

Appendix I: Tuolumne Wild and Scenic River Section 7 Determination

Introduction

Purpose of this Determination

In 1984 Congress designated the Tuolumne as a Wild and Scenic River to protect the river's free-flowing condition and to protect and enhance its unique values for the benefit and enjoyment of present and future generations (16 USC 1271). This designation gives the Tuolumne River special protection under the Wild and Scenic Rivers Act.

The *Tuolumne Wild and Scenic River Comprehensive Management Plan (Tuolumne River Plan)* proposes actions that would be located on stream tributaries to the Tuolumne Wild and Scenic River and therefore require additional consideration under section 7(a) of the Wild and Scenic Rivers Act. The purpose of this determination is to evaluate the potential of these actions to either invade or diminish the scenic, recreational, fish, or wildlife values of the wild and scenic river.

Authority

The authority for this determination is found in section 7(a) of the Wild and Scenic Rivers Act (Public Law 90-542, as amended, 16 United States Code [USC] 271-1278). Section 7 states that

No department or agency of the United States shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreation, and fish and wildlife values present in the area on the date of designation of a river as a component of the national wild and scenic rivers system.

While the Wild and Scenic Rivers Act does not prohibit development along a river corridor, it does prohibit activities that would interfere with the free-flowing condition of the river or degrade the values for which it was designated wild and scenic. The Wild and Scenic Rivers Act specifies guidelines for the determination of appropriate actions in the bed and banks of the river and either below, above, or on a tributary to a wild and scenic river.

As the designated river manager for the Tuolumne River segments located within the boundaries of Yosemite National Park, the National Park Service must carry out a determination of effects on all proposed water resources projects¹ in accordance with section 7(a) of the act.

¹ A water resources project is any dam, water conduit, powerhouse, transmission line, or other works project under the Federal Power Act, or other developments, that would affect the free-flowing character of a wild and scenic or congressionally authorized study river. In addition to projects licensed by the Federal Energy Regulatory Commission, water resources project may include dams, water diversions,

Methodology

The *Tuolumne River Plan* proposes to improve the river's free flow by

- removing the impediments to the river's free flow cause by the abutments for the Tioga Road Bridge and Soda Springs Bridge, both of which span the Tuolumne River at Tuolumne Meadows;
- improving, replacing, and adding new culverts on upstream tributaries at Tuolumne Meadows; and,
- removing riprap from approximately 150-feet of riverbank near the Tuolumne Meadows campground A-loop.

The actions to improve bridges over the river called for in the *Tuolumne River Plan* will require a separate, subsequent environmental compliance process. A Section 7 determination for those actions will be performed as part of that separate planning process.

For the culverts proposed on upstream tributaries in the *Tuolumne River Plan*, Section 7(a) of the act provides a specific standard for review of developments below or above or on a stream tributary to a designated river. Such developments may occur as long as the project "will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area as of the date of designation." The section 7 evaluation for actions associated with the Tuolumne Wild and Scenic River Management Plan is based on guidance provided in appendix D ("Evaluation Procedure under 'Invade the Area or Unreasonably Diminish'") of the *Wild and Scenic Rivers Act: Section 7* technical report published by the Interagency Wild and Scenic Rivers Coordinating Council in 2004.

The initial question to be addressed is whether or not the proposed project invades the designated river. The term 'invade' is defined as "encroachment or intrusion upon." If the proposed project does not invade the designated river, the next question to be answered, relative to the standard in section 7(a), is whether or not the proposed project will "unreasonably diminish" any of the specified values. Given that the standard implies that some diminution of values may be determined reasonable, there are two questions to consider:

1. Does the proposed project cause diminution of the scenic, recreation, and fish and wildlife values of the designated river as present at the date of designation?
2. If there is diminution, is it unreasonable? This would suggest an evaluation of the magnitude of the loss. Factors to be considered include:
 - whether the value contributed to the designation of the river (i.e., an outstandingly remarkable value)
 - the current condition and trends of the resource (If diminution is determined unreasonable, measures might be recommended to reduce adverse effects to within acceptable levels.)

Tuolumne Wild and Scenic River Outstandingly Remarkable Values

Outstandingly remarkable values are the river-related values that make the river unique and worthy of special protection. They form the basis for the river's designation. The complete list of outstandingly remarkable

fisheries habitat and watershed restoration, bridges and other roadway construction/reconstruction projects, bank stabilization projects, channelization projects, levee construction, boat ramps, fishing piers, and activities that require a section 404 permit from the U.S. Army Corps of Engineers (Interagency Wild and Scenic Rivers Coordinating Council 2004).

values for the Tuolumne River are listed in chapter 5. Detailed descriptions specific to the Tuolumne Meadows segment are included in the analysis.

Rationale for Determination

The *Tuolumne River Plan* provides the basis for the section 7 evaluation. The plan is in compliance with established policies and plans providing direction for Yosemite National Park. The “Affected Environment and Environmental Consequences” section of the *Tuolumne River Plan/Draft EIS* (chapter 8) describes the existing condition of resources in the project vicinity and analyzes the potential environmental impacts associated with implementation of each of the proposed alternatives.

Project Description

The Tioga Road is a trans-Sierra highway that runs east to west along the southern edge of Tuolumne Meadows in Yosemite National Park. Surface water flowing from the southern side of the road is channeled through 35 culverts under the road to Tuolumne Meadows and the Tuolumne River. In 2006, researchers observed that Tioga Road culverts were clogged with vegetation and sediment in 12 locations, and signs of ponding water south of the road were observed in 23 locations.

Culverts force previously dispersed runoff into local channels, and downcutting (also known as vertical erosion) in these channels is occurring on the meadow side of the culverts. These culverts may also be causing headcuts, which occur when sheet flow is concentrated and channeled at higher than natural velocity, thus increasing scour and altering sedimentation dynamics. Like downcut channels, headcuts lower the adjacent water table and limit sheet flow across meadows. In addition, many Tioga Road culverts were installed lower or higher than the meadow surface, exacerbating downcutting, headcutting, and ponding.

To enhance meadows and hydrologic function, culverts along Tioga Road would be improved to facilitate water flow to the river and adjacent meadows. Some culverts would be repaired, and additional larger, better placed culverts would be installed to mitigate many of the observed impacts in Tuolumne Meadows. Culverts conveying water from Budd Creek and Unicorn Creek, two named tributaries to the Tuolumne River, would be made larger and more numerous to accommodate runoff.

Historic culverts would require special treatment to mitigate impacts on the cultural landscape. An adverse effect on the Tioga Road Historic District could be minimized or avoided by salvaging materials from existing culverts and using culvert types and materials that are historically compatible with the period of significance for this section of the Tioga Road Historic District (1932-1961). Placement of all culverts would depend on surface levels of the meadow to minimize downcutting, headcutting, and ponding effects. Work to restore the contours adjacent to existing culverts would help reduce impacts and likelihood of further downcutting, headcutting, and ponding and could include

- filling in ditches associated with culverts with native soil
- applying woody debris, native mulch, and plant material (willows using hydrodrilling techniques) to divert and disperse runoff, promote deposition and limit scour
- placing rocks to disperse outflow energy and prevent downcutting
- Recontouring slope and landform to natural conditions to encourage sheet flow
- Revegetating areas adjacent to and downslope of culverts with native species to slow velocity of water flowing into the meadow, encouraging sheet flow and sediment deposition

To enhance free flow of the Lyell Fork of the Tuolumne River, approximately 150-feet of boulder riprap would be removed from the riverbank near the campground A-loop. The boulders would be removed during low flow and the riverbank would be restored to a natural contour similar to that of adjacent unaffected riverbank. Willows and other local, native vegetation would be planted to stabilize the riverbank protect, protect water quality, and restore natural conditions and blend in with adjacent native vegetation.

Analysis

Considerations

Does the proposed project invade the designated Tuolumne Wild and Scenic River?

The proposed culvert improvement and riprap removal work would be located within the Tuolumne Wild and Scenic River corridor, along the Tioga Road, throughout Tuolumne Meadows. The proposed action includes two named tributaries to the Tuolumne River, Unicorn Creek and Budd Creek. Budd Creek is located within the 100-year floodplain of the Tuolumne River. Culvert work would occur within the bed and banks of the tributaries, and construction work could occur within the ordinary high-water mark.

Potential construction impacts from these actions would be minimized by scheduling construction activities during seasonal periods of low or no water. Additional mitigation measures would include minimizing the disturbance area at the banks of the tributaries, salvaging excavated materials for replacement after construction, returning the banks to their preexisting contours, and implementing best management practices (see appendix N of the *Tuolumne River Plan/Draft EIS*) during construction to ensure that construction activities would not affect water turbidity, temperature, or nutrient availability.

Final culvert dimensions and design would be determined by hydrologists and engineers during the design phase of the project. The culverts would be designed to minimize impacts to hydrologic function. In combination with the mitigation proposed above for construction activities, the culverts would be designed so that they would not impede the free-flowing condition of the Tuolumne River, and hydrologic processes would be protected during low- and high-water periods. Boulder riprap removal would be designed and reviewed by restoration ecologists, hydrologists and engineers and would improve the free flowing condition and scenic quality of the river. Following removal, the riverbank would be restored to natural contours and stabilized with willow plantings and other area native plants. Restoration techniques are described in greater detail in Appendix H. Therefore, the proposed actions would not encroach or intrude upon the hydrologic function of the Tuolumne River and would not invade the wild and scenic river.

Does the proposed project unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area as of the date of designation?

The effects of the proposed water resources management action on scenic, recreational, and fish and wildlife values are outlined in table I-1.

Table I-1.
Effects of the Proposed Water Resources Management Action on Scenic, Recreational, and Fish and Wildlife Values

Value	Conditions at the Time of 1984 Designation	2012 Condition of Outstandingly Remarkable Values	Effect of Proposed Culvert Improvement and Riprap Removal
Scenic	Expansive views were afforded by the natural vegetation patterns at Tuolumne Meadows. The natural features created numerous scenic viewing opportunities, ranging from high panoramic views to views into and away from Tuolumne Meadows. Views into and away from the meadows were maintained and occasionally expanded by the mechanical removal of encroaching lodgepole pines. Additionally, the siting of all post-1920s development was guided by the principle of not obstructing or competing with the naturally occurring views and vistas. Reducing human visual impacts was a key reason for realigning the Tioga Road and eliminating all camping inside the meadow. Building locations and circulation patterns were designed to take advantage of the scenic opportunities of this landscape, while remaining as unobtrusive as possible.	Views from trails and vista points through Dana and Tuolumne Meadows continue to have high aesthetic value. The predominantly open meadows provide for a remarkable variety of visual experiences, including unobstructed views of the craggy Sierran horizon line and the ability to watch dramatic weather formations roll in. Even from the periphery of the meadows, where denser vegetation obstructs the panoramic views, a sense of openness is provided by glimpses of the meadows and distant peaks between the trees.	Scenic and visual landscape elements would not be affected by the culvert improvement or riprap removal. The culverts would be low profile, compatible with the surrounding cultural landscape and would not be visible from the Tuolumne River upon project completion. Short-term visual impacts during installation of the culverts and removal of riprap would be visible from the banks of the Tuolumne River.
Recreational	Abundant recreational and educational opportunities were available at the time of designation. They included day hiking, overnight backpacking, swimming, wading, fishing, camping, climbing, horseback riding, picnicking, artistic pursuits, sightseeing, nature study and skiing and snowshoeing in winter. Tioga Road offered excellent opportunities for scenic driving. The Tuolumne Wild and Scenic River Study noted that Tuolumne Meadows contained one of the largest campgrounds in the national park system and served as a major trailhead into the spectacular Yosemite backcountry. It noted that the number of visitors in the Tuolumne Meadows area reached 3,000 per day during the peak summer season.	The Tioga Road continues to provide access to a great diversity of recreational and educational opportunities in the Tuolumne River corridor that are easily accessible to people of various ages and abilities. These opportunities have not changed since the time of designation, with the exception that the number of campsites in the Tuolumne Meadows campground has been reduced from about 600 (USFWS and NPS 1979a) to 304 to accommodate larger modern recreational vehicles, provide better site separation, and better protect natural features. Recreational opportunities include day hiking sightseeing, viewing exhibits along the road, and many other related activities. In winter, the road is the primary route taken by trans-Sierra skiers.	Abundant recreational and educational opportunities would remain available in the river corridor and would not be diminished in the project area. The proposed action would not change access to the Tioga Road and would improve the visitor's ability to find parking at Tuolumne Meadows.

Value	Conditions at the Time of 1984 Designation	2012 Condition of Outstandingly Remarkable Values	Effect of Proposed Culvert Improvement and Riprap Removal
Fish and Wildlife	At the time of designation, the subalpine meadow and riparian complex was largely undeveloped, with high biodiversity and productivity. The vast meadows—the annual floodplains for the Tuolumne River—were largely free of structures. Most facilities, with the exception of roads and trails, were concentrated in upland areas around Tuolumne Meadows. Tioga Road skirted the southern edge of the meadow. Culverts along the Tioga Road allowed for flows from upland areas to connect to Tuolumne Meadows (although these flows did not replicate natural sheet flows).	The unusual extent and influence of glaciations in the Tuolumne River corridor created extensive areas of low relief that alternate with steep river reaches flowing over bedrock. The long, low-gradient reaches along the Lyell Fork, the lower Dana Fork, and below their confluence through Tuolumne Meadows were conducive to the accumulation of sand, silts, and organic debris. The resulting meadow/riparian complex is the largest in Yosemite National Park and one of the most extensive in the Sierra Nevada.	<p>Additional and/or enlarged culverts would improve hydrologic processes compared with existing conditions by accommodating peak spring runoff, some channel migration, and flash floods from summer thunderstorms. To the extent possible, natural sheet flow at those locations would be restored.</p> <p>Improved hydrologic flow and connectivity between the river and the meadows would be expected to enhance adjacent meadow and wetland areas and associated habitat.</p> <p>Removing the boulder riprap, and restoring natural contours and vegetation would restore habitat for plants and wildlife and would allow for natural migration of the river channel.</p> <p>The project is expected to result in a long term beneficial impact on vegetation, wildlife communities, habitat, diversity, and the river processes that species depend on. Project specific mitigation measures (see appendix N of the <i>Tuolumne River Plan/Draft EIS</i>) would be implemented to minimize any impacts to wildlife or associated habitat during construction. There would be no impacts on fish.</p>

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Section 7 Determination

The Tuolumne Wild and Scenic River Plan includes actions to improve or replace existing culverts on stream tributaries of the Tuolumne River. The proposed actions would replace culverts at Tioga Road on Budd Creek and Unicorn Creek with additional, larger, and better placed culverts to better accommodate peak runoff, channel migration, and flash flooding during summer storms. The new culverts will use construction types and materials that are historically compatible with the Tioga Road Historic District.

Using the *Tuolumne River Plan/Draft EIS* as the basis for the Section 7 determination and implementing specific mitigation measures (e.g. performing construction at periods of low or no water, application of best management practices, and seasonal species-specific restrictions for construction activities) outlined in appendix N of the *Tuolumne River Plan/Draft EIS*, the National Park Service has determined that the proposed projects will not invade the Wild and Scenic Tuolumne River or unreasonably diminish the scenic, recreational, or fish and wildlife values present in the area as of the date of designation.

Recommended by Don L. Neubacher, Superintendent

Date

Approved by Chris Lehnertz, Regional Director

Date

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Appendix J:

Scenic Vista Management in the Tuolumne River Corridor

The *Scenic Vista Management Plan for Yosemite National Park Environmental Assessment*, completed in 2010, inventoried 181 potential vista points throughout the park, outside of wilderness and chiefly along the major roads. The plan outlined a programmatic framework for prioritizing and prescribing the work to be completed at each of the viewpoints necessary to obtain a desirable vista. The 2011 *Finding of No Significant Impact* (FONSI) stipulates that the final determination of vista points for the Tuolumne Wild and Scenic River corridor would be deferred to the comprehensive river management plan.

This appendix captures the programmatic direction and outlines methods in the *Scenic Vista Management Plan*, but also analyzes the viewpoints from the perspective of the Wild and Scenic Rivers Act mandate to protect and enhance the values of the Tuolumne Wild and Scenic River.

The scenery through the Tuolumne River—considered an outstandingly remarkable value—offers outstanding views of the river valley, meadows, glacially carved domes, rugged mountain peaks, steep canyons, and expansive skies. Where these tremendous views intersect with frequent visitation is along the roads, in highly visited sites such as Tuolumne Meadows. The *Scenic Vista Management Plan* FONSI identified ten vistas located in, or adjacent to, the wild and scenic river corridor at Tuolumne Meadows. Upon analyzing these ten vista locations within the context of the *Tuolumne River Plan*, eight vistas were selected for their outstanding scenic qualities.

The eight vista points originally identified in the *Scenic Vista Management Plan* in the Tuolumne Meadows area (which includes the Tuolumne Meadows and Lower Dana Fork segments of the river corridor) can be summarized as views encompassing the meandering river, adjacent meadows, domes, and mountain peaks as seen from the bed and banks of the river, and from view corridors along Tioga Road and the Great Sierra Wagon Road. Two of these viewpoints are physically located outside the wild and scenic river corridor, but are included because of their proximity to the river corridor, and because their views are dominated by features within the river corridor.

- Tioga Road: Mount Dana and Mount Gibbs view facing east, overlooking a pond and meandering Tuolumne River (note that this viewpoint is outside the Tuolumne River corridor)
- Tioga Road: Mount Dana viewpoint, looking east at the river meandering through Dana Meadows, with the Sierra crest in the background
- Tioga Road: “Islands in the Ice” interpretive viewpoint, looking west down through the glaciated river valley along the Dana Fork, with distant views of the granite peaks
- Tioga Road: (near the “little blue slide” roadcut), overlooking Lyell Canyon and the Kuna Crest
- Lembert Dome (near the parking area), looking west to Unicorn Peak (note that this viewpoint is outside of the Tuolumne River corridor)
- Tioga Road and Parsons Memorial Lodge trailhead: looking northwest toward and river, with Fairview Dome in the background
- Tioga Road: Pothole Dome (near the parking area), looking east over Tuolumne Meadows, Mount Dana, and Mount Gibbs (note that this viewpoint is outside the Tuolumne River corridor)
- Parsons Memorial Lodge doorway, looking east across the meadow and river to Mount Gibbs

The *Tuolumne River Plan* acknowledges that the outstandingly remarkable scenery through Tuolumne and Dana Meadows will continue to evolve in response to natural ecological processes. The mechanical removal of conifers from meadows will be discontinued, pending further study as part of the ecological restoration program with the possible exception of limited removals at the eight scenic vista points identified above. If conifer removal proved to have ecological benefits as part of the program to restore meadow and riparian habitats, it could be included in that program. Management of scenic vista points would vary among the alternatives. Once an alternative has been selected in a formal record of decision, the management actions included in that alternative will be incorporated into chapter 5 of the *Tuolumne River Plan* to guide the future management of scenic values in the Tuolumne River corridor. This guidance could also amend the park's *Scenic Vista Management Plan*.

The objectives for managing and maintaining these sites are to protect the visitor's access to the scenic value of the Tuolumne River while protecting any sensitive resources. Maintenance of these viewpoints will further enhance the visitor's recreation enjoyment and enhance their connection to the natural world along the Tuolumne River. At the same time, management of scenic vistas at these select locations must protect biological values (meadow/riparian complex), cultural values (archeological sites), water quality, and the free-flowing condition of the river. Management will involve removal of trees, and when done after careful review and attention to protection of river values, will ensure that all other biological and cultural values are minimally affected.

Providing and maintaining viewing areas at existing infrastructure (such as roadside turnouts) lessens the frequency of visitors creating or using social trails to see a view that they may have once experienced, or that is referred to in existing signs and publications. Many park visitors' (87%) primary purpose when visiting the park is to take a scenic drive (Littlejohn et al 2006). By removing a limited number of trees at locations that can support visitor use, the National Park Service gives many visitors an incentive to avoid walking in more sensitive areas, and thus better protect and enhance biological resources. The intention of the *Scenic Vista Management Plan* in the Tuolumne Wild and Scenic River corridor is to reestablish vistas that once existed in these locations without degrading other outstandingly remarkable values.

The Tioga Road east of Cathedral Creek was completed in 1934 and aligned to take advantage of views through the adjacent trees and other natural features. To maintain the experience of this historic roadway design, trees that were present along the road in 1934 will be preserved. Similarly, existing trees from 1915 or older, when Parsons Memorial Lodge was built, will not be removed.

What follows is a description of the proposed workplan for each of the viewpoints established for the Tuolumne River corridor if vista management is adopted under the chosen alternative. These work plans are consistent with enhancing and protecting the ORVs of the Tuolumne River. Each workplan provides:

- A description of the viewpoint (its specific location);
- Ecological considerations, particularly as they pertain to the outstandingly remarkable values of the Tuolumne River;
- A summary of the work to be performed;
- A schematic depicting the work area, which was compared to site analysis maps prepared for the *Tuolumne River Plan* (i.e., archeological sites, wetlands and meadows, rare plants, etc.).

In the initial management of a vista, some downed trees may be left –generally no more than one tree in twenty – and some debris would be chipped, with chips either remaining on site, outside of meadows, as mulch (no more than 1 inch deep), or hauled away. The small diameter vegetation is to be loped and scattered such that

any saw marks are not visible from the vista. What woody debris may be left depends on conditions at the time and must adhere to the guidelines of tons per acre of downed fuel levels as defined by the *Fire Management Plan*. Excess logs and greater diameter brush can be either used for traditional cultural purposes if there is a need, hauled to the nearest burn pile, chipped using a masticator, or removed from the park.

Once vista clearing has been completed, the work area will be restored. Any tracks left by machinery or workers will be decompacted, recontoured, and duffed. Stumps must remain in place to provide soil stability, so they will be flush cut and buried to preserve a natural aesthetic. Any plants that could be impacted by compaction must be removed before work begins and replanted afterward. Damage to trees and shrubs should be noted for replacement. Revegetation could occur on a later date with either seed or container plants at the appropriate season. Native seeds (of grasses and herbaceous plants) would be collected prior to work and dispersed within the work area during restoration.

Proposed Vista Points that Will Not Be Managed

A total of ten potential vista points were listed in the *Scenic Vista Management Plan* in or adjacent to the river corridor. Upon analyzing these vista locations within the context of the *Tuolumne River Plan* and considerations for river values (including free flow, water quality, and outstandingly remarkable values), two of these sites were removed, for the following reasons:

- The analysis of one site (number 175) revealed resources of a sensitive nature at this location. Vista management in the ecologically sensitive area would conflict with restoration goals.
- The second site (number 104) was eliminated due to its low assessment score. This turnout is in a densely forested area and with little potential for distant or unique vistas. Low priority sites in a subalpine zone are not maintained or managed under the *Scenic Vista Management Plan*.

It should be noted that the elimination of these two sites is consistent with the program in the *Scenic Vista Management Plan*. The intent of the plan is to identify potential vista points and conduct a more detailed review for sensitive resources as they are proposed to be managed. The remaining eight sites are summarized below and the proposed work actions analyzed regarding how management of scenic vistas will take place as described under the *Scenic Vista Management Plan*, and compatible with *Tuolumne River Plan* to protect and enhance river values.

Dana-Gibbs View

Dana-Gibbs view is located at a turnout on Tioga Road, 2.6 miles west of Tioga Pass. The turnout has an interpretive sign, and is part of the *Yosemite Road Guide* (marker T36) which describes it as having the best view of Mount Gibbs and Mount Dana. It is the vista of these peaks that is the primary scenic view. The Dana- Gibbs view is adjacent to and overlooks a pond, Dana Meadows, and the meandering Tuolumne River.



Figure J-1. Dana Gibbs Viewpoint.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 101. When evaluated with the Visual Resource Assessment (VRA, the process used in the *Scenic Vista Management Plan*, which is similar to that proposed for monitoring of the scenic ORVs—the Visual Resource Management system, or VRM) and compared to other points in the park, this site rated as a high priority. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Dana-Gibbs views averaged 10.5 out of 18.

Description of River Values at this Location

- Biological: Dana Meadows, part of the extensive subalpine riparian and meadow complex for the Tuolumne River;
- Cultural: Part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not proximate to the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

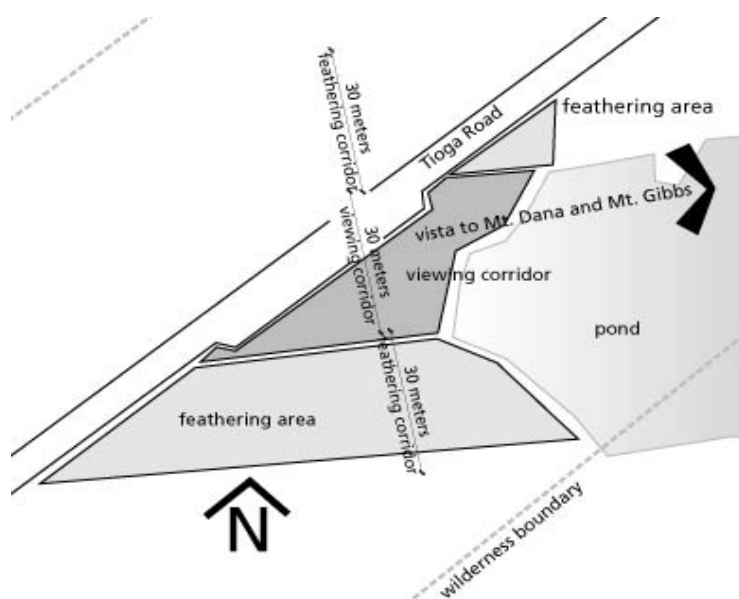


Figure J-2. Dana Gibbs view work area.

Initial Management

This vista is located in a mixed conifer forest situated in the subalpine vegetation zone. Management recommendations include removal of trees that are obstructing the vista in the middle ground (60 – 1000 meters from turnout) as well as foreground (0 – 60 meters from turnout). Snags are of particular importance in these communities and no existing snags are recommended to be removed at this location. The vista is located proximal to a pond and riparian zone and additional protection measures as defined in the *Scenic Vista Management Plan* apply in determining which trees to remove, such as leaving in place trees that are adjacent

to and overhang the water's edge. The Wilderness area is 60 m from the centerline of Tioga Road and no actions will take place in Wilderness for vista management. Because this is a high priority site, the viewing area can be up to 30 m wide, with 30 m of feathering to each side. In no way does this mean that all trees within this boundary are removed. Feathering edges and leaving mature trees within the viewing area are intended to leave a site with a more natural appearance.

Tree Species	< 20" dbh	>20" and <30" dbh	Total
Lodgepole Pine	30	8	38
TOTAL TREES			38

Vista management activities will generally take place in September and October to avoid effects to nesting birds and hibernating bats. Compaction of soils will be avoided as well. The ideal time would be in September or October when the ground is frozen. However, the weather is more variable at that time of year, so the exact

time will need to be weather dependent. Steps will be taken to avoid compaction if the ground is not frozen, such as using mats for equipment. If action is delayed later than October when the ground is frozen, a wildlife biologist will inspect the site for habitat prior to action taking place. If the wildlife biologist locates habitat that would be negatively affected by actions at that time, action would be either modified to avoid any affect, or delayed until the following year and undertaken at a more preferable time. The trees to be removed for initial management are summarized in the table.

In addition, due to the steepness of the bank immediately beneath the viewing area, the area will be seeded and covered with local duff. Other erosion mitigation measures may be employed as needed. Check dams or wattles built out of logs, slash, should be positioned to catch eroding sediment and protect water quality in the pond.

Continued Maintenance

The site shall be evaluated and maintained on an annual basis. Such maintenance includes felling of trees less than 6" that encroach on the vista and revegetation of eroded slopes or any areas denuded by the initial clearing process. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

Dana Fork of the Tuolumne

The Dana Fork of the Tuolumne vista is located at a turnout on Tioga Road, about 3.2 miles west of Tioga Pass. The primary view is of Mount Dana and Mount Gibbs, but Mammoth Peak and the Dana Fork and Tuolumne River can also be seen.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 102, and is a medium priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Dana Fork of the Tuolumne vista averaged 9.5 out of 18.



Figure J-3. Viewpoint for Dana Fork of the Tuolumne.

This vista is located in the subalpine vegetation zone with mixed conifers and meadow next to the riparian area. At this time the vista is not obscured so no initial management actions are necessary.

Description of River Values at this Location

- Biological: Dana Meadows, part of the extensive subalpine riparian and meadow complex for the Tuolumne River;
- Cultural: Archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;

- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

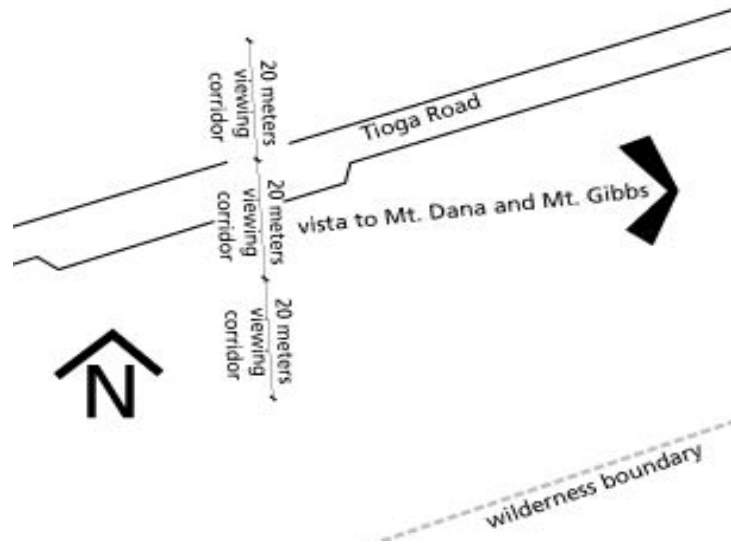


Figure J-4. Dana Fork of the Tuolumne work area.

Continued Maintenance

Although no tree removals are recommended at this time, this site shall be evaluated and maintained as a medium priority vista. This means that the site will be reevaluated and maintained at least every three years. The viewing area is up to 20m wide and feathering 20m to each side, as shown in figure J-4. Such maintenance includes felling of trees less than 6" that encroach on the vista and revegetation of eroded soils. There are a very limited number of small lodgepole pines or new lodgepole pines that could obscure the view in the future. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

Islands Above the Ice



Figure J-5. Viewpoint at Islands Above the Ice interpretive sign.

Islands Above the Ice is a vista located at a turnout on Tioga Road 3.6 miles west of Tioga Pass. The primary vista is of Unicorn Peak, Johnson Peak, and Cathedral Peak. The turnout has an interpretive sign title "Islands Above the Ice" that describes the mountain peaks that were above the glaciers as "islands." Currently, these peaks are difficult to see from the sign due to encroachment of trees. The site is also referenced in the *Yosemite Road Guide* (marker T35).

This site was inventoried as part of the *Scenic Vista Management Plan* as site

number 103, and is a high priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and this vista averaged 11.0 out of 18.

This vista is located in the subalpine vegetation zone among mixed conifer forest near the Tuolumne River and near a subalpine meadow. The tree species present include lodgepole pine and whitebark pine. Snags are of

particular importance in these communities and none are currently obscuring the vista and do not need to be removed.

Description of River Values at this Location

- Biological: Dana Meadows, part of the extensive subalpine riparian and meadow complex for the Tuolumne River;
- Cultural: Part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

Initial Management

Management recommendations are that trees obstructing a vista should be cleared in the middle ground (60 – 1000 meters from turnout) and foreground (0 – 60 meters from turnout). The vista is located proximal to a riparian zone, so additional protection measures apply, such as not removing trees that are adjacent to and overhang the water's edge. The Wilderness area is 60m from the centerline of Tioga Road and no actions will take place in Wilderness for vista management. Because this is a high priority site, the viewing area can be up to 30 m wide, with 30m of feathering to each side. In no way does this mean that all trees within this boundary are removed. Feathering edges and leaving mature trees within the viewing area are intended to leave a site with a more natural appearance.

Tree Species	< 6" dbh	<20" dbh	Total
Lodgepole Pine	119 (+/- 10% are saplings)	116	235
TOTAL TREES			235

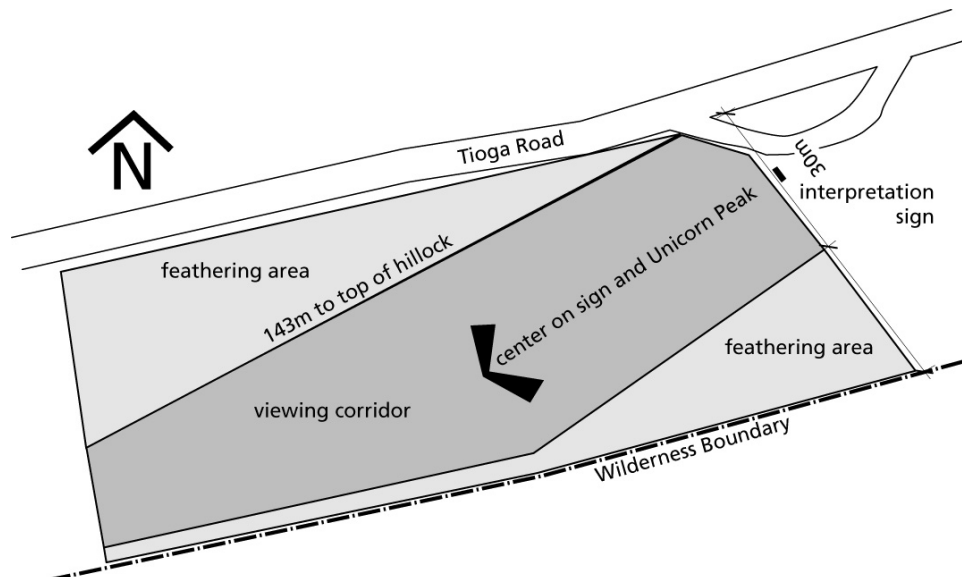


Figure J-6. Islands Above the Ice site work diagram. Not to Scale.

Vista clearing will generally take place in September and October to avoid effects to nesting birds and hibernating bats. Compaction of soils will be avoided as well. The ideal time would be in September or October when the ground is frozen, but the exact time will need to be weather dependent. Steps will be taken to avoid compaction if the ground is not frozen when action is taken. If action is taken after October when the ground is frozen, a wildlife biologist will inspect the site for habitat. If the wildlife biologist locates habitat that would be negatively affected by actions at that time, action would be either modified to avoid any affect, or delayed until the following year and undertaken at a more preferable time. The summary of trees to be removed for initial management is summarized in the table on the previous page.

Continued Maintenance

The site shall be evaluated and maintained on an annual basis. Such maintenance includes felling of trees less than 6" that encroach on the vista and revegetation of denuded areas. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

Little Blue Slide



Figure J-8. Viewpoint from Little Blue Slide.

The Little Blue Slide vista is located at a turnout on Tioga Road, about 5.2 miles west of Tioga Pass. It is also a part of the *Yosemite Road Guide* as T33, which refers to the glacial moraine on the north side of the road. The primary view is to the Cathedral Range to the southwest. In addition there are great vistas to the south of Lyell Canyon, Mount Lyell and Amelia Earhart Peak.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 105, and is a medium priority when evaluated with the Visual Resource Assessment (VRA) and compared to

other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Dana Fork of the Tuolumne vista averaged 9.25 out of 18.

Description of River Values at this Location

- Cultural: Archeological landscape;
- Scenic: Exemplary views up Lyell Canyon, encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

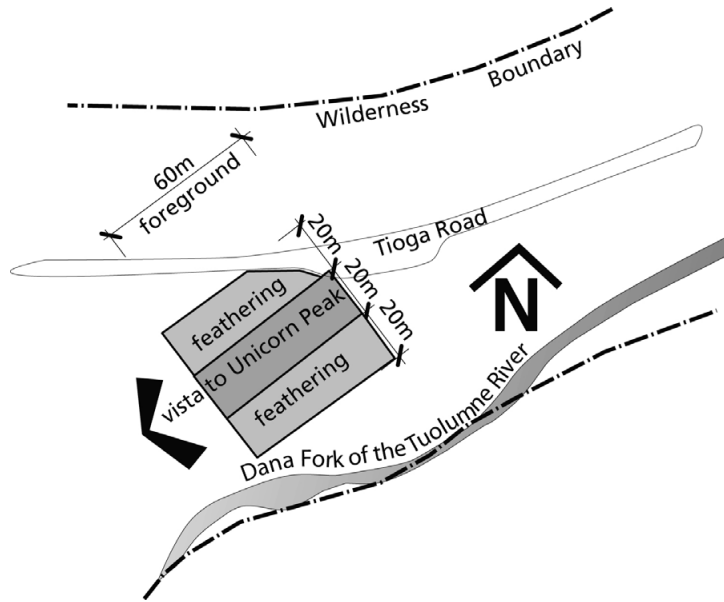


Figure J-9. Little Blue Slide work area.

Initial Management

Management of this medium priority site is recommended under the *Scenic Vista Management Plan*. At the present time, however, there have been rock slides from the moraine on the north side of the road and there is

concern that managing the vista at this site would likely encourage visitors to stop in the potentially hazardous area. The types of solutions to this rock slide hazard involve bank stabilization and site restoration as called for in chapter 5 and appendix H of the *Tuolumne River Plan*. The recommendation to manage the vista should be undertaken only after the issues of potential hazards are addressed.

This vista is located in the subalpine vegetation zone among mixed conifer forest. The tree species present include lodgepole pine and western white pine. Snags are of particular importance in these communities, but none are obscuring the vista, so none need to be removed. This is a medium priority site in a subalpine region so only trees in the foreground (60 meters from the turnout) shall be removed for vista management and the viewing area can be up to 20 m wide, with 20 m of feathering to each side.

Due to the slope away from the turnout there are few trees beyond the foreground that could ever potentially obscure the vista. The Wilderness area is 60m from the centerline of Tioga Road and no actions will take place in Wilderness for vista management.

Tree Species	<20" dbh	Total
Lodgepole Pine	34	34
TOTAL TREES		34

In addition, due to the steepness of the bank immediately beneath the viewing area, seeding and duffing will be done and erosion mitigation measures taken as needed. Check dams or wattles built out of logs, slash, should be positioned to catch eroding sediment.

Continued Maintenance

The site shall be evaluated and maintained at least once every three years. Such maintenance includes felling of trees less than 6" that encroach on the vista and revegetation of eroded slopes or any areas denuded by the initial clearing process. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

Lembert Dome Parking



Figure J-10. Viewpoint from Lembert Dome Parking.

The Lembert Dome parking area on the eastern edge of Tuolumne Meadow, just north of Tioga Road at the base of Lembert Dome, has a great view of Unicorn Peak to the southwest. This site was inventoried as part of the *Scenic Vista Management Plan* as site number 106, and is a medium priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Lembert Dome vista averaged 8.75 out of 18.

This vista is located in the subalpine vegetation zone with mixed conifers, next to a wetland and riparian area. At this time, the vista is not obscured so no management actions are necessary.

Description of River Values at this Location

- Biological: Tuolumne Meadows, part of the extensive subalpine riparian and meadow complex for the Tuolumne River. This location contains wetland and riparian habitat;
- Cultural: Part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

Continued Maintenance

The *Scenic Vista Management Plan* recommends a tree should be considered for removal if it will likely obscure the vista within the next five years. There are a number of lodgepole pines, seen in figure J-10, or new lodgepole pines, that will likely obscure the vista within the next ten years, but are not obscuring the vista at this time. These are immediately north and south of Tioga Road on the road embankment. Trees larger than 6" that encroach on a vista would require a work plan identifying the specific number of trees being considered for removal; the plan must undergo resource review to minimize or eliminate any adverse effects to ensure it preserves and enhances the ORVs of

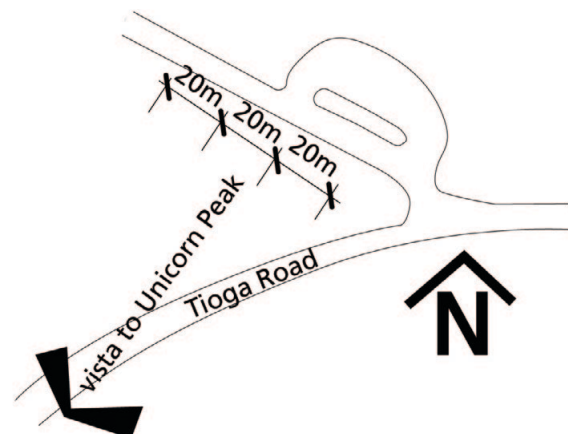


Figure J-11. Lembert Dome Parking work area.

the Tuolumne River. As with other work plans for the *Scenic Vista Management Plan*, it will be posted for public review at that time.

Although no removals are recommended at this time, this site shall be evaluated and maintained at least every three years as a medium priority vista in a subalpine region. Only trees in the foreground (up to 60 meters away) may be removed, and the viewing area is up to 20 meters wide and feathering 20 meters to each side. Such maintenance includes felling of trees less than 6" that encroach on the vista up to 60 meters away and revegetation of eroded areas.

Tuolumne Meadow Trail to Parsons Memorial Lodge

The Tuolumne Meadow Trail to Parsons Memorial Lodge view area is located on the trail to Parsons Memorial Lodge just north of Tioga Road from the trailhead approximately one mile west of the Lambert Dome parking area. Lambert Dome to the east is the primary focal point of this vista, but the Cathedral Range can also be seen.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 107, and is a high priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Tuolumne Trail to Parsons Memorial Lodge vista averaged 10.5 out of 18.



Figure J-12. Viewpoint from Tuolumne Meadow Trail to Parsons Memorial Lodge.

Description of River Values at this Location

- Biological: Tuolumne Meadows, extensive subalpine riparian and meadow complexes;
- Cultural: Parsons Memorial Lodge, a national historic landmark sited near the Tuolumne River, uniquely commemorates the significance of this free-flowing segment of the river in inspiring conservation activism and protection of the natural world on a national scale;
- Cultural: part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

This vista is located in a subalpine meadow vegetation zone near the riparian area. Additional protection measures apply in a riparian area, with no trees that are adjacent to and overhang the water's edge being removed. The views into meadows, and the broad and distant view allowed by meadows, are all important visual experiences for visitors. The *Scenic Vista Management Plan* recommends maintaining the meadow structure within the area for this vista for these reasons. Biological conditions are dynamic and conditions will be assessed on an annual basis. As with all sites in the *Scenic Vista Management Plan*, management intensity is determined by the ecological conditions. Natural resources are dynamic and maintenance can change and adapt to the changing ecological conditions to best enhance and protect all the values of the Tuolumne River.

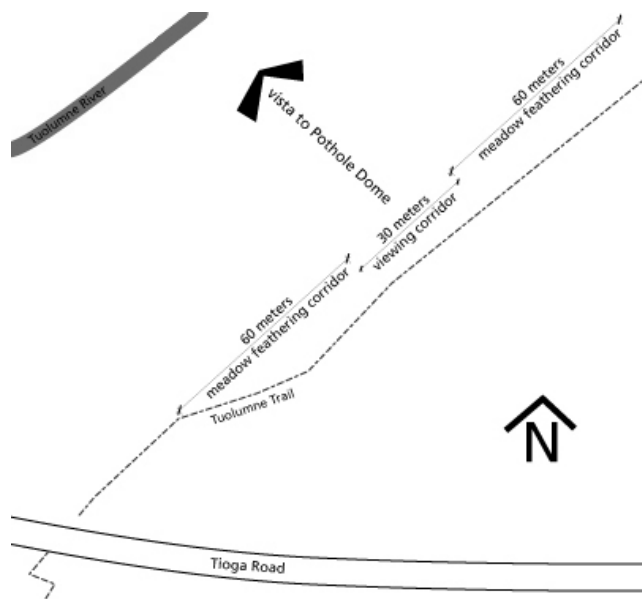


Figure J-13. Tuolumne Meadow Trail to Parsons Memorial Lodge site diagram. Not to Scale.

area up to 30 meters wide, with feathering of 60 meters, and removing trees up to 1 kilometer away. The relevant wilderness boundary to this vista is over 1 kilometer away, beyond the middle ground limits set by the *Scenic Vista Management Plan*. Lodgepole pines have matured along the meadow edges, although seedlings are scattered throughout. The initial management recommendations are to remove a limited number of trees larger than 6" dbh.

Continued Maintenance

The site shall be evaluated and maintained on an annual basis. Such maintenance includes removal of conifers in the meadow within the defined viewing corridor less than 6" dbh, and revegetation of eroded slopes or denuded areas. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

The trail that the vista point is on could be moved slightly under some alternatives of the *Tuolumne River Plan*. If this were to happen, this current vista point would not be maintained at its present location, but a comparable vista on the new trail would be found--one that would need little if any initial maintenance. That view point would be evaluated for initial treatment and maintenance. The likely outcome is that the trail could move to the east, and the boundary to maintain would shift east with the new point. As stated earlier, by maintaining vistas at areas with sufficient infrastructure to minimize visitor impacts, both the cultural and natural resources can be protected and impacts minimized.

Initial Maintenance

Management recommendations for a high priority site in a subalpine meadow allow for a viewing

Tree Species	< 20" dbh	Total
Lodgepole Pine	10	10
TOTAL		10

Pothole Dome Turnout

The Pothole Dome turnout is on Tioga Road at the west end of Tuolumne Meadows, immediately south of Pothole Dome. Although dominated by the nearby Pothole Dome, the primary vista is across the meadow to Lembert Dome and Mount Gibbs, Mammoth Peak, and ridges beyond. This vista point is not within the wild and scenic boundary for the Tuolumne River. However, the parking area is discussed within the *Tuolumne River Plan*. The Wilderness boundary is 60m from the centerline of the road and no actions to manage vistas will take place inside Wilderness.



Figure J-14. Viewpoint from Pothole Dome Turnout.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 108, and is a high priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the vista at the Pothole Dome turnout averaged 13 out of 18.

Description of River Values at this Location

- Biological: Tuolumne Meadows, extensive subalpine riparian and meadow complexes;
- Cultural: Part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

This vista is located in a subalpine meadow vegetation zone. Management recommendations for a high priority site in a subalpine meadow allow for a viewing area up to 30 meters wide, with feathering of 60 meters, up to the wilderness boundary. The vista is not obscured, so no removals are necessary for initial management.

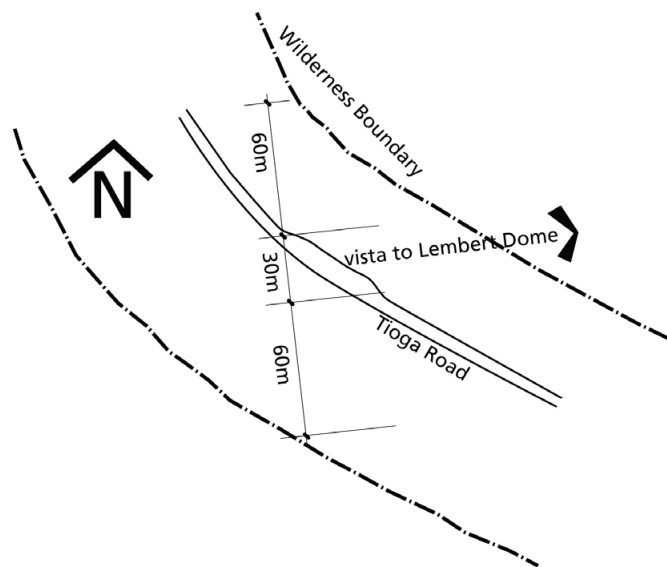


Figure J-15. Pothole Dome Parking work area.

Continued Maintenance

Although no removals are recommended at this time, this site shall be evaluated and maintained as a high priority vista. This means that the site will be reevaluated and maintained at least every three years. Such maintenance includes removing trees less than 6" dbh that encroach on the vista and revegetation of eroded soils. Future maintenance will likely involve removal of lodgepole seedlings on the road embankment, within the boundary for this site.

Parsons Memorial Lodge



Figure J-16. Viewpoint from Parsons Memorial Lodge.

Parsons Memorial Lodge is a National Historic Landmark built by the Sierra Club in 1915 in the rustic style. The front door opens onto a great vista of Unicorn Peak.

This site was inventoried as part of the *Scenic Vista Management Plan* as site number 176, and is a medium priority when evaluated with the Visual Resource Assessment (VRA) and compared to other points in the park. All sites that score a 10.0 or higher on an 18 point scale are considered a high priority and the Parsons Memorial Lodge vista averaged 7.5 out of 18. This site scores high enough

to be considered as a medium priority for management under the *Scenic Vista Management Plan*, and its importance to the Parsons Memorial Lodge and its association to the historic value of the Tuolumne River as noted in the *Tuolumne River Plan* make this a desirable vista to manage and maintain to enhance the ORVs of the river.

Description of River Values at this Location

- Biological: Proximity to Tuolumne Meadows, extensive subalpine riparian and meadow complexes;
- Cultural: Parsons Memorial Lodge, a national historic landmark sited near the Tuolumne River, uniquely commemorates the significance of this free-flowing segment of the river in inspiring conservation activism and protection of the natural world on a national scale;
- Cultural: Part of the archeological landscape;
- Scenic: Exemplary views encompassing the meandering river, adjacent meadows backed by glacially carved domes, and rugged mountain peaks of the Sierra Crest;
- Recreational: The Tioga Road across the Sierra provides rare and easy access to high-elevation sections of the Tuolumne River through Tuolumne and Dana Meadows.
- This location is not within the bed and banks of the river; therefore, the free-flowing condition would not be affected.
- Actions to protect water quality should be initiated through all phases of activity at this site.

Initial Treatment

This vista is located in the subalpine vegetation zone among mixed conifer forest on the edge of a subalpine meadow. Because this is a medium priority site, the viewing area can be up to 20 m wide, with 20 m of feathering to each side and only trees in the foreground (up to 60 m) may be removed.

Snags are of particular importance in these communities, so none are recommended to be removed. The Wilderness boundary to the south is about 1 km away across Tioga Road, and there is a boundary to the west. No actions are to take place in wilderness.

Tree Species	<20" dbh	Total
Lodgepole Pine	40*	40*
TOTAL TREES		40*

*Estimate based on photographs

NPS personnel working on the *Scenic Vista Management Plan* were not able to record potential tree counts for initial management at this location. The best estimate based on 2009 photographs is that 40 lodgepole pines under 20" dbh are necessary to remove and reestablish the view and feather the clearing. Revegetating the area is also recommended.

Continued Maintenance

The site shall be evaluated and maintained at least once every three years. Such maintenance includes felling of trees less than 6" that encroach on the vista and revegetation of eroded slopes or any denuded areas. Trees larger than 6" that encroach on a vista would require an additional work plan and undergo resource review to minimize or eliminate any adverse effects.

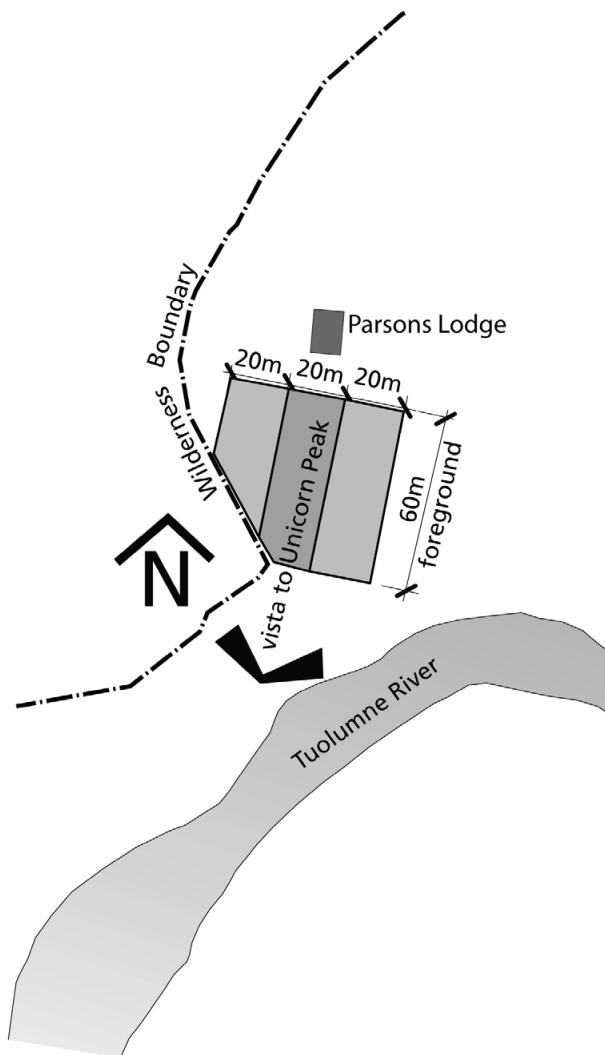
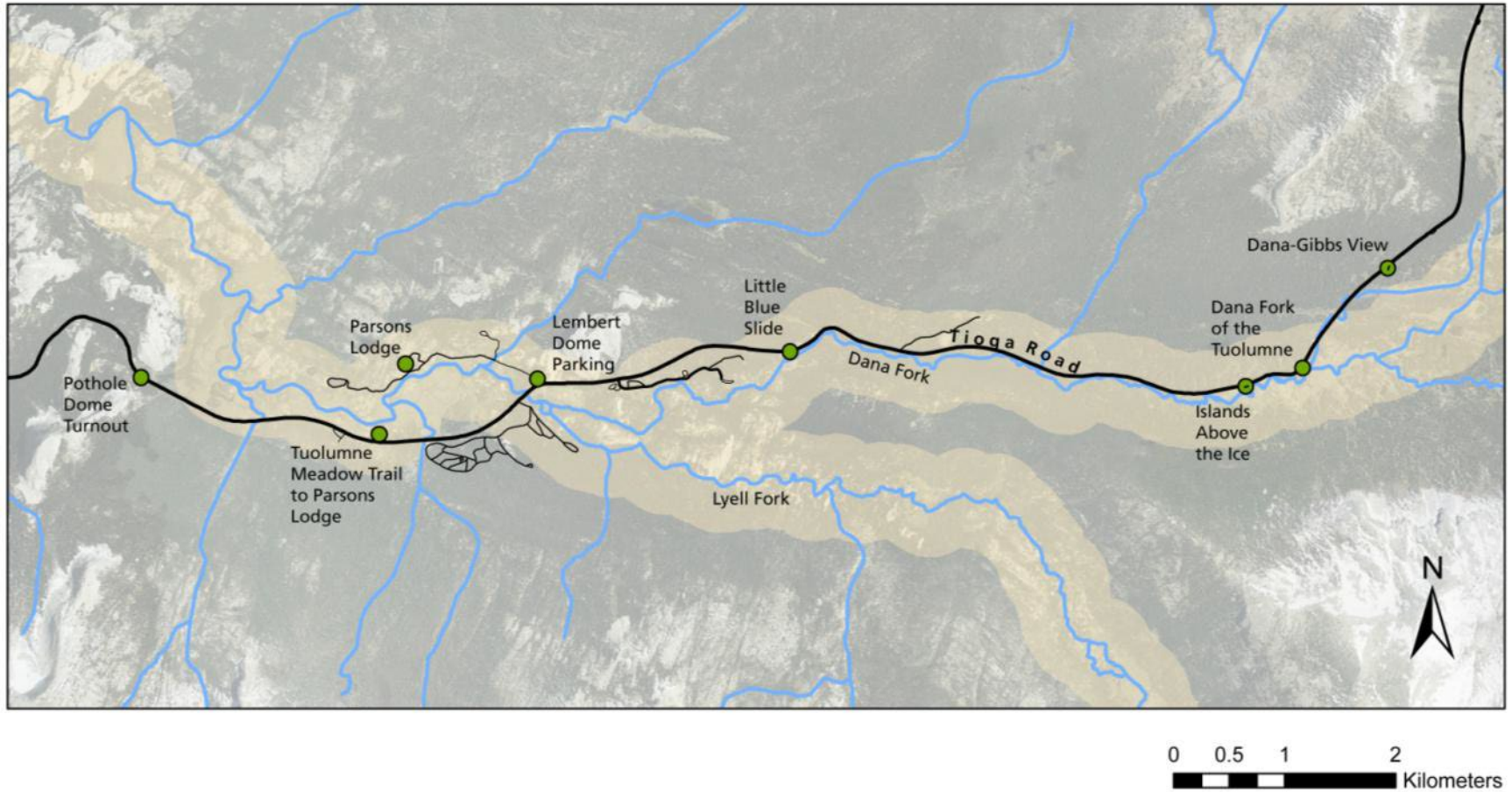


Figure J-17. Parsons Memorial Lodge work area.



Scenic Vista Points in the Tuolumne River Wild and Scenic River Corridor

Appendix K: Design Guidelines Specific to the Tuolumne River Corridor

Employee Housing Design Guidelines

Campground Design Guidelines

Developed Areas at Tuolumne Meadows

Despite the presence of a built environment, the stunning, expansive, and dramatic natural landscape at Tuolumne Meadows rightfully dominates the scene. Over the last several decades, permanent and semi-permanent structures arose in relatively small clusters tucked into the lodgepole forest at the edge of the meadows. Building character in Tuolumne Meadows ranges from large, boulder-faced, historic park Rustic architecture to seasonal, light, canvas-roofed structures. Relatively simple and understated wood-frame structures make up most of the buildings throughout the district. Most structures are rustic and their scale, materials, and massing are meant to blend unobtrusively into their natural settings (NPS 2007b).

A number of buildings in Tuolumne Meadows are significant examples of the park Rustic style. Designed by NPS staff to minimize the visual impact of constructed development, these include the old visitor contact station, the three original campground comfort stations, and the original Road Crew Camp complex. Another example is Parsons Memorial Lodge — a National Historic Landmark — designed by the Maybeck and White office for the Sierra Club in 1915 (NPS 2007a). All of these sites or structures are individually listed on the National Register of Historic Places and are contributing features of the Tuolumne Meadows Historic District.

The Civilian Conservation Corps (CCC) built some of the most distinctive and architecturally significant structures in Tuolumne Meadows, often using materials from the site. This Rustic style was perfectly suited for the patient handiwork of the corps and benefited from such labor being readily available during the Depression. Many of the finest examples of the park Rustic style in Tuolumne Meadows would be difficult to replicate under modern conditions. These buildings thus reflect a unique moment in time as much as they embody this distinctive architectural style. (NPS 2007b).

Much of the early history of the meadows is related to pioneering conservation activism in the late 19th and early 20th centuries. The predominance of the Rustic style of architecture, the concentration of development in limited areas, and the absence of modern improvements attest to the intense concern for and love of the meadows maintained by the conservation community over the decades. (NPS 2007a).

In 2007 Tuolumne Meadows was determined eligible for listing on the National Register of Historic Places as a historic district. The district encompasses the visitor facilities of the developed areas, the Soda Springs Historic District, and the adjacent natural resources of the broad meadow flanking the river to the west of its junction with the Dana and Lyell forks. To the east it includes the drier, more broken terrain between the Dana Fork and the Tuolumne Meadows Lodge. The northern and southern limits of the historic district are defined by Yosemite Wilderness boundaries (NPS 2007b).

Four areas within the Tuolumne Meadows Historic District are slated to continue providing employee housing: Ranger Camp, Bug Camp, Tuolumne Meadows Lodge, and Road Camp. Each of these areas –described in detail below– contains structures, architectural patterns, or other features that contribute to the significance of the Tuolumne Meadows Historic District. Therefore, projects in these areas should first and foremost follow the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (NPS 1995 and NPS 1996a).

Ranger Camp (Administrative Area) and Bug Camp

Ranger Camp is between the Old Tioga Road and the modern Tioga Road at the eastern end of Tuolumne Meadows. Ranger Camp was constructed to provide maintenance and administrative services for the Tuolumne Meadows area. Historically known as the Government Administrative Area, or simply the Administrative Area, it has since become known more commonly as Ranger Camp (NPS 2007b).

Cabins and hard-sided tent cabins sit in a randomly scattered pattern among sparse pine and occasional boulder and granite outcroppings. This results in a random "ad hoc" character reminiscent of the small-scale encampments found in the foothills and other parts of the High Sierra. Each unit contributes to the historic patterns of massing and scale at Ranger Camp. Contributing structures to the Tuolumne Meadows Historic District include the five original buildings built in 1924: ranger station, naturalist cabin, patrol cabin, barn, and shower house. Over the years, other buildings and structures have been added, including additional tent cabins for park employee housing. The ranger station, NPS stable, and other historic structures are at the western end of the cluster.

The ranger station was erected in 1924 and served as the original park entrance and ranger station on the Tioga Road. The 525-square-foot, single-story building has an exposed peeled log frame structure with vertical plank infilling and a gable roof with log framing and brackets. The roofing material is corrugated metal. The building is painted Wosky brown, a color named for landscape architect John Wosky in the 1930s and used widely throughout the park.

During the winter, three buildings are in use in Ranger Camp: the ranger's cabin, the snow survey cabin, and the ranger office (the ranger station). The canvas for the tent cabins is removed at the end of the summer season, contributing to the camp's seasonal character.

Bug Camp was constructed in response to a needle miner infestation that occurred during the 1950s. It is located adjacent to and east of Ranger Camp. Aside from a slightly steeper south-facing slope, the terrain and subalpine forest of the Bug Camp area is similar to that of Ranger Camp. Tent cabins and other 1950s structures are tightly clustered among pines and boulders and are accessed through narrow unpaved driveways and a paved parking lot off the Old Tioga Road. Of the original camp, the mess hall, comfort station, and research shed are considered historic and date back to the period of significance (NPS 2007b).

During the winter, none of the buildings at Bug Camp are used. Similar to Ranger Camp, the canvas for the tent cabins is removed at the end of the summer season, contributing to the camp's seasonal character.

GUIDELINES FOR RANGER CAMP AND BUG CAMP

- New, or replacement, structures should maintain the general spacing, scale, massing, and color of the existing structures.
- New structures should be laid out in a way consistent with historic patterns, which were based on proximity to natural features such as boulders or tree groupings.

- New parking areas should minimize visual impacts on the housing. Refer to Unifying Elements in *A Sense of Place: Design Guidelines for Yosemite National Park* for guidelines on parking and vegetative screening.
- New design should incorporate measures to ensure protection of existing vegetation. Use appropriate barriers to prevent trampling of such areas. Refer to Unifying Elements in *A Sense of Place: Design Guidelines for Yosemite National Park* for guidelines on pathways, circulation and barriers.

Road Crew Camp

Road Crew Camp is an enclave 400 feet south of Tioga Road at the western end of the Tuolumne Meadows Historic District. Built in 1934 by the Civilian Conservation Corps to provide maintenance and administrative facilities for the higher elevations of Yosemite, the development cluster still retains its original six structures. These include the CCC mess hall, the shower house, and four bunkhouses.

The CCC mess hall is on a lightly forested ridge, surrounded by lodgepole pines. The CCC mess hall is an excellent example of 1930s park Rustic architecture. This wood-frame structure measures roughly 33 feet x 60 feet. The foundation, main fireplace chimney, and front porch floor and steps were constructed of rubble stone masonry. The roof is sheathed in wood shingles. The lower portion of the walls has horizontal bevel siding, and the upper portion has vertical redwood board siding, originally finished with a coat of clear linseed oil (NPS 2007b).

The mess hall historically served as the kitchen, dining room, and social hub for the Road Crew Camp. It was listed in the National Register in 1978. In 1980 it was converted to a visitor center.

Four identical bunkhouses and a shower house are clustered in the trees to the east of the visitor center. These were the first structures to be built in the Road Crew Camp area and are fine examples of park rustic architecture. Built during the CCC era, all are wood-frame structures with rubble masonry foundations and redwood board and batten siding. A large rubble masonry chimney distinguishes the shower house. The bunkhouses are still in use as housing for seasonal NPS employees and retain most of their original materials and details of workmanship. These structures were all listed in the National Register in 1978.

GUIDELINES FOR ROAD CREW CAMP

- The character of new structures should be compatible with the architectural vocabulary of the historic Rustic structures at Road Camp. They should, in addition, be of a scale, form, massing, materials, and color that blend with the immediate natural and historical surroundings.
- Cluster employee parking in small groups, screened with native vegetation.
- New design should include measures to ensure protection of existing vegetation. Use appropriate barriers to prevent trampling of such areas.
- The openness of the approach to the CCC mess hall is a character-defining aspect of the site and new construction should not occur within this area.
- Maintain the pattern and spacing of the CCC mess hall with the other buildings and structures on the moderate forested slope, regardless of future use. Do not allow temporary or permanent structures to encroach into the spaces surrounding the buildings, in particular the foreground when viewed from the parking lot and the pedestrian approach routes to the immediate north. Any new development, including alterations to the wastewater treatment buildings and surroundings should be done in a manner that is obscured from trails, roads, and public view; and acoustically buffered. Lighting should be limited (refer to Yosemite Lighting Guidelines) to avoid polluting the dark night sky.

Tuolumne Meadows Lodge

Tuolumne Meadows Lodge is sited on the north bank of the Dana Fork of the Tuolumne River. It consists of a tent reception/dining room, kitchen, bathhouse, storage buildings, and tent cabins.

Tuolumne Meadows Lodge is one of two High Sierra Camps accessible by automobile, the other being White Wolf. The large paved parking area west of the dining hall and downslope of the tent cabin area is expansive and highly visible from the tent cabins. Its size dominates the setting and the arrival experience. To the east, tent cabins are disbursed on an uneven upslope among boulders, granite outcrops, and lodgepole pines. A group of exposed, highly visible propane tanks, along with other supplies, is clustered adjacent to the bathhouse. Intensive foot traffic has obliterated most pathways, leaving extensive areas of unvegetated and in some areas eroding, barren soils.

At the time of publication, employee tent cabins, permanent service buildings, and the canvas-roofed reception and dining hall were aligned in a row facing the river. Beyond these buildings to the south is a popular view of Miller Rapids, where intensive foot traffic has all but eliminated riparian bank vegetation.

Buildings and structures are simple in the tradition of the High Sierra Camps. Except for kitchen, storage, and bathhouse, most of the structures are roofed with canvas stretched over permanent wood or metal frames.

The reception/dining room structure has a timber frame with canvas walls and roof set upon a slightly elevated concrete slab. The framing members are painted white to blend with the canvas. Double-hung windows provide ventilation. On the east side, a canvas awning extends from the structure to provide a protected seating area adjacent to a fire pit. At the end of each summer season, canvas roofs, walls, and windows are removed, leaving the concrete floor and framing exposed to the elements in winter when the camp is closed.

Adjacent to the tent dining area, permanent kitchen and storage structures are built of conventional wood-frame construction. The exterior of the kitchen is sheathed in board and batten siding painted brown.

The typical tent cabin measures 12 feet x 14 feet. It is constructed by stretching heavy duck canvas over an open framework of wood or metal to create a simple shelter with an entrance on the gable end. All of the cabins have small iron stoves that vent through the sidewall thimble to the metal flue. Tent cabins at all high camps are for seasonal occupancy and are disassembled at the end of summer.

The *Tuolumne River Plan* calls for the removal of employee tent cabins along the bank of the river, and replacing them in the area just north of the Lodge parking area—east of the entrance road. In addition to Tuolumne Meadows Lodge employees, this area is also slated to accommodate housing for all other Tuolumne Meadows concessioner employees such as those who work at the store and grill.

GUIDELINES FOR TUOLUMNE MEADOWS LODGE

- Because the new employee housing will be visible on the arrival road to the Lodge, it is important that it help set the architectural tone—enhancing, and not diminishing the sense of arrival to this historic lodge.
- New structures along the arrival road should maintain the general spacing, scale, and color of the existing tent cabins at Tuolumne Meadows Lodge.
- New structures should be sited and spaced in a way consistent with historic patterns, which were based on proximity to natural features such as boulders or tree groupings.

- In the new employee housing area, pedestrian pathway network should be well-delineated to protect vegetation. Use appropriate naturalistic barriers such as partially buried boulders or lodgepole logs to prevent trampling of such areas.
- New parking for the employee housing area, should be clustered in small groups and, screened with native vegetation or natural features, and should be sited so it is obscured from the main road.
- New exterior storage, service areas, utilities, and equipment should be out of public view. If this is not feasible, then these areas should be screened with vegetation and/or fencing to ensure that the historic and natural scenes are minimally impacted. This guideline applies to the arrival experience along the road leading up to the lodge as well as within the lodge area itself. Refer to the Unifying Elements chapter for guidelines on vegetative screening and fencing.
- Any redesign of the existing parking area should incorporate natural features such as boulders, trees, and meadow grasses to soften the visual expanse of large areas of asphalt.

References

- 1977 *McCauley Cabin National Historic Landmark Nomination*. Yosemite National Park, CA.
- 1987 *Parson's Memorial Lodge National Register of Historic Places Nomination*. Yosemite National Park, California.
- 1995 *Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Washington, D.C.
- 1996a *Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Washington, D.C.
- 1996b *Tioga Road-Big Oak Flat Road National Scenic Byways and All-American Roads Nomination*. Yosemite National Park, CA.
- 2004 *Yosemite National Park Geology Overview*. Yosemite National Park, CA. Available on the Internet at <<http://www.nps.gov/archive/yose/nature/geology.htm>>
- 2007a *Soda Springs Historic District Cultural Landscapes Inventory*. Yosemite National Park, CA.
- 2007b *Tuolumne Meadows Historic District Cultural Landscapes Inventory*. Yosemite National Park, CA.
- 2011 *Draft Tuolumne Wild and Scenic River Comprehensive Management Plan Environmental Impact Statement*. Yosemite National Park, CA.

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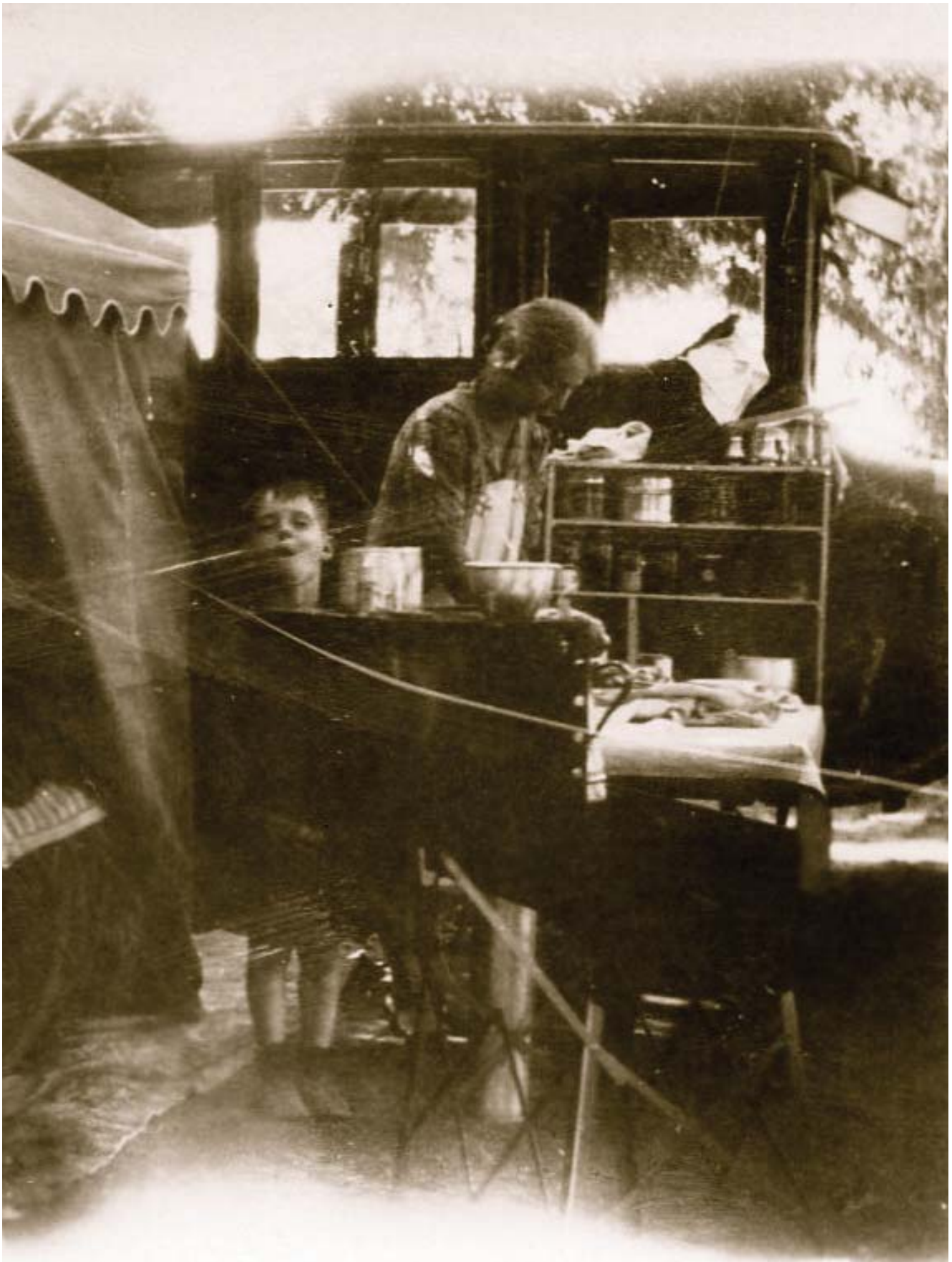
National Park Service
U.S. Department of the Interior

Yosemite National Park
Tuolumne River Plan



Tuolumne Meadows Campground Design Guidelines - Draft July 2009





1 Tuolumne Meadows Campground Design Guidelines

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Photo 1 (cover). Tuolumne Meadows Campground campsite, 2008.

Photo 2 (left). Camping in Tuolumne Meadows, 1928.



3 Tuolumne Meadows Campground Design Guidelines

History

Tuolumne Meadows campground, with 304 sites, is one of the largest campgrounds in the National Park System. The campground was built in the early 1930s by the Civilian Conservation Corps (CCC). Prior to campground construction, camping in Tuolumne Meadows was unrestricted over an area of approximately four square miles.

In 1961, the original 250 campsites were supplied with new picnic tables, grills, and trash receptacles. In the same year, an amphitheater ("campground circle") and new comfort stations were added, and a 100-site camping area for groups was developed along a spur road leading from the main campground road. Later, a portion of the original group camping area was converted to campsites for visitors with horses.

Over time, the overall number of individual campsites in the campground has fluctuated. There were reportedly between 600 and 700 sites in the 1960s. In the 1980s, a few hundred campsites were removed and restored to natural conditions because they were so densely spaced that visitor experiences were compromised and vegetation and soils were being impacted. The campground originally had two entry/exit points. However, the westernmost entry/exit, which connected Loop D to Tioga Road east of Unicorn Creek, was reportedly closed in the 1970s, when the NPS started charging fees for camping. The main campground roads were probably last repaved in the early 1960s.

Campground Setting, Condition, and Current Management

General Description: Campsites are organized into seven areas or "loops", labeled A – G. There are 304 sites, including 300 standard sites that accommodate up to six people and four horse campsites that accommodate up to six people and six horses. Additionally, there are seven group sites that accommodate between 13 and 30 people. There is also a designated area for backpacker camping (26 sites). Campsites are allocated 50% by reservation, and 50% first-come, first-served. Eight comfort stations are distributed throughout the campground.

There is no designated area within the campground for recreational vehicles (RVs). The official campground map (see next page) illustrates which sites can accommodate RVs of various sizes. However, none of the campsites have electrical hook-ups, which means that some RV campers run on-board generators to produce electricity.

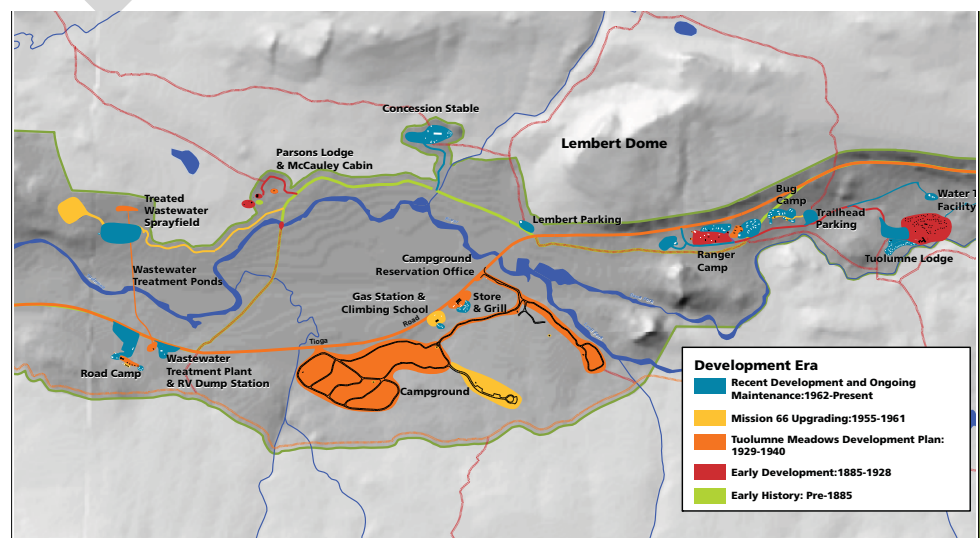


Photo 3 (left). Main campground road in the vicinity of Loop B.

Map 1. Development stages in Tuolumne Meadows.

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Vehicular Circulation: Asphalt pavement on the campground's narrow primary roads has degraded over time (photo 3) so that these roads look similar to the unpaved secondary routes that access individual clusters of campsites. For this and other reasons, visitors easily become disoriented within the large campground; many end up driving in circles before eventually finding their destination.

Loop A campsites that are closest to the campground entrance/exit experience considerable vehicular traffic and congestion when the campground is busy. This is because (a) all vehicles entering or exiting the campground must pass by those sites, and (b) vehicles entering the campground tend to stack up at the campground entrance kiosk.

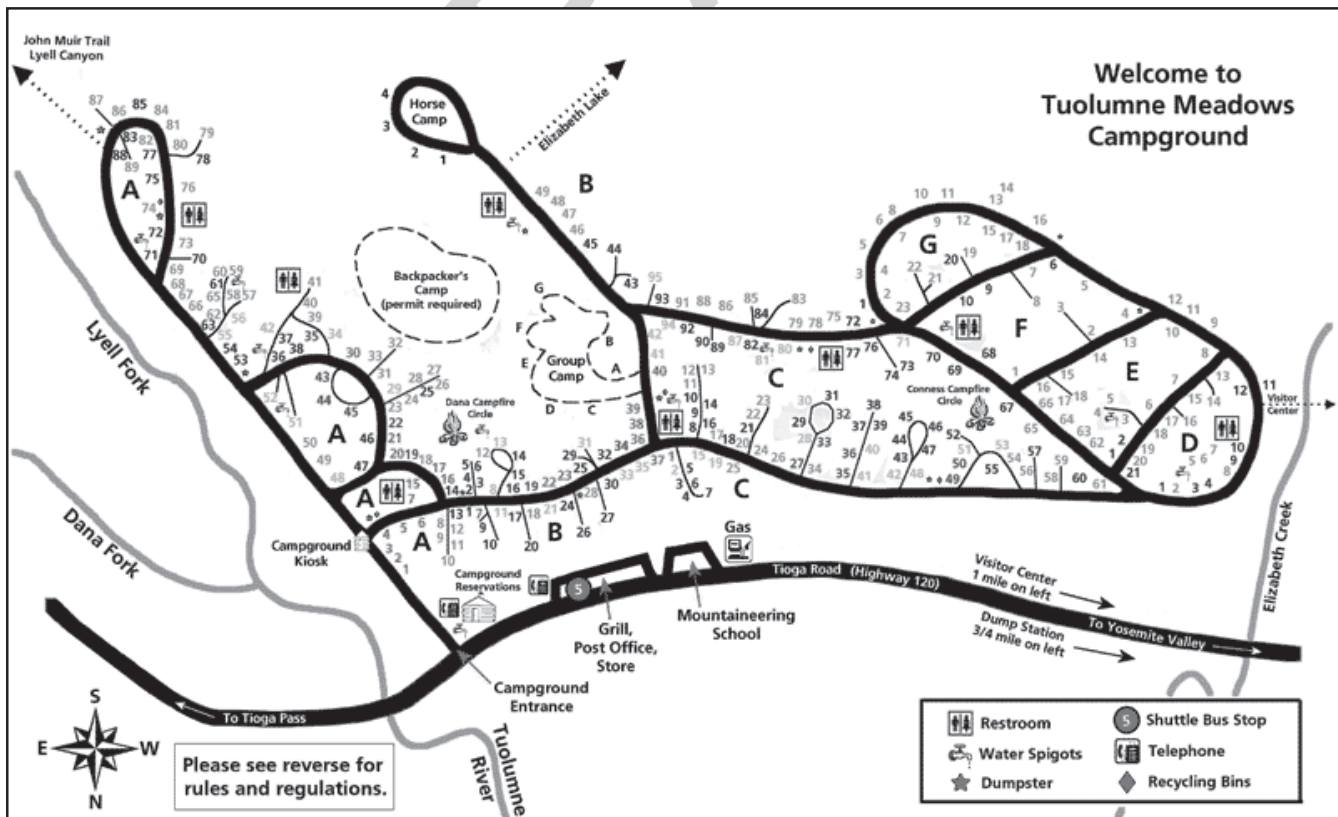
Condition: Because parking areas and vehicular access areas within the campground are not well defined, visitors in vehicles can drive virtually anywhere within a campsite. Many areas in the campground, including the terrain around comfort stations, are bare of vegetation because they are repeatedly run over by vehicles (photos 4,5,6). Some visitors drive deep into the heart of campsites to minimize the distance they have to haul food or equipment from their vehicle, often driving directly up to picnic tables. Cumulatively

over time, vehicles compact soil and damage tree roots; crush and kill understory plants, seedlings, and saplings; and make campground soils prone to wind and water erosion. This has diminished the scenic quality of the campground and the privacy of campsites because screening vegetation has been lost.

The practice of placing tents in various locations within individual campsites has had a similar effect; understory plants within campsites have been damaged and few young trees are present to replace those that die from natural causes or human impacts.

Loop D - The westernmost portion of Loop D is currently reserved for use by Yosemite Association volunteers and participants in Yosemite Association's Outdoor Adventure programs. This loop has better vegetative cover and fewer compacted and denuded areas than other parts of the campground.

Group camping area - Group campsites are located in the trees, around a large central expanse that consists of decomposed granite and is devoid of vegetation and natural cover (photo 7). This barren area is confusing to visitors and detracts from the area's natural scenery.



5 Tuolumne Meadows Campground Design Guidelines



Backpacker camping area. The backpacker camping area is used by wilderness permit holders for one-night stays while either departing for or returning from trips into the backcountry. This area is visually separated from main portions of the campground and parking is not permitted. Campers must park their vehicles, if any, outside the campground.



Pedestrian Circulation: Pedestrian circulation is largely un-delineated throughout the campground. As a result, a network of social trails has formed leading to several issues of concern: 1) many social trails through wetland areas creating vegetation damage and soil loss; 2) several social trails pass in close proximity to, or directly through individual campsites, disrupting those campers' experiences; 3) other social trails connect the campground with the store and grill; these trails take pedestrians past the rear service and employee tent cabin areas, which is an undesirable approach from both the visitors' and employees' perspectives.



Comfort Stations: Comments from visitors and campground hosts suggest that the number and condition of comfort stations is a concern. Eight campground comfort stations buildings are often shared by more than one thousand people. According to campground hosts, campers commonly complain that there are too few comfort stations and that their condition is poor because the toilets do not always function properly. As a result, some campers choose to use the woods instead. Campground rules require campers to dump used dishwater into toilets because there is no designated sink area for washing dishes. Each comfort station is divided in half by gender, and each half has three to four toilet stalls and one or two sinks (cold water only). The comfort stations offer only basic facilities with no showers, lighting, or heat. Lighting is not used in the comfort stations to minimize effects on natural night skies.



Map 2 (left). Official campground map given to campground visitors.

Photo 4 (above). Heavily impacted area near Conness Campfire Circle, loop C.

Photo 5 (above). Heavily impacted area between the main campground roads and Loop C comfort station.

Photo 6 (above). Campground area heavily impacted by vehicles.

Photo 7 (above). Large barren area in the center of the group camping area.

Accessibility for Persons with Disabilities: All campsites have wheelchair accessible picnic table, but no campsites are designed to be fully accessible to persons who use wheelchairs. At least one of the comfort station is wheelchair accessible.

Desired Conditions for Tuolumne Meadows Campground

- The campground's original rustic setting is restored and maintained.
- The campground is predominated by natural sounds and scenery.
- The campground is safe and easy to navigate.
- Users understand where it is allowed and not allowed to drive and park, and can easily discern the hierarchy of circulation routes.
- A representative portion of campsites and comfort stations are accessible to persons with mobility disabilities, including those who use wheelchairs.
- Campers rarely must wait to use a comfort station.
- Campers travel less than 300' to use a comfort station.
- Campground water fixtures function well and are water-efficient.
- Views of the campground from Tioga Road and surrounding peaks and domes are largely obscured by vegetation.
- Reasonable visual separation between campsites.
- Trash, bear box, and recycling collection areas are properly sized and sited.
- Campers travel within the campground and to neighboring destinations by foot using camp roads and/or designated paths.
- Use is focused within well delineated campsites and pedestrian paths.



7 Tuolumne Meadows Campground Design Guidelines

Design Guidelines and Concepts

The intent of the following section is to provide managers and future designers with tools for achieving the desired conditions at Tuolumne Meadows Campground.

New Development to be Sustainable, Safe, and Consistent with the Campground's Historic, Rustic Character

- When replacing or adding comfort stations, use the same architectural scale, style, construction techniques, and building materials used in the original CCC-era Tuolumne Meadows campground comfort stations (e.g., shake gable roof, large cobble masonry, and natural colors (photo 8: original CCC-era comfort station).
- When replacing the entry kiosk, use the same architectural style, construction techniques, and building materials used in the original CCC-era comfort stations and other buildings found within Tuolumne Meadows.
- Vernacular construction techniques and locally available building materials should be used as long as they do not adversely affect the natural and cultural resources of the area. The methods and techniques should ensure that there are no residual signs of construction or environmental damage.
- Building products and materials should be non-toxic renewable or recyclable, and environmentally responsible.
- New facilities should be subordinate to the ecosystem and cultural context. They should conform to the constraints of existing landforms and tree locations to the greatest extent possible.
- Site trash/recycling stations and new comfort stations around natural features such as trees and boulders in order to minimize their visual impact in the landscape.
- When replacing campsite furnishings such as fire grates and picnic tables, use rustic furnishings that fit with the historic character and meet ADA requirements.

Improve Comfort Station Distribution and Amenities

- Comfort stations should be located to achieve a 300' maximum travel distance from campsites (map 3).
- Locate dishwashing basins at new comfort stations.

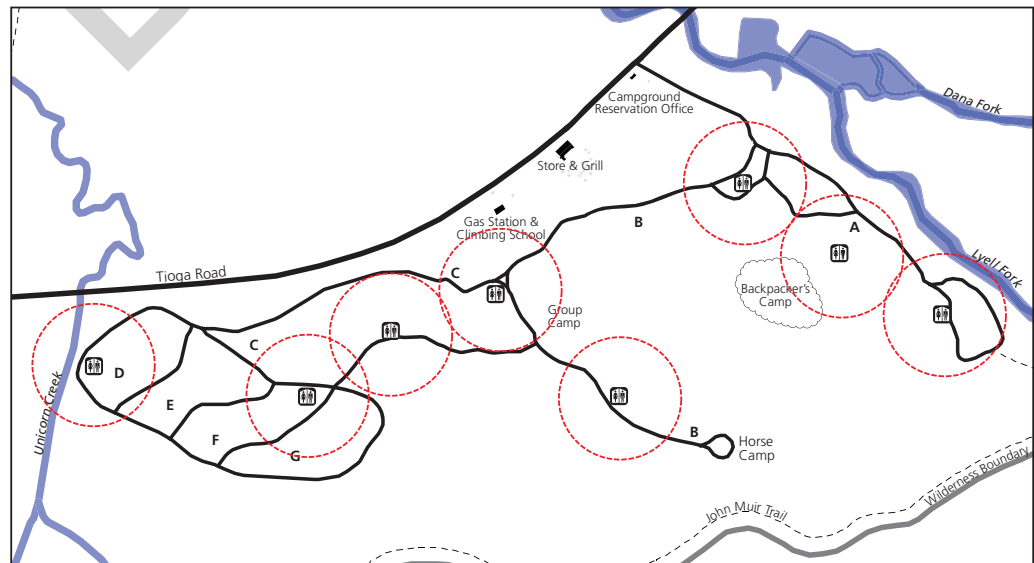


Photo 7 (left). CCC-era comfort station.

Map 3. 300' travel distance from existing comfort stations.

○ 300' Travel Distance From Existing Comfort Stations

Tuolumne Meadows Campground

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Photo 9. Example of defined small parking area.



Photo 10. Example of defined edge of parking and path to walk-in campsite.

Improve Access for Persons with Disabilities

- Provide some campsites that are fully accessible to people who have mobility disabilities and/or use wheelchairs. Sites should be located in a variety of loops to provide a range of experiences. Moderately accessible paths (natural-material or well-maintained natural soil) to primary elements such as comfort stations and spigots should be provided, where appropriate.
- Provide a minimum of two ADA parking spaces at comfort stations at a representative proportion of comfort stations.
- Bear-proof trash and recycling receptacles should be offset a minimum of three feet from the road. An asphalt or other slip-resistant natural material platform should be provided for the receptacle area.
- All new picnic tables, fire rings, and grills should meet accessibility requirements.
- All new storage lockers should be accessible.

Road Design and Existing Road Upkeep – New Roads

- Design new roads (primary and secondary) to have similar widths, crowns, and paving as existing historic campground roads while allowing for large vehicles (RV) and two-way circulation (designed for low travel speed) where appropriate.
- A curvilinear alignment should be designed to lay lightly upon the existing topography to the greatest degree possible.
- Crossing unstable or steep slopes should be avoided.
- Roads should have low design speeds (with frequent and tight curves and a narrower width to minimize/avoid cut-and-fill disturbance).

Road Design and Existing Road Upkeep – Existing Roads

- Repave the primary circulation roads with asphalt, retaining their narrow width and center crown. This will help distinguish these roads from secondary connector roads and spurs so that visitors can more easily find their way in the campground.
- Discourage travel on user-created road spurs (unofficial) by restoring natural conditions and using natural materials such as vegetation, downed trees, granite boulders, berms, and logs.

Delineate Vehicular Access and Parking Areas (Photos 9-10)

- Define parking and circulation routes for vehicles near campsites, comfort stations, and trash/recycling bin areas, to ameliorate soil impacts, encourage regrowth of screening vegetation, and improve campground naturalness.
- Selectively define the road edge with granite boulders or logs to discourage vehicles from parking along the side or the road, while still allowing places for two cars to pass on the narrow roadway.
- Use materials that blend with the natural environment and cultural landscape, such as granite boulders and logs.
- Confine vehicular impacts by providing parking areas adjacent to primary or secondary access routes rather than in the center of campsites or campsite clusters. (Campers may have to trade off some measure of convenience for increased naturalness and privacy at campsites.)
- Depending on site constraints and opportunities, provide parking either for individual campsites, or for clusters of several campsites.
- Provide small overflow parking areas for campgrounds guests (many sites will only have one parking space).

Provide Pedestrian Links Between Visitor Areas

- Provide designated unpaved trails to link the campground with the store/grill or shuttle system.

Improve Campground Entry and Provide Secondary Exit

- To improve vehicular circulation, reduce congestion, and provide an alternate emergency exit, reestablish a second campground exit in the vicinity of the one that was closed in the 1970s.
- Retain the one existing entry point to allow entrance kiosk staff to efficiently allocate campsites and orient new campers.
- The existing entry kiosk should be replaced. This facility is poorly aligned within the intersection and therefore vulnerable to vehicle impact. The replacement structure should be aligned with entry/exit traffic. The structure should reflect the campground's historic, rustic character; provide a landscape island with natural elements (rocks) to protect the structure and native plants.

Diagram 1 (below). Example of RV campsite layout.

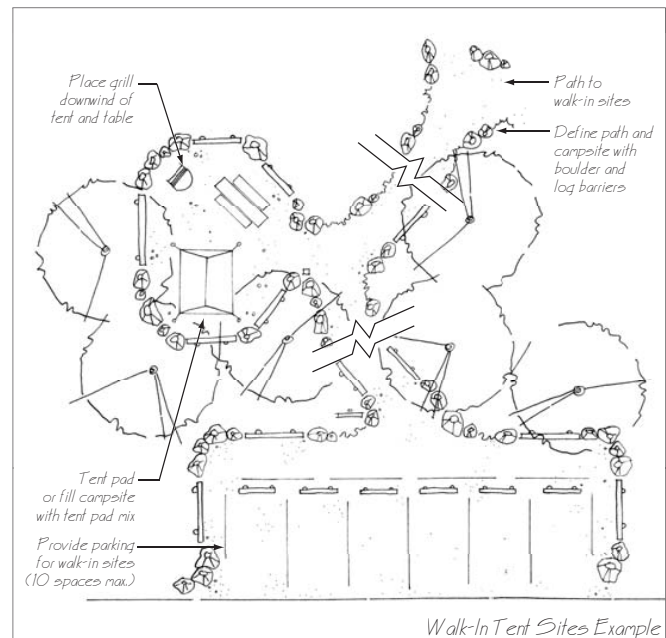
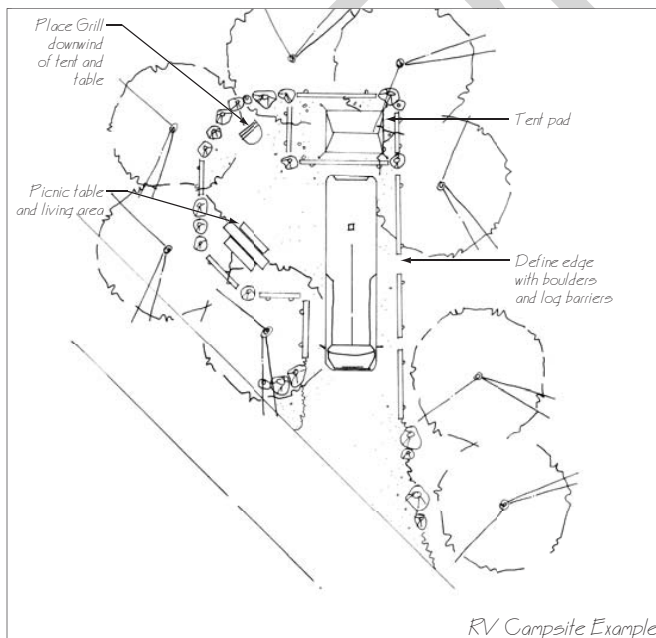
Diagram 2 (below). Example of walk-in tent site layout.

Restore/Rehabilitate/Reuse Heavily Impacted Areas

- Restore and re-vegetate heavily impacted areas that are not needed for vehicular access or parking, to improve naturalness, scenic quality, and privacy within the campground.
- Focus development in previously impacted areas.
- Additional information is needed to understand the cause of the large central barren area at the existing group camp area. Based on this research, the park should consider the appropriateness of rehabilitating, restoring, and/or reusing the large central barren area.

Redistribute/Relocate Selected Campsites

- Remove/relocate selected Loop A campsites from the heavy traffic zone near the campground entrance.
- Consider relocating the backpacker camping area further to the south so that it's closer to the John Muir Trail and further from the busier main part of the campground.





11 Tuolumne Meadows Campground Design Guidelines



Photo 13 (left). Campground registration office.

Photos 11 and 12 (above). Examples of campsites with boundaries delineated.

Photos 14 and 15 (above). Examples of tent pads.

Diagram 3 (right). Example of tent site layout.

Provide an Appropriate Range of Rustic Camping Experiences (Diagrams 1-3)

- Consider designated RV camping.
- Consider “tents only” areas that are more natural appearing due to the absence of RVs and the ability to situate tents further into the campsite.
- Consider walk-in tent camping areas with pod parking for more rustic camping experiences.

Delineate Campsites (Photos 11-12)

- Define campsite boundaries with natural materials, such as logs and granite boulders to reduce soil impacts, encourage regrowth of screening vegetation, and improve campground naturalness.

Screening and Boundary Delineation for Facilities

- Selection and spacing of vegetation and/or granite boulders for screening should be modeled after and integrated with the surrounding natural patterns.
- Plant native vegetation around existing Mission 66-era comfort stations to minimize their visual impact on the landscape.

- Use vegetation, downed trees, and/or granite boulders to provide boundaries between camp sites.
- Plant native vegetation and use granite rocks or curbing to define and secure new entry station kiosk.

Install Tent Pads (Photos 14-15)

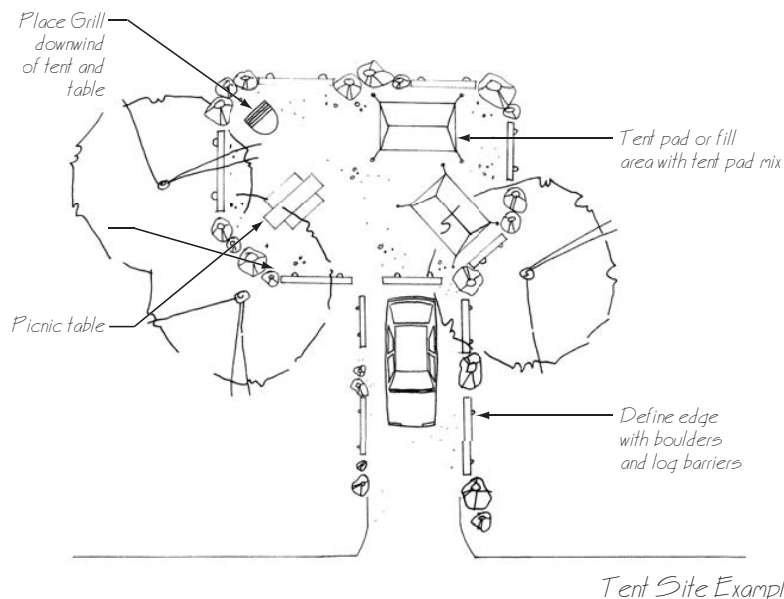
- Install tent pads that blend with the natural environment in texture and color to reduce impacts from tents and foot traffic on soils and vegetation and to improve drainage.

Minimize and Design Artificial Lighting to Reduce Impacts on Night Skies

- Outdoor lighting for comfort station facilities should be the minimum amount required to provide for personal safety. Lights should also be shielded and/or directed downward to minimize impacts to the night sky.

Take Measures to Reduce Visitor-Caused Noise to Protect Natural Soundscapes and Improve the Visitor Camping Experience

- Maintain quiet hours between 10:00 p.m. and 6:00 a.m.
- Generator use is permitted sparingly between 7 a.m. and 7 p.m.





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Bibliography

Barnett, Dianna Lopez and Browning, William D.
1995. A Primer on Sustainable Building. Golden, CO.

California State Polytechnic University
1995. Planning the Tuolumne Experience. 606 Studio, Landscape Architecture Graduate Program, California State Polytechnic University, Pomona.

Carr, Ethan
1998. Wilderness by Design: Landscape Architecture & the National Park Service. Lincoln, NB: University of Nebraska Press.

Hultsman, John, Cottrell, Richard L., Wendy Zales-Hultsman.
1987. Planning Parks for People. Venture Publishing, Inc. State College, PA.

National Park Service
1993. Guiding Principles of Sustainable Design. National Park Service, Denver Service Center. Denver, CO.

National Park Service
1995b. Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for the treatment of Cultural Landscapes. National Park Service, Washington D.C.

National Park Service
2004. A Sense of Place: Design Guidelines for Yosemite Valley. National Park Service, Yosemite National Park.

PLAE, Inc.
1993. A Design Guide: Universal Access to Outdoor Recreation. Berkeley, CA.

United States Forest Service
2001. The Built Environment Image Guide: For the National Forests and Grasslands. United States Forest Service.

U.S. Green Building Council
2007. New Construction and Major Renovation, Version 2.2 Reference Guide, Third Edition.

Photo 16 (left). Camping at the Tuolumne Meadows Campground.

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