

# **Grand Canyon National Park South Rim Visitor Transportation Plan**

## **Environmental Assessment / Assessment of Effect**

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**Lead Agency:** National Park Service, U.S. Department of the Interior  
**Cooperating Agency:** U.S. Forest Service, U.S. Department of Agriculture

**Abstract:** The National Park Service, in cooperation with the U.S. Forest Service, is proposing a South Rim visitor transportation plan for Grand Canyon National Park to address the most pressing traffic, parking, and visitor access issues in Grand Canyon Village. This environmental assessment / assessment of effect evaluates four alternatives for the transportation plan — alternative A is the no-action alternative, alternative B (the preferred alternative) would provide visitor parking at Canyon View Information Plaza and potentially near Tusayan, alternative C would emphasize providing park visitor parking near Tusayan south of the park, and alternative D would emphasize providing visitor parking at Canyon View Information Plaza.

Based on issues identified through the public and agency scoping process, the impact analysis focuses on cultural resources (archeological resources; historic structures, districts, and cultural landscapes; and ethnographic resources), natural resources (vegetation, wildlife, special status species, soundscapes, and visual and scenic resources), and social resources (transportation; visitor access, use, and experience; socioeconomic environment; gateway communities; and park operations and management).

**Public Comment:** Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. This environmental assessment / assessment of effect will be on public review for 30 days. If you wish to provide comments, you may mail them to the name and address below or provide comments online at:

<http://parkplanning.nps.gov/grca> (click the project title and follow instructions).

All submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

Written comments may be mailed to:

Superintendent, Grand Canyon National Park  
Attention: Office of Planning and Compliance  
P.O. Box 129  
Grand Canyon, AZ 86023

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# SUMMARY

## INTRODUCTION

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The National Park Service (NPS), in cooperation with the U.S. Forest Service (USFS), is proposing a visitor transportation plan for the South Rim of Grand Canyon National Park. Four alternatives are evaluated in this document — the no-action alternative and three action alternatives. The life of the plan is through 2020.

### Purpose of the Plan

The purpose of the plan is to address the most pressing traffic, parking, and visitor access issues in Grand Canyon Village. This environmental assessment and assessment of effect discloses the expected effects to the human environment of implementing the transportation plan. The human environment is defined as the natural and physical environment and the relationship of people to that environment.

The U.S. Forest Service is a cooperating agency in the development of this document because Kaibab National Forest is an adjoining national forest system area whose lands and resources may be affected by actions under the proposed alternatives.

This project will not preclude other future transportation systems from being implemented, including those that may be required for substantial increases in visitation.

### Need for Action

A flexible visitor transportation plan for the South Rim is needed to respond to changes in visitation levels and visitor travel needs through the year 2020, to improve visitor experience and safety, to enhance traffic flow, to provide adequate parking capacity, and to improve information that directs visitors through the park. Resources currently damaged by parking in nondesignated areas also need to be restored and protected.

## PROPOSED PROJECT

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### Project Area

The visitor transportation plan for the South Rim of the Grand Canyon encompasses areas affected by existing traffic and parking congestion as well as the proposed locations of infrastructure and transportation service improvements. The South Rim is generally defined as the portion of Grand Canyon National Park bordered by the eastern park boundary, the southern canyon rim, Hermits Rest, and the southern park boundary. The project area includes the portion of the South Rim from Yaki Point on the east to the beginning of Hermit Road near Bright Angel Lodge on the west, and from the canyon rim on the north to the park boundary on the south. For the purposes of the transportation plan, visitors who enter the park at the South or East Entrance Stations are considered to be traveling to and within the South Rim. The plan also addresses shuttle bus service along Hermit Road west to Hermits Rest.

The project area also includes national forest system lands in Kaibab National Forest south of Grand Canyon National Park and just north of the community of Tusayan, adjacent to Arizona State Route (SR) 64.

This transportation plan recommends operational and visitor information strategies that would extend beyond the immediate project area along the major travel routes to the South Rim.

### Objectives

Project objectives are grounded in the park's enabling legislation and are compatible with direction and guidance provided by the park's 1995 *General Management Plan* (NPS 1995b). The primary objectives for the South Rim visitor transportation plan are:

- Improve private vehicle parking as needed to meet current and future visitor demand.
- Sustain the improved visitor experience at the South Entrance Station by providing capacity to meet future increases in visitor, employee, resident, and commercial traffic.
- Reduce overall vehicle traffic through Grand Canyon Village in 2020 by 15%–25% during peak periods.
- Provide a variety of means to travel to the Canyon View Visitors Center to afford all visitors the opportunity to receive park information and orientation soon after their arrival.
- Improve and increase tour bus parking and access to the rim to better accommodate current and future demand.
- Restore areas damaged by improper vehicle parking in nondesignated areas and social trailing in places such as Mather Point; encourage best management practices to reduce or avoid resource damage.
- Reduce safety risks due to conflicts between pedestrians, parked vehicles, and moving traffic near Mather Point and elsewhere in Grand Canyon Village.
- Protect and enhance sensitive park resources through implementation of transportation facility improvements.
- Provide visitors with enhanced opportunities to stage (or plan) their visit at Canyon View Information Plaza, including access to improved information about trip planning, park orientation, and travel mode choices and the ability to obtain basic (or limited) pre-packaged food and drinks.
- Provide enhanced access to interpretive information so visitors gain a better appreciation for the values of Grand Canyon National Park.
- Provide support facilities as needed to operate and manage the transportation system, including park fee collection operations at the South Entrance Station.
- Improve shuttle bus service throughout the South Rim.
- Work with gateway communities to achieve mutual transportation goals.

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## ALTERNATIVES

The alternatives considered in this environmental assessment / assessment of effect were developed to address the project purpose and need for the action and were based on the objectives, planning framework, and input from the public scoping effort. The alternatives were defined at a planning level of detail for the purposes of understanding the potential impacts, benefits, and costs of the alternatives.

Four alternatives, including the no-action alternative, are analyzed. The no-action alternative, as required under the National Environmental Policy Act (NEPA), assumes that no substantial physical or operational changes would occur within the project area except for those already underway or planned for the near future. Current conditions would continue.

The action alternatives present an array of options to achieve the project objectives through combinations of physical improvements and operational strategies. All of the action alternatives would accommodate a moderate increase in visitation consistent with long-term visitation trends through the year 2020, and they would be implemented in phases.

All of the action alternatives include options for

- new visitor and tour bus parking
- enhancement of the park shuttle bus system

- modifications to the South Entrance Station
- improvements to Grand Canyon Railway loading and unloading operations
- visitor access improvements at Yaki Point
- improvements to visitor access and amenities at Mather Point and Canyon View Information Plaza (CVIP)
- transportation operational strategies to improve the utilization of visitor transportation facilities and services, provide useful information to visitors, and support ongoing management of the transportation system to meet evolving visitor needs

The alternatives differ primarily in their approach to where development would occur (inside or outside the park) and how visitors would arrive (either by private vehicle or shuttle). The action alternatives all provide for an increase in visitor parking to meet projected demand, while maximizing the use of existing parking lots in Grand Canyon Village. New parking, primarily for day visitor use, would be located at Canyon View Information Plaza, or a combination of Canyon View Information Plaza and national forest system land north of Tusayan, with shuttle bus service to Canyon View Information Plaza. All of the action alternatives would provide short-term parking, intended to be used while visitors are at the plaza, so that visitors would have convenient access to information and visitor services needed to plan an enjoyable visit to the South Rim.

### **No-Action Alternative**

Alternative A, the no-action alternative, assumes that the park's overall transportation system, including park facilities, management strategies, and visitor services, would continue with no substantial improvements or modifications except for those currently being planned. Alternative A provides a baseline for comparing the other alternatives, evaluating the magnitude of proposed changes, and

measuring the environmental effects of those changes. Those projects or conditions for which NEPA compliance has been completed or is underway are assumed to be implemented under this alternative because they represent the current NPS management direction for the park. No new construction would be triggered by this alternative, beyond what is already scheduled. Alternative A assumes that the current mix of transportation modes and visitor management measures would continue through the 2020 planning horizon.

### **Action Alternatives**

The action alternatives include coordinated improvements to support multimodal travel to and within Grand Canyon Village. All action alternatives would:

- Implement an array of transportation operational strategies to promote alternative travel modes to the park and better integrate connections between parking, transit, wayfinding, and trip planning.
- Provide expanded tour bus parking, enhanced tour bus loading and unloading areas, and a tour bus management program to increase opportunities for tour bus access.
- Provide greater visitor access and enhanced visitor services at Canyon View Information Plaza, including a theater, food items, and bicycle rentals.
- Implement parking management strategies for new and existing parking lots.
- Enhance the park's South Rim shuttle bus system, with added service to reduce overcrowding and improve travel time.
- Modify the South Entrance Station to sustain recent improvements in waiting time and congestion.

- Improve loading and unloading of tour buses serving Grand Canyon Railway passengers.
- Limit the costs and impacts of new development by maximizing the use and effectiveness of existing facilities and services.
- Implement proposed actions in phases, using an adaptive management approach to monitor the effects of the improvements on transportation conditions and visitor use and to determine the timing and required characteristics of future improvements.

The highlights of the three action alternatives are described below.

#### ***Alternative B: Preferred Alternative***

The National Park Service would construct new visitor parking at Canyon View Information Plaza and initiate a new shuttle bus route to connect Canyon View Information Plaza with the gateway community of Tusayan.

This alternative would emphasize collaboration with the gateway community of Tusayan in meeting peak-season (Memorial Day through Labor Day) visitor transportation needs by providing a choice of day visitor parking at Canyon View Information Plaza, at currently available parking spaces in the community of Tusayan, and/or to the extent needed over time, at a new parking and shuttle facility on national forest system land north of Tusayan. Frequent shuttle bus service would be provided from Tusayan to Canyon View Information Plaza.

Parking at Canyon View Information Plaza would accommodate short-term use of the visitors center and Mather Point, as well as long-term uses for visitors who chose to leave their vehicles there and travel on shuttle buses to destinations throughout Grand Canyon Village. Visitors also could choose to drive through Grand Canyon Village and park in existing lots at popular visitor destinations.

#### ***Alternative C: Tusayan Parking Emphasis***

The National Park Service would concentrate most new facilities outside the park, thereby minimizing development within the park. A new large visitor parking area and shuttle staging area would be provided on national forest system land just north of Tusayan. Visitors would have the option of using frequent shuttle bus service from Tusayan to Canyon View Information Plaza or driving into the park. The remote parking and shuttle bus service would operate from March through September. Sufficient parking would be provided near Canyon View Information Plaza for short-term use by visitors while at the plaza or Mather Point. It is assumed that all long-term parking by day visitors inside the park would occur at existing parking lots within Grand Canyon Village.

#### ***Alternative D: Canyon View Information Plaza Parking Emphasis***

The National Park Service would concentrate new transportation facilities within the park at Canyon View Information Plaza, thereby simplifying wayfinding and providing a consistent arrival experience for all day visitors to Grand Canyon Village. This alternative would provide a new large parking area to accommodate short-term use as well as long-term use by visitors who chose to leave their vehicles at Canyon View Information Plaza and travel by shuttle bus to destinations throughout Grand Canyon Village. This alternative would maximize the use of Canyon View Information Plaza by focusing visitor access at this location.

### **ISSUES RAISED BY AGENCIES AND THE PUBLIC**

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The National Park Service began public scoping in March 2006 with distribution of a scoping letter that provided transportation planning background information and asked for comments on draft purpose and need statements, project objectives, and preliminary alternative concepts. The letter was distributed to approximately 600 individuals

and organizations, including state and federal agencies and associated Native American tribes. It was also posted on park and NPS Planning, Environment and Public Comment (PEPC) websites. Four public open house meetings were held during April 2006 in Arizona and Nevada to provide information and elicit comments on the project during the scoping period.

The National Park Service received approximately 300 comments as a result of these efforts. A predominant theme of the comments related to the need for transportation improvements within the South Rim area while protecting natural and cultural resources. Other comments related to types of transit service that should be provided, the need for improvements to the South Entrance Station, and preferences for balancing personal vehicle, tour bus, shuttle bus, and train transportation needs within the South Rim area.

A newsletter was distributed in August 2006 to a mailing list of approximately 600 individuals, organizations, agencies and tribes. It described preliminary alternatives and requested issues and concerns. Approximately 55 comments were received and included topics such as visitation forecasting; traffic reduction assumptions in Grand Canyon Village; need for incentives related to transit; maximizing the use of existing parking facilities; connectivity for bicyclists and pedestrians in the park transportation system; additional tour bus access; and sharing of parking facilities in Tusayan and at Mather Point. Comments were reviewed and considered during refinement of the alternatives for detailed analysis.

### **THE AGENCIES' PREFERRED ALTERNATIVE**

The National Park Service and the U.S. Forest Service have evaluated the alternatives with respect to how well they meet the project objectives and their beneficial and adverse impacts on all resource topics. Alternative B

would offer the best combination of long-term benefits by achieving all of the project objectives while also ensuring a high level of resource protection and enhancement of the exceptional natural and cultural resources found in Grand Canyon National Park, consistent with the National Environmental Policy Act and *NPS Management Policies 2006*. Under alternative B the National Park Service would restore areas historically damaged by improper vehicle parking and social trailing, would employ best management practices to reduce or avoid any resource damage, and would preserve historic resources to enhance visitor access.

### **THE ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The National Park Service is required to identify the environmentally preferred alternative, which is the alternative that best meets the criteria or objectives set out in the National Environmental Policy Act, section 101.

In meeting project objectives, the impacts of alternatives B and C would be of similar types and intensity and are very close in meeting the definition of environmentally preferred. The key differences between the two alternatives are that alternative C would disturb fewer natural and cultural resources, but alternative B would provide a greater opportunity for achieving a wide range of beneficial uses of the environment, maintaining an environment that supports diversity and variety of individual choice, and achieving a balance between population and resource use.

Therefore, through the process of internal and public scoping, and after completing the environmental analysis, the National Park Service identified alternative B, the preferred alternative and alternative C, the Tusayan parking emphasis, as the environmentally preferred alternatives in this document. Although they meet individual Council on Environmental Quality criteria somewhat differently, overall they do so at approximately the same level.

## COMPARISON OF ALTERNATIVES AND PROJECT OBJECTIVES

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The following paragraphs summarize how the alternatives meet the project objectives listed above:

- *Alternative A: No Action* — Alternative A would not meet any of the objectives. This alternative would not reduce vehicle traffic and would result in increases in traffic over time. Access to Canyon View Information Plaza would continue to be limited to shuttle buses, tour buses, and pedestrians from parking at or near Mather Point.
- *Alternative B: Preferred Alternative* — Alternative B would fully meet all project objectives. This alternative would provide up to 900 new parking spaces at Canyon View Information Plaza and up to 400 new parking spaces near Tusayan for visitor use. Proposed parking would meet existing needs and future needs assuming a 23% increase in visitation over the life of the plan (through 2020). Parking would be convenient to most visitor use areas and would be accessible by shuttle bus.
- *Alternative C: Tusayan Parking Emphasis* — Alternative C would mostly meet project objectives. This alternative would provide up to 400 new short-term parking spaces at Canyon View Information Plaza and up to 920 new parking spaces near Tusayan for visitor use. Proposed parking would meet existing needs and future needs assuming 23% increase in visitation over the life of the plan. The alternative would only partially meet the objective to improve shuttle bus access throughout the South Rim. Users of the South Kaibab trailhead would not be able to park at Canyon View Information Plaza. Some visitors might not be able to find parking at Canyon View Information Plaza at peak times. Many visitors would need

to park in Tusayan at locations distant from their desired destinations.

- *Alternative D: Canyon View Information Plaza Parking Emphasis* — Alternative D would mostly meet project objectives. This alternative would provide up to 1,190 new parking spaces at Canyon View Information Plaza for visitor use. Proposed parking would meet existing needs and future needs assuming a 23% increase in visitation over the life of the plan. Parking would be very convenient to most visitor use areas and would be accessible by shuttle bus. This alternative would have a greater area of disturbance and new construction at Canyon View Information Plaza than the other alternatives.

## ENVIRONMENTAL CONSEQUENCES

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Impact topics for the environmental analysis were determined based on applicable laws, regulations, and policies, along with comments from park staff and the public, including governmental agencies. Impacts are generally described below and the impacts of alternatives B, C, and D are compared to what would happen under the no-action alternative (alternative A). No resources or values in Grand Canyon National Park would be impaired by any alternative, no impacts were found to be unacceptable, and all proposed uses are deemed appropriate. The following is a summary of the impact topics and conclusions from this environmental assessment / assessment of effect.

### Cultural Resources

#### *Impacts on Archeological Resources*

The proposed project actions would affect both known and unknown archeological resources in the project area. No direct or indirect impacts to known archeological resources would occur under the no-action alternative. Alternative B would result in local, long-term, negligible to moderate, direct and indirect, adverse impacts. One known archeo-



logical resource would be directly impacted. However, a memorandum of agreement with the state historic preservation officer and tribes would be prepared to outline the terms and conditions to mitigate adverse effects to this site. Under alternatives C and D local, long-term, negligible to minor, adverse indirect impacts would occur; impacts would be minimized through mitigation measures.

### ***Impacts on Historic Structures and Historic Districts/Cultural Landscapes***

Proposed project actions would affect some historic resources by introducing new features or by potentially removing or modifying contributing historic features. Under the no-action alternative no impacts would occur to historic structures, districts, or cultural landscapes. Under alternatives B, C, and D local, long-term, minor, adverse impacts would result from modifying the Grand Canyon Railway yard and rehabilitating the Mather Point overlook. Mitigation measures would minimize these effects.

### ***Impacts on Ethnographic Resources***

Twelve associated Native American tribes or bands claim traditional association with the park, and the Havasupai have identified the proposed project areas as an area of concern. While ethnographic resources may be present in the vicinity of the study area, no specific ethnographic resources or traditional cultural properties have been identified. Under the no-action alternative and alternative C local, long-term impacts would be negligible and adverse. Alternative B would result in local, long-term, negligible to minor, adverse impacts, and alternative D in local, long-term, minor, adverse impacts.

## **Natural Resources**

### ***Impacts on Vegetation***

Proposed activities would result in new ground disturbance that would affect native vegetation. Tree removal would also be necessary under all action alternatives. Non-

native plant species would be introduced in areas of newly cleared soils. Under the no-action alternative long-term impacts would be local, negligible to minor, and adverse largely because of continued roadside parking and social trailing near Mather Point. Alternatives B and C would result in local, long-term, negligible to moderate, adverse impacts at Canyon View Information Plaza and Mather Point, the South Entrance Station, along the new Greenway Trail, and in Grand Canyon Village and Tusayan. Alternative D would result in local, long-term, minor to moderate, adverse impacts to vegetation at these same locations. The action alternatives would have local, long-term, negligible to minor, beneficial impacts at Canyon View Information Plaza and Mather Point from revegetation of disturbed areas.

### ***Impacts on Wildlife***

Proposed activities would disturb plant communities, which would then affect wildlife habitat. Impacts would include direct mortality during construction, species displacement from habitat following vegetation removal, habitat fragmentation, change in habitat quality, lighting changes, noise disturbance from construction as well as increased traffic and trail use. The no-action alternative would result in local, long-term, negligible, adverse impacts. Alternatives B, C, and D would result in local, long-term, negligible to moderate, adverse impacts at Canyon View Information Plaza and Mather Point, the South and East Entrance Stations, along the new Greenway Trail, at Yavapai Observation Station and Yaki Point, and in Grand Canyon Village and Tusayan (except alternative D would have no impacts in Tusayan). Alternatives B and D would also have local, long-term, minor, beneficial impacts at Canyon View Information Plaza and Mather Point, whereas alternative C would have local, long-term, negligible, beneficial impacts at these sites.

***Impacts on Special Status Species***

Federally listed threatened or endangered species, species proposed for listing, and species of particular concern would be affected by proposed actions. A biological assessment is being prepared for this project to facilitate consultation with the U.S. Fish and Wildlife Service and will detail the potential for effects to federally listed species. Alternative A would result in local, long-term, negligible to minor, adverse impacts to special status species at Canyon View Information Plaza and Mather Point, Grand Canyon Village, Yavapai Observation Station, Yaki Point, South Entrance Station and Tusayan.

Under alternatives B, C, and D there would be local, short- and long-term, negligible to moderate, adverse impacts. Local, long-term, negligible to minor, beneficial impacts would also occur from removing a section of the South Entrance Road at Mather Point. Under alternative B local, long-term, minor to moderate, adverse impacts would occur as a result of direct mortality and loss of habitat for Tusayan flameflowers at Canyon View Information Plaza and Tusayan. Under alternative C local, long-term, minor, adverse impacts to the Tusayan flameflower would occur because the population at Canyon View Information Plaza would be avoided, but individuals and habitat would be lost at the Tusayan development site. Under alternative D impacts would be minor due to the loss of habitat for the Tusayan flameflower at Canyon View Information Plaza but not at Tusayan.

***Impacts to Soundscapes***

Proposed project actions would generate construction-related noise above existing ambient conditions in the project area and would involve long-term changes in traffic levels, vehicle types, parking areas, transit operations, facilities, and activities in the project area. Under the no-action alternative local, long-term impacts from continued use would be negligible to minor and adverse.

Alternatives B, C, and D would result in local, long-term, negligible to moderate, beneficial and adverse impacts from transportation and visitor-related noise.

***Impacts to Visual and Scenic Resources***

Changes to views of Grand Canyon vistas and the scenic character of key visitor areas and scenic overlooks would be affected by proposed actions. Under alternative A there would be local, long-term, minor, adverse impacts from ongoing vehicular and pedestrian congestion at Mather Point and tour bus congestion in Grand Canyon Village.

Under alternative B local, long-term impacts would be moderate and adverse at Canyon View Information Plaza; moderate and beneficial at Mather Point, minor and beneficial at Grand Canyon Railway, and minor and adverse at Tusayan and the South Entrance Station. Local, long-term impacts under alternative C would be minor and adverse at Canyon View Information Plaza and the South Entrance Station, minor and beneficial at Mather Point and Grand Canyon Railway, and moderate and adverse impacts at Tusayan. Local, long-term impacts under alternative D would be moderate and adverse at Canyon View Information Plaza, moderate and beneficial at Mather Point, minor and beneficial at Grand Canyon Railway, and minor and adverse at the South Entrance Station. Other locations under all action alternatives would have local, long-term, negligible to minor, adverse impacts. The adverse impacts under alternative B, C, and D would be lessened by mitigation measures and revegetation efforts in disturbed areas.

***Social Resources******Impacts on Transportation***

Proposed actions would affect visitor transportation to and within Grand Canyon Village. Impacts would include changes in parking, transportation modes, traffic volumes and flow on roads, and shuttle bus service. Alternative A would result in local, long-term,

moderate, adverse impacts to modes of access and traffic volumes due to a 20% increase in visitor traffic; a local, long-term, moderate, adverse impact to shuttle bus service due to increasing demand and no increase in shuttle bus capacity; local, long-term, moderate, adverse impacts to parking conditions due to increased parking demand over time with no accompanying increase in supply; and overall local, long-term, moderate, adverse impacts on transportation. Alternative B would result in local, long-term, moderate, beneficial impacts to modes of access and traffic volumes from shifting a substantial amount of visitor travel from private vehicles to shuttle buses, from increases in shuttle bus service and more efficient routes, and from greatly expanded parking supply in locations reasonably convenient to popular visitor destinations. Overall, long-term impacts on transportation would be local, moderate, and beneficial. Alternative C would result in local, long-term, moderate, beneficial impacts to modes of access and traffic volumes from shifting a substantial amount of visitor travel from private vehicles to shuttle buses. There would also be local, long-term, moderate beneficial impacts on shuttle bus service quality from improved service levels and visitor convenience. There would be local, long-term, minor, beneficial impacts from additional parking, but a large portion of it would be outside the park. Overall, the long-term impacts on transportation would be local, moderate, and beneficial. Under alternative D long-term impacts would be local, moderate, and beneficial on modes of access and traffic volumes. There would be no change in modes of travel to the park and the traffic volumes entering through the South Entrance Station, but there would be increased travel by the internal park shuttle buses and substantially reduced traffic volumes through Grand Canyon Village. There would be local, long-term, moderate, beneficial impacts from increased shuttle bus service and from greatly expanded parking convenient for most visitors. Overall, alternative D would have local, long-term,

moderate, beneficial impacts on transportation.

### ***Impacts on Visitor Access, Use, and Experience***

The primary objectives of this project encompass many visitor experience components, including enhancing visitor convenience by improving travel times, providing adequate parking to meet current and future demand, reducing delays at the entrance stations, improving wayfinding elements to make it easier to locate destinations by all transportation modes, accommodating a wide range of visitor experiences, providing access to visitor amenities and services by several modes, and improving safety for visitors. Alternative A would make no changes to the park's transportation system, how visitors travel to and through the park, ease of access to desired destinations, or visitor safety related primarily to increased visitation and congestion. As a result, alternative A would have local, long-term, negligible to moderate, adverse impacts to visitor access, use, and experience. Alternative B would result in local and regional, long-term, minor to moderate, beneficial impacts depending on the transportation mode used. This would be due to improved access to desired visitor destinations, as well as increased accessibility to educational and interpretive opportunities; there would be benefits to visitors arriving by all modes of access, particularly visitors in private vehicles and visitors going to Mather Point. Alternative C would have local and regional, long-term, minor to moderate, beneficial impacts as well due to greater visitor satisfaction in many areas, including decreased congestion and wait times, and improved safety and universal access options, with benefits for visitors arriving by all modes of access, but to a lesser extent for visitors in private vehicles due to less parking at Canyon View Information Plaza than in alternatives B and D. Alternative D would result in local, long-term, minor to moderate, beneficial impacts to visitor access, use and experience due to improved ease of access to desired visitor experiences and destinations

similar to alternatives B and C. There would be a great benefit for visitors arriving by private vehicle because this alternative would provide the most parking at Canyon View Information Plaza.

### ***Impacts on the Socioeconomic Environment***

Proposed alternatives would affect park visitation, length of visitor stays, visitor spending patterns, and numbers of employees among other factors both within the park and in local communities. Changes in these factors would have beneficial or adverse impacts on local and regional economic health. Under alternative A long-term impacts would be local, negligible to minor, and adverse from increased visitation and related vehicle congestion at the South Entrance Station and within Grand Canyon Village, possibly influencing the length of visitor stays. There would be no adverse impacts on employment, housing, or economic output. Alternatives B, C, and D would all result in local and regional, long-term, minor, beneficial impacts on tourism and economic output from transportation operations; local and regional, long-term, minor to moderate, beneficial impacts on employment; and local and regional, long-term, minor, adverse impacts on housing. In addition, these alternatives would have local, long-term, minor, beneficial impacts to park employment and economic output from new services at Canyon View Information Plaza, but regional, long-term, minor, adverse impacts on housing. There would also be potential local, long-term, moderate, beneficial impacts to the community of Cameron.

### ***Impacts on Gateway Communities and Adjacent Land Uses***

Proposed alternatives include the construction of staging areas within the community of Tusayan. Any changes in visitation patterns, visitation numbers, or the ways that visitors enter the park would affect this community. Changes would also affect other gateway communities, and surrounding land uses would be

subject to increased development pressure and traffic. Under alternative A there would be local, long-term, minor to moderate, adverse impacts on gateway communities because of traffic and lack of housing, which would affect the quality of life. NPS actions would be inconsistent with adjacent land use plans. Alternative B would result in local, long-term, minor to moderate, beneficial impacts on gateway communities because of improved quality of life and consistency of NPS actions with adjacent land use plans. Alternative C would result in local, long-term, minor, beneficial impacts on gateway communities because of improved quality of life, and local, long-term, moderate, beneficial impacts from consistency of NPS actions with adjacent land use plans. Alternative D would result in local, long-term, minor to moderate, beneficial impacts on gateway communities because of improved quality of life, and local, long-term, moderate, adverse impacts because of inconsistency of NPS actions with adjacent land use plans. All action alternatives would have local, long-term, negligible to minor, adverse impacts from some limited traffic congestion and potential increases in rental housing rates.

### ***Impacts on Park Operations and Management***

Park operations and management, including operational efficiency, staffing needs, inter-agency relations, and costs would be affected by proposed actions. Alternative A would result in local, long-term, minor, adverse impacts on park operations and management. Alternatives B, C and D would all have local, long-term, moderate, adverse and beneficial impacts because of improved operations. Alternative D would have local, long-term, minor, adverse and beneficial impacts. Adverse impacts would result from increased capital and operating costs; however, beneficial impacts would be achieved from operational efficiencies, improved transportation programs, and enhanced visitor services and programs, particularly during the peak visitation months.