

# SEEKING PUBLIC INPUT FOR THE FUTURE OF SEQUOIA & KINGS CANYON NATIONAL PARKS

## General Management Plan • Newsletter 3 • Spring 1999

Dear Friends,

General management planning for Sequoia and Kings Canyon continues, and we want to keep you informed of the progress. This newsletter summarizes the findings of three studies that will help in making decisions.

The first is a transportation study that assessed current traffic conditions and patterns in the parks. This study gathered information during three time periods during 1997 and 1998 — the high-use summer season (August 13–19, 1997), winter (March 6–10, 1998), and late spring (May 15–17, 1998). One part of the study examined future traffic projections and explored the parks' potential for public transit, which will provide useful information as we begin to explore desired future conditions for the parks.

The second study is a 1998 visitor survey that ranked satisfaction with park facilities, visitor services, and recreational opportunities. The 1998 survey was conducted as part of the measurement system for the Government Performance and Results Act.

The third study is a National Register of Historic Places determination of eligibility study for the Mineral King area. This study assessed the area's potential for listing on the national register. As a result, the park will be nominating the Mineral King Road cultural landscape to the national register.

Just to bring you up to date on some other things happening in the parks:

- The first phase of lodging at Wuksachi Village will open in late May this year. A new concessioner began constructing these facilities in summer 1998 to replace lodging in Giant Forest. The new John Muir Lodge at Grant Grove Village will also open for business this spring.
- A Backcountry and Wilderness Management Plan is underway. The plan provides specific guidelines for managing backcountry and wilderness areas. However, it does not address proposed wilderness areas. Proposed wilderness will be addressed by the general management plan.
- The Fire Management Plan is in the early stages of scoping. It will ultimately guide the parks' prescribed fire program.

Public workshops to help develop alternatives for the general management plan are scheduled for April 1999. As promised, these will take place around the state. The locations and times for the workshops are listed on the outside cover; specific locations will be announced in newsletter 4, which will be sent out the first week of April. During these workshops we will begin to develop the range of alternatives for the draft general management plan. Newsletter 4 will be a workbook that will require three to four hours to read and to fill out a questionnaire. We realize that this is a significant commitment of time, but your help is important, so please fill in as much as time or interest allows. If you cannot attend a workshop, the workbook still gives you a chance to participate in the alternative development phase of the planning process. There will be future opportunities for your input as well.

We look forward to your continued participation in this planning process. Thank you for your time and efforts.

Michael Tollefson, Superintendent

# TRANSPORTATION STUDY

## Background

Sequoia and Kings Canyon National Parks have two primary paved roads, with secondary roads that may or may not be paved. Generally the roads are mountainous, both steep and winding. Maybe because of this, most drivers are very alert, and there is a low accident rate. However, users unfamiliar with driving conditions may not operate vehicles safely or thoughtfully. Some people constantly use their brakes, resulting in over-heating. Slower drivers may not be aware that they are backing up traffic and that they should pull to the side of the road. Roads are most heavily used during the summer from 10:00 A.M. to 5:00 P.M. Visitors who arrive at the parks before 9:00 A.M. generally have more favorable driving experiences.

The Generals Highway is currently being rebuilt from the Ash Mountain entrance station. Approximately 7 miles have been rebuilt since 1993. The road will continue to be two lanes, but slightly wider where feasible, and additional pullouts and redesigned overlooks will improve safety and driving conditions. This coming summer will be the first time in some years that there will be no road reconstruction on Generals Highway. Portions of the Kings Canyon Highway were rebuilt in 1997 to repair 9 miles of storm damage on the way to Cedar Grove. While this work was outside the park on U.S. Forest Service land, the repairs restored access to the park.

## Circulation and Visitor Use

The purpose of the transportation study was to analyze current traffic conditions and to identify transportation needs of the parks. The study was carried out between August 1997 and May 1998 by the firm of BRW, Inc., together with Lee Engineering, L.L.C., and Traffic Research Analysis, Inc. The following types of information were gathered:

- hourly traffic volume counts collected at 16 sites in the parks (fewer sites in winter and spring due to snow loads and seasonal road closures)
- turning movements at the parks' four major intersections
- vehicle classification and length
- occupancy and length of stay in the parking lots
- visitor exit surveys conducted at each entrance station to identify movement and visitation patterns in the parks

This information was used to calculate the current vehicular traffic level of service (LOS) of the roadway network and the level of service projected for 2010. The study also helped identify areas with parking shortages and how visitors move within the parks.

## Level of Service

The level of service on a road describes the overall quality of traffic flow given the road's physical characteristics and the volume of traffic using it. A rating system is used to express a road's level of service in a series of categories ranging from A to F (see table 1). LOS ratings are a composite of speed and travel time, the freedom of vehicles to be maneuvered, and the likelihood of traffic interruptions or delays. Typically, as traffic volume increases, congestion intensifies, delays are longer, and the level of service declines. Other factors, such as the number of lanes, lane widths, shoulder widths, terrain, and the class of vehicles, can affect the LOS rating.

The service levels describe typical operating conditions. Accident frequency, pavement conditions, lighting, drainage, weather, and other factors are not used in determining the LOS ratings. This rating system provides overall indicators of the quality and safety of the driving experience. However, levels of service in the parks are usually lower than for typical two-lane roads with similar traffic volumes. This is due to the more rugged terrain, the limited number of passing zones, and the narrow lanes and shoulders often found on park roads.

## **Traffic Volumes**

A higher traffic volume in summer results in a lower level of service for park roadways than in other seasons. The levels of service on park roads during the winter and spring are good. However, during the summer peak hours much of the Generals Highway functions at LOS C.

The Grant Grove area and the Big Stump entrance road record the highest traffic volumes, with service level D. Congestion in the Grant Grove area appears to be impacted by traffic driving through to Hume Lake, north of Grant Grove. The Kings Canyon Highway is generally at C or B as it nears Cedar Grove; however, the Hume Lake road also functions at LOS D.

The Mineral King Road is identified as level B. Difficult driving conditions may make the road seem to function at a lesser level.

Currently much of the roadway network operates under crowded conditions during the summer. Projections for 2010 suggest annual growth of 1% to 2%. This would result in most road segments continuing to have crowded conditions, with additional deterioration of traffic service to LOS D for most park roads.

## **Turning Movements/Vehicle Length and Classification**

All four intersections on the Generals Highway that were surveyed (the intersections with Kings Canyon Highway, Lodgepole Road, Wolverton Road, and Moro Rock Road) functioned at LOS A or B during morning, midday, and evening peak times.

Currently a vehicle length advisory discourages vehicles exceeding 22 feet from entering the park at Ash Mountain. This system has effectively redirected larger vehicles to the less winding north entrance.

## **Parking Lots**

The following information was collected at 19 parking lots in the parks

- parking occupancy — the number of parking spaces occupied at different times of the day
- duration — the length of time vehicles are parked in a given space
- turnover rates — the number of times a parking space is filled during a given time frame (e.g., eight hours)

The study shows parking lots are approaching, at, or exceeding capacity during the peak summer season, with the exceptions of the Hospital Rock and Wolverton picnic areas.

Winter parking at all locations appears to be adequate for the foreseeable future.

Projections for 2010 summer parking needs indicate that the parking shortages will worsen at the most popular destinations.

## **Exit Surveys**

Exit surveys were used to determine the patterns of travel in the parks, park destinations, and where people were coming from or going to after visiting the parks. Approximately 60% of the visitors enter and exit through the same gate on weekdays. During weekends nearly 70% of the north entrance visitors exit the same way, and about 64% of the Ash Mountain visitors exit the same way. Not surprisingly visitors spend more time at activities close to the entrance gate they use. The Giant Forest area attracted the most use.

## **Transit Potential**

The consultants were asked to assess transit potential in the parks, and three summer season transit systems were suggested. Public transit systems could be used to accomplish several objectives:

- Improve access in areas with existing and expected future parking shortages.
- Provide access when parking was restricted during peak use times.
- Reduce or eliminate parking areas adjacent to visitor destinations, allowing natural resources to be restored.
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Shuttles would connect designated parking areas with visitor destinations, and lodging and campground areas could be connected as well. The result would be that parking demand at visitor destinations could be reduced, and more visitors would be assured of being able to visit park destinations.

## Recommendations

The transportation consultants have made the following recommendations.

*Level of Service* — A LOS D is minimally acceptable for peak summer visitation times. Applying this service level would result in a cap on visitation levels. Because of roadway congestion during the summer and the lack of parking spaces, visitation patterns and timing would still need to be altered, local transit systems would be needed to reduce congestion in developed areas, and visitors should be encouraged to visit during other seasons.

*Summer Season Local Transit* — To deal with parking shortages, visitor shuttle systems should be considered in Giant Forest and Grant Grove, running from areas where consolidated parking facilities could be provided. Giant Forest should be the first priority. A transit connection should be considered between Grant Grove and Giant Forest.

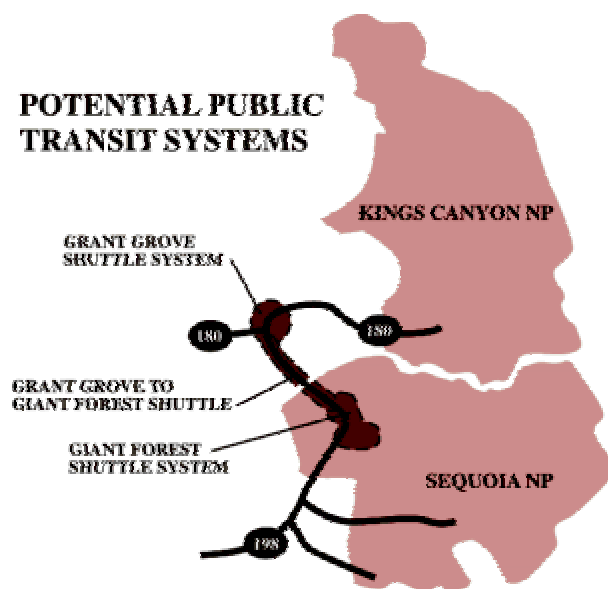
*Generals Highway / Kings Canyon Highway Intersection* — The intersection should be redesigned for safety and improved traffic flow.

*Mineral King Road* — An advisory should be issued to limit vehicle lengths to a maximum of 22 feet due to the narrow and curving nature of the road.

*Safety Concern* — Parking on Generals Highway near the Sherman Tree is unsafe since visitors cross traffic lanes and should be addressed.

*Guardrails* — Current guardrails should be analyzed, and those that are outdated should be replaced.

*Potential Parking Shortages* — The capacity of parking lots should be enlarged where feasible. Other parking areas should be redesigned to work with summer season transit systems.



## TABLE 1. LEVEL OF SERVICE RATINGS\*

**LOS A** represents free traffic flow. Individual users are virtually unaffected by the presence of other vehicles. Nearly all drivers are free to select their desired speeds and to maneuver within the traffic stream. The general level of comfort and convenience provided for drivers, passengers, or pedestrians is excellent.

**LOS B** represents high quality, stable traffic flow. The presence of other users in the traffic stream begins to be noticeable. The freedom to select desired speeds is relatively high, but there is a slight decline in the freedom to maneuver. The level of comfort and convenience provided to travelers is somewhat less than at LOS A. Users typically would not be delayed by slow-moving vehicles, especially when driving up steep grades.

**LOS C** marks the beginning of the range of traffic flow in which individual users are significantly affected by other vehicles. Drivers have little choice about choosing a speed because of traffic flow. Maneuvering within the traffic stream requires constant vigilance. With this level of service many drivers are delayed by slow-moving vehicles. The general level of comfort and convenience declines noticeably.

**LOS D** represents the upper end of traffic volumes that can be accommodated while maintaining stable traffic flow. Vehicle speeds and the freedom to maneuver are severely restricted. Drivers and pedestrians experience a generally poor level of comfort and convenience. Most users are delayed by other vehicles, and drivers perceive conditions as crowded.

**LOS E** represents operating conditions at or near the capacity of the roadway. All speeds are reduced to a low, but relatively uniform value. The freedom to maneuver is virtually non-existent, and maneuvering requires the driver to force vehicles or pedestrians to "give way." Comfort and convenience levels are extremely poor, and frustration on the part of drivers or pedestrians is generally high. Operations at this level are usually unstable because small increases in flow or minor disruptions in the traffic stream cause all traffic to stop.

**LOS F** is used to define forced flow. LOS F occurs when more traffic attempts to use a road segment than it can handle. Long queues form in the traffic stream. Operations in the queues are characterized by stop-and-go waves, and flow is extremely unstable. Comfort and convenience are extremely poor, and drivers may become frustrated.

*\*1994 Highway Capacity Manual, Special Report 209 identifies the six levels. Further description of conditions has been added.*

## VISITOR SATISFACTION SURVEY

We thought you would also be interested in the results of a national survey that provided feedback on overall visitor satisfaction at Sequoia and Kings Canyon. The survey was conducted by the University of Idaho's Cooperative Park Studies Unit to help the National Park Service comply with the Government Performance and Results Acts (GPRA). The purpose was to measure park performance related to goals for visitor satisfaction and visitor understanding/appreciation. Visitors were asked to rate park facilities, visitor services, and recreational opportunities on a scale from very poor to very good. The satisfaction measure is a combined response of the "good" and "very good" responses.

In June 1998 survey cards were distributed to a random sample of park visitors; the response rate was 20%. For Sequoia and Kings Canyon National Parks, 91% of the respondents said they were satisfied with the overall quality of facilities, services, and recreational opportunities. Specific visitor satisfaction responses include:

- *Park Facilities* — Visitors' overall satisfaction level was rated for the visitor center (91% satisfied); exhibits (85% satisfied); restrooms (64% satisfied); walkways, trails, and roads (91% satisfied); and campgrounds and picnic areas (90% satisfied). The combined park facilities satisfaction measure was 83%.
- *Visitor Services* — Under the broad topic of visitor services, visitors were asked to rate assistance from park employees (95% satisfied), park map or brochure (91% satisfied), ranger programs (89% satisfied), and commercial services in the parks (60% satisfied). The combined visitor services satisfaction measure was 84%.
- *Recreational Opportunities* — Under the broad topic of recreational opportunities, respondents were asked to rate learning about nature, history or culture (89% satisfied); outdoor recreation (87% satisfied); and sightseeing (92% satisfied). The combined visitor services satisfaction measure was 90%.

The survey is considered accurate within  $\pm 6\%$  with a 95% confidence. This means that if the same survey were conducted 100 times, the same results would occur 95 times. The survey does not apply to other seasons.

## **MINERAL KING DETERMINATION OF ELIGIBILITY**

**During the summer and fall of 1998 the National Park Service conducted a study to determine whether the Mineral King area is eligible for listing on the National Register of Historic Places, what level of significance the area has (national, regional, or local), and what structures and features contribute to the area's significance.**

### **National Register Properties**

The National Register of Historic Places is an inventory of districts, sites, structures, and objects significant in American history. National register properties, or those determined to be eligible for the register, are deemed significant based on the following criteria:

- (a) The properties are associated with events that have made a significant contribution to the broad patterns of our history.
- (b) The properties are associated with the lives of persons significant in our past.
- (c) The properties embody the distinctive characteristics of a type, period, or method of construction; or represent the work of a master; or possess high artistic values; or represent a significant and distinguishable entity whose components lack individual distinction.
- (d) The properties have yielded, or are likely to yield, information important in prehistory or history.

Properties that are listed on the register, or are determined eligible, are afforded limited protection under the National Historic Preservation Act. This act requires federal agencies to examine what effects their actions might have on significant properties and to devise ways to avoid or lessen actions that would negatively affect characteristics that make a property significant.

Any damaging actions are normally mitigated by thoroughly recording the property. Specific mitigating actions are determined through consultations carried out among the agency, the state historic preservation officer, and other interested parties.

### **Results of the Study**

Researchers conducting this study concluded that a corridor district along the Mineral King Road is eligible for listing on the national register as a historic vernacular cultural landscape. The landscape is considered to be significant at the local level under criteria "a," "c," and "d." The landscape's period of significance is defined as 1873 to 1942.

What is a Cultural Landscape?

In the broadest sense a cultural landscape is a tract of land that reflects human adaptation to the land and human use of natural resources. Landscapes are often described in the way the land has been organized and used, patterns of

settlement, land use, systems of circulation (e.g., roads), and the types of structures built. Cultural landscapes reflect relationships between humans and the land over time.

The National Park Service recognizes four types of cultural landscapes

- historic designed landscapes — deliberately designed gardens, grounds, and outdoor settings
- historic vernacular landscapes — tracts of land, often rural, that reflect the patterns of settlement, use, and development through time
- historic sites — tracts of land that are associated with historic events (e.g., battlefields or presidential homes)
- ethnographic landscapes — areas that are associated with contemporary groups and that are used in traditional ways (e.g., traditional wild rice gathering areas used by present-day Chippewa)

See Newsletter 2 for more information on Mineral King.  
The newsletter is still posted on our Web site at <http://www.nps.gov/planning/seki/gmp/2/seki.htm>

### Mineral King's Significance

Mineral King is significant because it is a composite record of Euro-American use and preservation of a remote high Sierra valley. The area reflects a number of prominent themes of the Sierra, California, and the West.

The determination of eligibility identifies four historical contexts for the historic resources of the Mineral King cultural landscape district — *mining, resource management and preservation, recreation, and the environmental movement*, as described below:

- *Mining* — Archeological remains and ruins (e.g., the Empire mine and tramway) and associated features (e.g., historic trails) reflect the unsuccessful attempts to mine silver in the valley (criteria "a" and "d").

The Mineral King Road was originally constructed to permit mining access to the region. It continues to define access to and circulation within the landscape, and it is now the common thread linking all the various resources through time and space. The road's rugged character limits the number of visitors, thus helping to retain the remote and rustic nature of the valley (criteria "a" and "c").

- *Resource Management and Preservation* — The Atwell sawmill and sequoia stumps tell the story of high Sierra logging and its role in bringing hydro-electric power to the region and in launching environmental concerns that gave rise to early national conservation movements (criterion "a").

Dams on Monarch, Crystal, Lower Franklin, and Eagle Lakes and other water diversion features were part of the first commercial enterprises to bring electricity to Tulare County (criterion "c").

- *Recreation* — The three cabin tracts on public land reflect the growing American demand for recreational opportunities, and the U.S. Forest Service's response to this demand through its summer residence program in the 1920s and 1930s (criteria "a" and "c").
- *Environmental Movement* — Although there are no resources specifically associated with this context, the movement has affected the history of the Mineral King area (criterion "a").

These historical contexts reflect over 100 years of resource management and preservation in the Mineral King area.

## **The Mineral King Road Cultural Landscape**

Mineral King Road is the core of the proposed cultural landscape. The boundaries of the proposed national register district follow the route of this road, expanding periodically to include features such as a sawmill site and cabin tracts that contribute to the area's significance. Even though the surrounding mountains and other geologic features (the viewshed) are not within the boundaries of the proposed district, these features help define the character and significance of the landscape.

## **HOW WILL THIS INFORMATION BE USED?**

The results of these three studies affect the range of alternatives that will be considered in the general management plan.

- The transportation study indicates that congestion will continue to increase and that public transit systems are only feasible in certain areas. The general management plan needs to decide how to use these findings in meeting visitor expectations and setting visitor capacities within the parks.
- While the visitor survey indicates a generally high level of public satisfaction with park facilities, services, and recreational opportunities, current trends indicate that types of park users are likely to change over the next 30 years. The general management plan needs to look at whether current facilities will meet future needs. What steps should be taken to assure visitors of continued high-quality experiences?
- Finally, the Mineral King Road corridor will be nominated to the National Register of Historic Places as a cultural landscape. This nomination emphasizes the importance of determining how the Mineral King area should be managed in the future for public benefit.

All of these issues will be raised in the next newsletter, which will look at specific trade-offs affecting a potential range of alternatives for the general management plan.

### **Spring 1999 Public Workshop Schedule**

**Public workshops to help generate a range of future management alternatives for the parks will be held in the following cities. Specific locations will be announced in the next newsletter.**

**San Francisco/Oakland — April 17, 9:00 a.m.**

**Sacramento — April 17, 6:00 p.m.**

**Bishop — April 18, 1:00 p.m.**

**Western Los Angeles — April 19, 6:00 p.m.**

**Three Rivers — April 20, 6:00 p.m.**

**Visalia — April 21, 6:00 p.m.**

**Fresno — April 22, 6:00 p.m.**