, 2012, the National Park Service notified the California State Historic Preservation Officer of the implementation of standard mitigation measures per Stipulation VIII of the 1999 Programmatic Agreement and provided a copy of the environmental assessment for review. On June 12, 2012, state historic preservation officer staff responded that the proposed use of standard mitigation measures would be acceptable pending clarification of the plan for addressing inadvertent discoveries and other comments. These clarifications are addressed in the errata to the environmental assessment. The Yosemite Section 106 coordinator has reviewed the undertaking per the 1999 Programmatic Agreement and the National Park Service ensures that decisions regarding this undertaking have been made and will be carried out in conformance with the standards and guidelines in the Programmatic Agreement stipulations. The National Park Service will continue to communicate with the California State Historic Preservation Officer through design and construction of the project as necessary.

The NPS has determined that implementation of the Selected Action will have no adverse effect on archaeological or traditional cultural properties. Components of the Selected Action would be designed to avoid or minimize impacts to historic properties, pursuant to the 1999 Programmatic Agreement.

### **American Indian Consultation**

Yosemite National Park will continue to conduct on-going consultation with American Indian tribes and groups having cultural association with the Tioga Road corridor. In March of 2010 a letter was sent to all park-associated groups initiating formal consultation for the *Tioga Road Rehabilitation Environmental Assessment*. A site meeting was held on October 27, 2010 with interested groups. The Southern Sierra Miwuk Nation (also known as the American Indian Council of Mariposa County, Inc.) and the Tuolumne Me-Wuk Tribal Council have expressed interest in consulting on the project.

Extensive American Indian consultation has been carried out on projects within the current area of potential effect. The *Tuolumne Wild and Scenic River Comprehensive Management Plan and EIS* area of potential effect is located within the same area of potential effect as the present study—from the Tioga Pass entrance station to Tuolumne Meadows. The area of potential effect of the *Tenaya Lake Area Plan Environmental Assessment* also coincides with the area of potential effect for the present study in the area from Sunrise Trailhead parking area to the East Beach parking area.

In 2005, in support of the *Tuolumne Wild and Scenic River Comprehensive Management Plan*, Yosemite National Park initiated formal consultation with the seven tribes and groups that have indicated ancestral cultural association with the park. These tribes and groups are the Bishop Paiute Tribe, Bridgeport Paiute Indian Colony, Mono Lake Kutzadika'a Tribe, North Fork Rancheria of Mono Indians, Picayune Rancheria of the Chukchansi Indians, the Southern Sierra Miwuk Nation (also known as the American Indian Council of Mariposa County, Inc.), and the Tuolumne Me-Wuk Tribal Council. In May 2007, the park

superintendent sent a letter to these groups to inform them of the commencement of work on an ethnographic context for the project. The Picayune and North Fork responded that they did not require consultation about the project region at that time. Formal introductions and meetings were held between NPS representatives and two tribal groups, Tuolumne Me-wuk Tribal Council and the American Indian Council of Mariposa County, who requested consultation.

Following the annual All-Tribes meeting held in Tuolumne Meadows in 2007, an eighth group, the Washoe Tribe of Nevada and California, was identified as having ancestral affiliation with the project area. During the consultation process it was also discovered that the Yosemite-Mono Lake Paiute Indian Community (not organizationally associated with the Mono Lake Kutzadika'a Tribe) and the Big Pine Paiute Tribe of the Owens Valley had interest in the project area. None of these groups formally consulted with Yosemite National Park at the time of the study, but informal consultation and interviews were carried out with each of the groups.

Consultation with park-associated American Indian groups was initiated in July of 2008 in support of the *Tenaya Lake Area Plan* which includes rehabilitation of Tioga Road through the project area. A site visit with park staff was held in October 2008. A discussion of the project was also held at the Eastern Sierra Paiute All-Tribes government-to-government meeting in October 2008. A site visit was conducted on August 17, 2011 to discuss the *Tenaya Lake Area Plan* and the *Tioga Road Rehabilitation* project. Archeological work in support of the Tenaya Lake Area Plan was conducted in 2009, 2011 and 2012 in consultation with the park-associated tribes and groups. Draft work plans and reports were submitted to the Bishop Paiute Tribe, Mono Lake Kutzadika'a Tribe, Bridgeport Paiute Indian Colony, Picayune Rancheria of the Chukchansi Indians, Tuolumne Band of Me-Wuk Indians, North Fork Rancheria of Mono Indians, and American Indian Council of Mariposa County, Inc. (Southern Sierra Miwuk Nation). A Native American cultural monitor was present for all subsurface archeological investigations.

The American Indian tribes and groups also received copies of the Tioga Road Rehabilitation Environmental Assessment for review and comment. Consultation and partnering will continue with the American Indian tribes and groups throughout the planning and implementation of the Tioga Road Rehabilitation Project.


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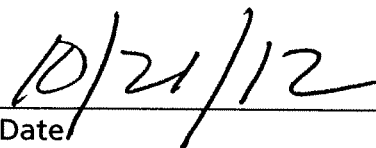
**CONCLUSION**

Based on the information contained in the *Tioga Road Rehabilitation Environmental Assessment* as summarized above; the minimal nature of comments received from affected agencies and the public; and the incorporation of mitigation measures and Best Management Practices to avoid or reduce potential direct, indirect and cumulative impacts; it is the determination of the National Park Service that the Selected Action is not a major federal action significantly affecting the quality of the human environment.

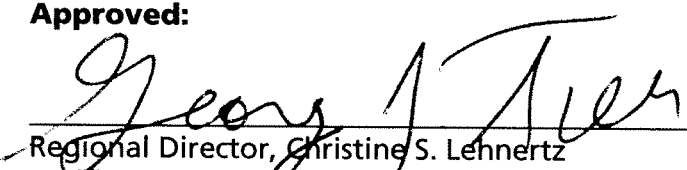
In accordance with the National Environmental Policy Act of 1969 and regulations of the Council of Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared. The Selected Action, as detailed above, may be implemented as soon as practicable.

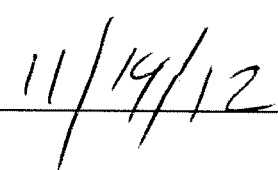
**Recommended:**

  
\_\_\_\_\_  
Superintendent, Don L. Neubacher  
Yosemite National Park

  
\_\_\_\_\_  
Date

**Approved:**

  
\_\_\_\_\_  
Regional Director, Christine S. Lehnertz  
Pacific West Region

  
\_\_\_\_\_  
Date

## Determination of Non-Impairment

### DEFINITION OF IMPAIRMENT

The National Park Service (NPS) Management Policies 2006 state in section 1.4.5, What Constitutes Impairment of Park Resources and Values provide the following explanation of impairment:

*Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value 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 in the park's General Management Plan or other relevant NPS planning documents as being of significance.*

*An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values, and it cannot be further mitigated.*

NPS Management Policies 2006, section 1.4.6 identifies the park resources and values that are subject to the no-impairment standard:

The "park resources and values" that are subject to the no-impairment standard include:

- The park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, 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, to the extent that can be done without impairing them;
- The parks' role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

Any additional attributes encompassed by the specific values and purposes for which the park was established.

## **NON-IMPAIRMENT DETERMINATION**

The NPS Management Policies 2006 states that a non-impairment determination must include a discussion for each impacted cultural and natural resource analyzed in detail in the associated EA or EIS, and why the Selected Action's impacts will not result in impairment. The impairment determination does not include discussion of impacts to visitor experience, socioeconomics, public health and safety, environmental justice, land use, park operations, etc., as these do not constitute impacts to park resources and values subject to the non-impairment standard.

The evaluation of impairment of park resources and values below was based on the type and intensity of impacts and the types of resources affected. Overall, beneficial impacts would not constitute impairment. Moderate and major adverse impacts may constitute impairment but do not automatically do so. Rather, these impacts must be analyzed with respect to the bulleted criteria above.

The following resources were evaluated for impairment on park resources and values resulting from implementation of the Selected Action from Tioga Road Rehabilitation Plan:

- Geology and Soils
- Hydrology and Water Quality
- Vegetation
- Wildlife
- Wetlands
- Special Status Species
- Air Quality
- Soundscapes
- Historic Structures/Cultural Landscapes
- Archeological Resources
- Scenic Resources

### **Geology and Soils**

The portion of Tioga Road addressed in this analysis stretches from Crane Flat, at approximately 6,200 feet above mean sea level, to the Blue Slide area, at approximately 8,600 feet above mean sea level. This portion of Tioga Road is underlain almost entirely by granitic bedrock of the various plutons that comprise much of the Sierra Nevada batholith. Exposed slabs of granitic bedrock are increasingly common as one travels higher in elevation along the route from west to east, culminating in the glacially sculpted domes and slopes near Tenaya Lake and Tuolumne Meadows. Tioga Road cuts across competent, glacially scoured bedrock near Olmsted Point, whereas roadcuts near Blue Slide expose steep slopes of unconsolidated glacial till left behind in large moraines.

The roadcuts near Blue Slide present a geologic hazard as the unconsolidated, clay-rich slopes are susceptible to erosion and falling boulders. Other steep slopes along the road are also susceptible to rock falls, primarily by failure of exfoliation sheets. Implementation of the

Selected Action will not physically affect or result in changes that would impair geologic features. The park's geology will remain protected and available for enjoyment by park visitors. Impacts to the geology associated with the Selected Action will be localized, long-term negligible to moderate and beneficial along and adjacent to portions of the Tioga Road. The Selected Action will not impair geologic resources of the park for future generations.

### **Hydrology and Water Quality**

Numerous rivers and creeks drain the western Sierra Nevada in the project area; the Tuolumne River to the north and the Merced River to the south are the major drainages. The Tuolumne River drains the entire northern portion of the park, an area of approximately 428,115 acres (669 square miles). It flows into Hetch Hetchy Reservoir, a major water supply for the City and County of San Francisco, before it leaves the park. The main stem and the south fork of the Merced River drain the southern portion of the park, approximately 319,840 acres (499 square miles).

Hydrologic features are one of the key natural resources for which the park was established. Because these resources, including floodplains, will not be affected beyond the current condition and there will not be a change to the natural integrity of the park; the Selected Action will not result in impairment to park hydrology. Impacts to hydrology, floodplains, and water quality associated with the Selected Action are expected to be localized, minor to moderate and beneficial. The Selected Action will not impair the hydrologic resources of the park for future generations.

### **Vegetation**

The project area along Tioga Road extends from approximately 6,200 to 8,600 feet and is within the upper montane and subalpine forest zones. Within these broadly defined zones, however, the vegetation can be further classified on the basis of the growth form, identity, and cover of the dominant plant species and includes a variety of herbaceous, scrub, and woodland types.

Under the Selected Action construction activities have the potential to result in local, short-term, minor, adverse impacts on the size and continuity of native plant communities. Implementation of Best Management Practices during construction would minimize impacts on surrounding vegetation communities. The removal of select trees to improve site distance requirements along the road will result in local, long-term, minor, adverse impacts on the size and continuity of native plant communities in the project area.

The Selected Action will help to protect and enhance high value habitat areas along the Tioga Road through the formalization of roadside parking areas and the improvement of drainage facilities adjacent to the roadway. Areas of resource encroachment will be minimized and natural hydrologic processes restored, resulting in long-term, minor, beneficial impacts to vegetation resources. The Selected Action will not impair the vegetation resources of the park for future generations.

### **Wildlife**

The park supports a diverse and abundant assemblage of wildlife. With the implementation of mitigation measures for wildlife species (refer to Table 1 of the Finding of No Significant

Impact), temporary noise and visual disturbance from construction activities would result in local, short-term, minor, adverse impacts. There will be a local, long-term, minor, adverse impact on upland habitat from removal of trees and some road widening for fire access road improvements. Implementation of mitigation measures with a focus upon avoidance, limiting construction activities during breeding seasons, or conducting detailed surveys immediately before construction, would minimize impacts on wildlife habitat and populations.

The Selected Action will help to protect and enhance high value habitat areas along the Tioga Road through the formalization of roadside parking areas and the improvement of drainage facilities along the roadway. Areas of resource encroachment will be minimized and natural hydrologic processes restored, resulting in long-term, minor, beneficial impacts to wildlife resources. Therefore, the Selected Action will not impair the park's wildlife resources for future generations.

### **Wetlands**

A Wetland Delineation report was prepared concurrently with this environmental assessment. The results of the report determined that the overall functions and values of wetland habitats along the Tioga Road Rehabilitation project corridor were very high. The functional assessment located 43 wetland areas (a total of 29.11 acres) along the Tioga Road Corridor, and included hydrologic function, biotic function, sediment/shoreline stabilization function, biological value, recreational value, and education value.

Wetland areas are a natural resource that contributes to the park's purpose. Implementation of mitigation measures with a focus upon avoidance, limiting construction activities in and around wetland areas will minimize impacts on the wetlands associated with the Tioga Road. Wetland areas will not be affected beyond the current condition under the Selected Action; there will be no change to the natural integrity of the park, or discernible effects that will impair park vegetation or opportunities for visitors to experience.

The Selected Action will result in local, short-term, minor, adverse effects on wetlands and aquatic resources from construction activities and local, long-term, minor to moderate, beneficial effects on wetland and aquatic resources due to the rehabilitation of existing culverts, addition of new culverts, and installation of a permeable subgrade in areas prone to seasonal flooding. The Selected Action will not impair the wetland and aquatic resources of the park.

### **Special Status Species**

Thirty-eight wildlife species currently have special status under either California or federal endangered species legislation, two of which are believed extirpated from the park. Many plants endemic to the Sierra Nevada are considered rare within the park and are given special protection. These species are considered key to the natural integrity of the park and are considered significant by their rare nature.

The project will occur in suitable habitat and foraging areas for special status bird and bat species. The implementation of mitigation measures with a focus upon avoidance, limiting construction activities during breeding seasons, limiting construction activities to daytime hours, conducting detailed surveys immediately before construction, and limiting areas of disturbance, will minimize impacts on these species. With mitigation, implementation of the

Selected Action will not impair special status species.

Implementation of the Selected Action will help protect and enhance high value habitat areas along the Tioga Road corridor through the formalization of roadside parking areas and the improvement of drainage facilities. Areas of potential resource encroachment will be minimized and natural hydrologic processes restored, resulting in long-term, minor, beneficial impacts to special status species. Therefore, the Selected Action will not impair the park's special status species for use and enjoyment by future generations.

### **Air Quality**

There are many sources of air pollutants in the park that affect the project area, including sources outside of the park (primarily from the Central Valley) and in-park sources, such as vehicle emissions and campfires. Since this project is not expected to affect non-construction vehicle trips or traffic volumes, non-construction vehicular emissions are not addressed.

There are currently no known sources of emissions from the project area; the Selected Action will result in very localized, short-term, negligible to minor, increases in pollutants from dust and vehicle emissions. Implementation of the Selected Action will result in local, short-term, negligible, adverse impacts on local air quality due to construction-related dust, equipment and vehicle emissions and regional, long-term negligible adverse impacts to air quality from vehicle emissions.

Because this resource, which contributes to the park's purpose, will not be affected beyond the current condition and there will not be any long-term change in the natural or cultural integrity of the park, the Selected Action will not impair park air quality for future generations.

### **Soundscapes**

Protecting natural sounds is important both to the visitor experience and the ecological integrity of natural resources in the park. Natural sounds, such as wildlife, wind in the trees, and running water, are all present in the project area. The Selected Action will involve operation of heavy duty construction equipment to pulverize and repave the roadway and to improve roadside drainages. Construction noise levels will vary depending on a number of factors, such as the number and type of equipment in operation on a given day, usage rates, the level of background noise in the area, and the distance between sensitive receptors and the construction site. Construction noise will be loudest immediately adjacent to the construction area, but due to generally low background sound levels along the Tioga Road, the noise may be audible a long distance from the source.

Some construction equipment and activities can produce sounds in excess of 100 dB, typically in short bursts over the duration of the project. These noises would be perceived as 16 or more times as loud as a typical vehicle. Overall, the Selected Action will be expected to result in local, short-term, minor to moderate adverse impacts to visitors, residents, and contractors in the vicinity of maintenance activities. The Selected Action will not have any long-term impact on ambient noise levels along the Tioga Road. The Selected Action will result in local, short-term, minor to moderate, adverse noise effects on park visitors and residents during construction activities. The Selected Action is not expected to have any long-term, adverse effects on noise and will not impair park soundscapes for future

generations.

### **Archeological Resources**

Archeological resources are considered key to the cultural integrity of Yosemite National Park. The Area of Potential Effect (APE) for the proposed road rehabilitation includes the portion of Tioga Road and its associated features extending from Crane Flat to Blue Slide, one mile east of Lembert Dome. The APE extends 100 feet from the edge of the pavement on both sides of the road.

Ground disturbing activities associated with the Selected Action have the potential to impact recorded sites within the APE, although mitigation measures will be in place to avoid any impacts and most work will occur in previously disturbed contexts. Construction of Tioga Road predates cultural resource survey of the area, suggesting that previously unrecorded sites, not visible during survey due to disturbance from road construction, may exist within the road corridor. Deep excavations for drainage features, creation of paved ditches, and the widening of the road in areas could result in the inadvertent discovery of new sites and resources during road construction.

Adverse impacts on archeological resources from the Selected Action will be avoided in accordance with the 1999 Programmatic Agreement. Under the Selected Action, a permanent adverse change will not occur to archeological resources in Yosemite National Park. The Selected Action will not have any long-term impacts on archeological resources or impair the cultural integrity of the park.

### **Historic Structures/Cultural Landscapes**

Humans have been traversing the Sierra Nevada for centuries. The Great Sierra Wagon Road, the predecessor to the Tioga Road, was built in the late 1880s. The project area contains numerous historic sites, structures and landscapes. A determination of eligibility (DOE) has been completed in association with this project; the DOE has surveyed and evaluated the significance of the Tioga Road within the historic context of design and development of national park roads during the period 1913 to 1946. The State Historic Preservation Office concurred with the park's findings of eligibility for the listing of the Tioga Road on the National Register of Historic Places.

Although implementation of the Selected Action will minimize adverse impacts to historic resources under NHPA, the Selected Action will have an adverse effect on the Tioga Road Historic District due to upsizing of five culverts to improve their hydrological function. Mitigation measures will occur in accordance with the park's 1999 Programmatic Agreement among the National Park Service, the California State Historic Officer, and the Advisory council on Historic Preservation. Under NEPA, the Selected Action will have a minor, long-term adverse impact to the historic resources on Tioga Road. The Selected Action will not impair the cultural integrity of the park.

### **Scenic Resources**

Tioga Road, designed for leisure travel, is the east-west road that traverses the northern portion of Yosemite National Park and is considered one of the most scenic routes in California and the entire National Park System. The road is a designated national scenic byway and includes many turnouts and overlooks designed to display the dramatic features

of this part of the Sierra Nevada to park visitors (Half Dome, Clouds Rest, Tenaya Lake, Tuolumne Meadows, Mount Hoffmann, Mount Dana, Mount Conness, and numerous other attractions). Interpretive displays located at many of these views help visitors understand and appreciate the natural features and values of Yosemite National Park, a fundamental part of the visitor experience.

Implementing the Selected Action will be expected to result in both beneficial and adverse impacts to scenic resources. Adverse impacts will be localized and short-term, primarily resulting from construction activities. These impacts to scenic high Sierra views from various vantage points along the Tioga Road will be minor to moderate in intensity. Although views of scenic features will not be obstructed, there is potential for the visual intrusion due to the following temporary activities:

- Temporary construction activities along the roadway such as the temporary placement of signage, fencing, and the presence of construction equipment
- Brush clearing and roadway edge scarring, depleting from the foreground view, potentially affecting scenic vistas in various areas along Tioga Road, and resulting in moderate, long term, adverse impacts to roadside scenic resources
- New rockwork at culverts and headwalls which could contrast from adjacent "aged" stonework

Overall, minor, long-term, beneficial impacts will be expected due to improved hydrologic flow, resulting in more scenic vegetation landscapes at select vista points.

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the Selected Action.

## Determination of Non-Impairment

### DEFINITION OF IMPAIRMENT

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- Appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- The parks' role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

Any additional attributes encompassed by the specific values and purposes for which the park was established.

## ERRATA SHEET FOR THE TIOGA ROAD REHABILITATION PROJECT ENVIRONMENTAL ASSESSMENT

The following list includes clarifications or corrections to the environmental assessment (EA). None of the corrections listed below substantially affect the analyses or conclusions of the effect of the EA.

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Abstract, third paragraph: New start date of 2014 needs to be inserted so the sentence now reads, “If approved, Alternative 2, the Preferred Alternative as outlined and presented in this environmental assessment, would guide phased rehabilitation of Tioga Road beginning in 2014 with project completion anticipated in 2020.”

Executive Summary, page iii, Purpose and Need Section, second paragraph: New start date of 2014 needs to be inserted so the sentence now reads, “The National Park Service has prepared this environmental assessment identifying and evaluating two alternatives for the rehabilitation of Tioga Road: Alternative 1, the No Action Alternative, and Alternative 2, Rehabilitation of Tioga Road. Rehabilitation would be expected to begin in summer or fall of 2014 and be completed by the summer or fall of 2020.”

Page 1-3, paragraph 5: New start date of 2014 needs to be inserted so the sentence now reads, “Rehabilitation would begin in summer or fall of 2014 and to be completed by the summer or fall of 2020.”

Page 2-2, Alternative 2: Rehabilitation (Preferred Alternative), paragraph one: New start date of 2014 needs to be inserted so the sentence now reads, “Implementation of the project would occur in phases, beginning in 2014 with project completion anticipated in 2020.”

Page 2-6, Construction and Restoration, paragraph 2 – Staging Areas: Olmsted Quarry has been removed from the list of staging areas.

Page 3-30, paragraph one: Eligibility needs to be updated so the sentence now reads, “The Determination of Eligibility indicates Tioga Road is eligible as a historic district, including the road, associated turnouts, culverts, and other structures.”

Page 3-32, Bridges section: In kind needs to be inserted so the sentence now reads, “Under Alternative 2, damaged or deteriorated railings and sidewalks would be repaired or replaced in kind.”

Appendix B: Impact Avoidance, Minimization, and Mitigation Measures: Appendix B has been modified to include additional mitigations. The full list of mitigations is provided as Table 1 of the Finding of No Significant Impact.



## Tioga Road Rehabilitation

Public Comment and Response Report  
September 2012



## **Introduction**

This report summarizes concerns expressed in public comment letters submitted on the *Tioga Road Rehabilitation Environmental Assessment* (EA) and National Park Service responses to substantive concerns. The National Park Service released the EA for public review from August 8, 2011 through September 8, 2011. Public comment letters on the proposed project were received through the Planning, Environment, and Public Comment (PEPC) website at <http://parkplanning.nps.gov/tiogaroad> and by mail. Public concerns did not result in any changes to the alternatives presented in the EA or the proposed action.

## **Public Comment Analysis Methodology**

The National Park Service reviewed and analyzed public comments received during the comment period in a series of stages. Each letter was read to determine discrete points expressed by the author, each of which was considered to be a “comment.” Each discrete comment was then coded to associate that comment with a particular resource topic or element of the *Tioga Road Rehabilitation* (such as Purpose and Need or Alternatives).

Once all letters were coded for individual comments, similar comments were grouped together, and a “concern statement” was generated, which is intended to capture the main points or common themes expressed by the group of similar comments. The concern statements were then screened to determine whether or not further clarification was needed, or whether modification of the proposed action was necessary. No public concerns resulted in modification of the proposed action.

In conclusion, the project team prepared responses to comments considered “substantive.” Substantive comments are those that:

- question, with reasonable basis, the accuracy of information in the EA
- question, with reasonable basis, the accuracy of environmental analysis
- develop and evaluate reasonable and feasible alternatives other than those presented in the EA
- cause changes to the proposal or alternatives
- suggest factual corrections

All comments received during the public comment period have been duly considered by the National Park Service and are now part of the administrative record for this project.

## **Results of Public Comment Analysis**

During the 31-day public comment period, the park received 12 public comment letters from 7 individuals and 3 organizations. The analysis of these letters identified 43 discrete comments, from which 15 general concern statements were generated. Ten of the concerns were identified as substantive.

## **Using This Report**

This report presents public concerns organized by topic, along with “supporting quotes,” which are verbatim excerpts from individual public comment letters. These supporting quotes are followed by whether the comment author was an individual, organization or agency, and the assigned letter number. For example, “(Individual, Letter #2)” is a comment from an individual who is unaffiliated with any organization, agency, or American Indian tribe or group and who submitted the second letter received.

Concerns that were considered substantive include a response from the project team. Substantive concerns and responses are listed first under each topic, followed by non-substantive concerns. Responses are not provided for non-substantive concerns (e.g., comments that oppose the proposed action but do not provide a substantive rationale, comments that do not meet the criteria listed above).

Following the list of public concerns and responses to substantive concerns, this report also presents a short summary of comments considered beyond of the scope of this planning effort.

## **Public Concerns and Responses**

### **Proposed Alternatives**

#### **Concern #1: The National Park Service should consider widening the road for safety reasons.**

*“Tioga Road needs to be substantially more bicycle friendly. If you can’t provide at least 4foot shoulders on both sides, one way to increase safety is to provide uphill climbing lanes (wider shoulder) for cyclists to use as they ascend”*

(Individual, Letter #1)

*“Retaining the current and recently historic alignment profile is a major concern of the club. Any future changes in the alignment profile (not proposed in this EA) but proposed by a number of commercial interests and large vehicle enthusiasts during recent public sessions, to expand the alignment profile to federal highway standards would be strongly opposed.”*

(Sierra Club, Yosemite Committee, Letter #6)

Response: The purpose of this project is rehabilitating, restoring and resurfacing the Tioga Road. NPS considered a design that would include wider lane widths and shoulders; however, this would not maintain the historic character of the Tioga Road, and therefore this alternative was dismissed. This project is strictly a rehabilitation project that does not include construction of new lanes; widening the road is beyond the scope of this project. Widening the road even a few feet would be cost prohibitive and beyond the project’s purpose and need.

#### **Concern #2: The National Park Service should minimize informal and undesignated turnouts that have been used for ad hoc parking. These areas should be paved to delineate specific parking to reduce resource concerns.**

*“I believe that one of the biggest problems with the existing facility is the proliferation of unauthorized turnouts or parking areas along the road. I am glad to see this issue is being addressed. I am supportive of the plan to pave as many of these turnouts as appropriate, and return the rest to a natural state.*

(Individual, Letter #5)

*“We especially favor paving and delineating several presently graveled parking spaces identified in the EA to reduce erosion related resource damage, and to clearly define limits where legal parking is allowed.”*  
(Sierra Club, Yosemite Committee, Letter #6)

*“We especially favor the current proposal to pave and delineate several presently graveled parking spaces identified in the EA to reduce erosion related resource damage, and to clearly define limits where legal parking is allowed.”*  
(Individual, Letter #7)

Response: NPS analyzed the informal turnouts on the basis of visitor experience, safety, resource impacts, operations and emergency response. Some informal turnouts will be delineated and paved to define boundaries for vehicles and minimize resource damage.

**Concern #3: The National Park Service should consider utilizing the native material from within the park.**

*“Reopen the Yosemite granite quarry that was used to provide stones for culverts and aggregate for the road surface. This is environmentally friendlier to use material from the park and not export “exotic” materials and plants into the park boundary.”*  
(Individual, Letter #3)

Response: Loose or unstable rocks and overhanging brows will be removed, as appropriate, from steep cut slopes along the roadway. This scaling rock, which is native, would be salvaged and reused in the rehabilitation project. Recent studies indicate that the Olmsted quarry is pika habitat; it has been recommended by park wildlife staff that the quarry not be utilized for staging or quarrying rock. The quarry will not be used for a staging area for this project.

## **Cultural Resources**

**Concern #4: The National Park Service has correctly identified the historic width of the road.**

*Do not widen the road. Maintain the culturally significant width.*  
(Individual, Letter #3)

*“Fortunately there are no proposed changes in the EA to enlarge the current alignment profile. This idea should be summarily rejected in any future action as it would only contribute further to the environmental disaster that took place during the 1960s when Tioga Road “improvements” devastated the scenic quality of Yosemite’s high country and forever destroyed a quaint environmentally friendly historic route over the sierra.*  
(Individual, Letter #7)

Response: The selected action will pave Tioga Road using the existing alignment and will follow the same width as the existing pavement to ensure a consistent top-width of 22 feet, including two 10-foot travel lanes with 1-foot paved shoulders. NPS considered a design that would include wider lane widths and shoulders. However, this would not maintain the historic character of the road, and therefore, this alternative was dismissed.

## Natural Resources

### **Concern #5: The National Park Service should consider reducing the number of turnouts to be formalized.**

*“The benefit of the restored turnouts for soil infiltration capacity appears to be over emphasized when the total surface area of soils that would be restored is much less than what would be paved over. We ask that the park be selective and reduce the number of turnouts that will be formalized and increase those that are restored so that impervious surfaces beyond the actual road right of way are minimized.”*

(Central Sierra Environmental Resource Center, Letter #4)

Response: NPS analyzed the informal turnouts on the basis of visitor experience, safety, resource impacts, operations and emergency response. Formalizing turnouts will provide a quality visitor experience by offering scenic viewing for vehicular visitors, facilitate safe and efficient vehicular parking, and provide opportunity for operational and emergency functions. Some currently unpaved turnouts, most of them user-created and informal, will be paved to formalize their use and reduce existing impacts, such as safety and erosion concerns.

### **Concern #6#: The National Park Service should mitigate negative impacts to water quality.**

*“It is also noted in the EA that existing negative impacts to water quality include runoff of petroleum products from the road and parking lot surfaces into local drainages. It is not clear how the Preferred Alternative would prevent these same substances from negatively affecting water quality. Would filtration features be installed to remove some of these toxins before they enter local streams and lakes? Would sand filters be installed in drains at parking area drainages? We recommend that the park consider these types of filters and other drainage methods to minimize the amount of concentrated pollutants being deposited into waterways.”*

(Individual, Letter #3)

*“I would like to see incorporated in the proposed construction plans, some method of containing runoff from the paved turnouts and parking areas so that the vehicle fluids which drip on the pavement do not ultimately get washed into the soil or streams and water bodies.”*

(Individual, Letter #5)

Response: Short-term impacts will be mitigated by the Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan and the Storm Water Pollution Plan that will be finalized prior to the construction phase. Long-term impacts to water quality will be mitigated through the Revegetation and Restoration Plan that has been completed as a standard NPS mitigation. Temporary sediment control devices will be employed, such as filter fabric fences, sediment traps, or check dams as needed during culvert replacement. Silt fencing or biodegradable sediment logs will be retained in disturbed areas until stabilization (by reseeding or revegetation) occurs. The implementation of construction Best Management Practices will be employed to minimize impacts associated with erosion and sedimentation.

### **Concern #7: The National Park Service should retain the natural water resource pathways during the road rehabilitation.**

*“Make the outside road berm at the NPS corral permanent during road rehabilitation, implement techniques as discussed in 2009 or other evaluated methods to mitigate the unstable and erosive condition at the LBS, evaluate culvert outlets along Tioga Road from the NPS corrals to the east entrance station.”*

*Some outlets empty into unnatural watercourses (e.g. below Gaylor Pit) that downcut and deposit sediments into the Dana Fork.”*

(San Francisco, Hetch Hetchy Water and Power, Letter #11)

Response: NPS has incorporated the outside road berm near the NPS corrals into the design drawings. The Tioga Road Rehabilitation project includes Crane Flat to Blue Slide and not to the Tioga Pass entrance station. Culvert design has been evaluated within the project area and recommendations have been included in the final design drawings.

**Concern #8: The National Park Service should address non-construction vehicle emissions and impose restrictions on idling for long wait times.**

*“Very specific requirements should be contained in any final decision document in order to ensure that idling is reduced significantly from what would occur without active encouragement to turn off vehicles and without signs identifying how long the wait period will be.”*

(Central Sierra Environmental Resource Center, Letter #4)

Response: Yosemite National Park is classified as a mandatory Class I area under the Clean Air Act (42 USC 7401 et seq.). This air quality classification is aimed at protecting national parks and wilderness areas from air quality degradation. Construction activities in each area are expected to be of relatively short duration, and many repairs would be timed during the fall and winter when visitor levels are lowest. Use of Best Management Practices (e.g., site watering, covering stockpiles, covering haul trucks, and vehicle emission controls) to reduce both tailpipe and fugitive dust emissions would be in place as a condition of construction contractor agreements. The park will incorporate vehicle emission mitigations into the project’s Best Management Practices, specifically encouraging visitors to turn their cars off during long wait times.

## **Scenic Resources**

**Concern #9: The National Park Service should retain the turnouts to maintain scenic resources.**

*“Removal of turnouts improves the environment but would limit the ability of a visitor to stop, get out of their vehicle, smell the air, feel the wind on their face and have a more personal experience than just driving through the area.”*

(Individual, Letter #10)

Response: Although some turnouts will be restored to natural conditions to protect resources, many turnouts will be delineated to provide a quality visitor experience by offering scenic viewing for vehicular visitors, facilitate safe and efficient vehicular parking, and provide opportunity for operational and emergency functions.

## **Wildlife**

**Concern #10: The National Park Service should identify mitigating measures to protect the pika, federally listed as a sensitive species.**

*“The EA states that measures would be taken to protect the pika, but only if breeding individuals are observed. In order to ensure that preventative measures are taken to protect the pika, we recommend that*

*protocol level surveys be conducted prior to road operations and staging at that site to determine how many individuals are present and whether or not they are breeding.”*

(Central Sierra Environmental Resource Center, Letter #4)

*“My biggest concern is for the pikas that live and breed along Tioga Road. This species is already feeling the impact of global warming and special care needs to be taken so as not to add more stress to their population.”*

(Individual, Comment #10)

Response: The Olmsted Quarry is currently inhabited by American pikas (*Ochotona princeps*). The pika has been petitioned for state and federal threatened/endangered status and is currently a California Candidate Species. In support of the Tioga Road Environmental Assessment, wildlife staff has been monitoring pika in the quarry since summer 2011 and have estimated that two to six pikas defend year-round territories throughout the rock matrix on the quarry floor. Park wildlife staff has determined that any deposited rock will probably become inhabited by pika, thus they are recommending that rock cannot be removed/reused from the Olmsted Quarry for any future park projects, unless pika no longer occupies the quarry. The quarry has been removed from the list of staging areas.

#### **Concern #11: The National Park Service should provide mitigations to protect all amphibians.**

*“The only mitigation measures that are provided to protect amphibians are for the Yosemite toad. We suggest that the park also include any feasible measures that park biologists can develop to avoid disturbance of populations of the Mount Lyell salamander and the Sierra Nevada yellow-legged frog.*

(Central Sierra Environmental Resource Center, Letter #4)

Response: All work in and around riparian areas (ponds, streams, and meadows) will be scheduled to avoid spring and early summer (nesting and breeding) seasons. A NPS biologist will conduct an amphibian survey in construction areas prior to construction. The NPS biologist will inform the project manager if there are amphibians present and how best to avoid harm during construction activities. See Table 1 in the Finding of No Significant Impact for a full list of mitigation measures.

## **Vegetation**

#### **Concern #12: The National Park Service should keep vegetation clearing to a minimum to reduce damage to native plants and animals.**

*“I am concerned about the impact of this project in terms of disturbing native plants and animals that live in the area. By keeping the widening of the road beyond its original pavement to a minimum more damage to the ecosystem will be prevented. To improve visibility for safety reasons, I hope that the reduction of roadside vegetation will be done in the manner described in the document so the impact to animals in the area will be kept to a minimum.”*

(Individual, Letter #10)

Response: Vegetation removal improves sight distance and lessens degradation of the road. This project will adhere to the park policy to remove six feet of vegetation from the road edge, allowing drivers additional time to see wildlife before entering the roadway. Some populations of plants will be removed, particularly mountain pride penstemons, in areas at the base of granite

slopes that were once paved, but as the edges of the pavement eroded away, the plants found favorable habitat. NPS will monitor the success of the revegetation efforts for a year after the project is completed.

## Soundscapes

### **Concern #13: The National Park Service should reduce construction related noises that might impact wildlife.**

*“Although the noise associated with the project would be short-term and related to construction equipment, we suggest that the park implement some measures to reduce the noise level at construction areas. This is particularly important if there are known nesting sites near construction locations.”*

(Central Sierra Environmental Resource Center, Letter #4)

Response: All precautions will be taken to avoid impacts to wildlife especially special status species. Stationary noise sources shall be located as far as possible from known wildlife nesting areas. A wildlife biologist will conduct bird surveys beginning in early spring to determine whether special status species are present and may be mating, nesting, or foraging in the project vicinity. A wildlife biologist will conduct bat surveys in the vicinity of the construction area in late spring (May-July) and in fall (August – November) to locate potentially roosting/hibernating bats, and will provide specific directions for avoiding their disturbance if they are found.

### **Concern #14: The National Park Service should minimize noise impacts to create a better visitor experience.**

*“The park should minimize noise impacts not only to protect wildlife and wilderness values, but to also ensure that the visitor experience remains as high as possible during this period of road construction. We urge the park to implement noise attenuation measures such as utilizing mufflers, damping materials, enclosures, barriers or other sound absorbing materials at construction sites.”*

(Central Sierra Environmental Resource Center, Letter #4)

Response: This project will implement noise abatement measures; these include ensuring that all construction equipment has functional exhaust/muffler systems; using hydraulically or electrically powered construction equipment; when feasible, locating all stationary noise sources as far from sensitive receptors as possible; limiting the idling of motors except as necessary; and to the extent possible, performing all on-site noisy work above 76 A-weighted decibels (such as the operation of heavy equipment) between the hours of 8:30 am and 5:00 pm to minimize disruption to nearby park users.

## Safety

### **Concern #15: The National Park Service should remove unauthorized turnouts because they create unsafe situations.**

*“Improve the road edges, curbs, gutters, culverts and turnouts. It is important to have turnouts every few miles as large RVs create a safety issue when overtaking them on the road.”*

(Individual, Letter #3)

*“Safety in the travelling public is a concern. Parking in unauthorized turnouts creates unsafe situations for both people driving on the highway and those attempting to park. I have been driving the Tioga Road all of my adult life and I cannot tell you how many near misses I have had with car doors and the people jumping out of them who are not paying attention to the traffic on the roadway.”*

(Individual, Letter #5)

*“Now comes the issue of visitors being able to safely enjoy the scenic values of the area. I agree that many of the formal and informal turnouts are unsafe and need to be redesigned, properly marked or removed entirely. Lowering the speed limit in areas of high scenic value and trailheads would allow cars to safely enter and leave parking lots and turnoffs.”*

(Individual, Letter #10)

Response: Unauthorized turnouts will be either removed or paved to delineate the parking area. NPS has evaluated all the turnouts on Tioga Road as referenced Map 1 in the EA. In order for a turnout to be formalized it had to provide one of three functions, 1) provide a quality visitor experience by offering scenic viewing for vehicular parking, 2) facilitate safe and efficient vehicular parking, or 3) provide opportunity for operational and emergency functions. Some unauthorized turnouts will be removed for safety reasons; erosion concerns, or if they are located too close to a sensitive habitat.

## **Out of Scope Comments**

Some comments expressed were not within the scope of this project; therefore, they are not cited in this report. All comments were considered by park staff, and were forwarded to the appropriate personnel for consideration. Out of scope topics included:

- Additional signage to notify visitors to use turnouts
- Alternative paving methods
- Keeping the Tioga Road open year round
- Bringing Tioga Road into the 21<sup>st</sup> century
- The road is being used for purposes that are contrary to the mandate of the NPS