



FINDING OF NO SIGNIFICANT IMPACT

Bright Angel Trailhead Area Design Plan Grand Canyon National Park

Grand Canyon National Park proposes to develop and implement a design plan for the Bright Angel Trailhead Area located in Grand Canyon Village on South Rim. Proposed actions described in the November 2007 Environmental Assessment include developing a plaza near the primary trailhead; separating vehicle parking and circulation areas from pedestrian zones; enhancing trail connections and wayfinding; and constructing a new restroom near the proposed plaza and existing mule corral. Future implementation phases, if additional funding becomes available, include hardening the parking area surface and delineating approximately 70-80 parking spaces, creating an interpretive node at Kolb Garage and enhancing signage, revegetation and site amenities.

Several thousand day and overnight hikers, mule and shuttle bus riders, and rim walkers pass through the Bright Angel Trailhead Area on a typical summer day. This visitor volume with their multiple and often competing uses creates congestion and confusion in this popular South Rim area of Grand Canyon National Park. The Trailhead Area has significant design, maintenance, and layout issues. Its existing facilities (parking, trailhead, paths, landscaping, and connections with Hermit and Village Route Shuttle Bus Transfers) are inadequate for current use. The area's two chemical toilets are not universally accessible and there are no park-provided public restroom facilities within a reasonable walking distance. Potable water is similarly unavailable. The trailhead layout does not provide a sense of arrival commensurate for a primary trailhead at a major national park, nor does it function effectively for visitors (Figure 3). Visitors have difficulty finding their way through the area, and visitor experience and information is compromised and inadequate.

The project's primary objectives include enhancing the area's wayfinding and site amenities (including signing, shade, seating, and restroom availability), improving paths and connecting trails, eliminating rim edge vehicle parking to provide enhanced pedestrian circulation, and creating a sense of place—an area visitors will immediately recognize as the Bright Angel Trailhead.

In November 2007 the National Park Service (NPS) prepared an *Environmental Assessment for the Bright Angel Trailhead Area Design Plan*. This EA, in accordance with the National Environmental Policy Act, analyzed the impacts that will likely result from implementation of the project. The Environmental Assessment (EA) evaluated two alternatives for addressing the purpose and need for action (Alternatives B and C). The EA also evaluated taking no action (Alternative A, No Action) to provide a baseline for comparing impacts of the action alternatives. Alternative B is the preferred alternative.

PREFERRED ALTERNATIVE

Phase 1

The parking area will be graded but the surface will remain rock and packed dirt. The outer boundaries of the parking area will be delineated using boulders or native stone. A drop-off (loading/unloading) area will be created at the northern end near the Rim Trail, so that smaller tour vans and personal vehicles can drop off and pick up passengers in the area. The extent of the parking area will be reduced from the existing configuration by approximately 25%. Cars will no longer be able to park so close to the rim edge allowing this area to be reclaimed for use as pedestrian zones. No individual parking spaces will be delineated; the resulting parking area capacity will be approximately 70-90 vehicles. This reduction over existing capacity will be due to removal of parking from the rim edge and some small reductions in parking adjacent to cabins from creation of vegetation islands and protecting existing vegetation.

Plaza Area and Restroom

The Bright Angel Trailhead Area will be redesigned so as to create a plaza (named Bright Angel Trailhead Plaza, or something similar) near the primary trailhead entrance, just east of the existing mule corral. A new restroom and shade structure will be constructed directly behind the plaza. The plaza's surface will be concrete or of a similar hardened surface and will provide for hiker staging, mule rider orientation, and a visitor meeting and resting area, in view of the Bright Angel Trailhead nearest the mule corral. The plaza area will connect the mule corral area with the parking area, Rim Trail and the trailhead itself and will be informal and rustic in character but designed for high levels of visitor use.

The restroom will consist of two separate buildings with a total of ten single-use toilet rooms (Figure 6). No lavatories will be provided in the individual toilet rooms; they will be provided with waterless hand sanitizer dispensers. Drinking water will be provided at an outside water station as well as a hand-washing sink, as described below under Site Amenities. Both buildings combined will be approximately 600 square feet. An extended covered-roof area for shade may be included as part of the restroom buildings, or a separate shade structure constructed between the restroom and the plaza. The specific design and selection of exterior finishes for the building shade structure and plaza will be determined during later design phases for the project and in consultation with the SHPO to ensure its compatibility with the surrounding National Historic Landmark District. The restrooms will employ energy-efficient building design principles as much as possible, which may include solar power for heating and lighting, skylights, low-flow flush toilets and careful selection of building materials.

Trails and Walkways

The Rim Trail will provide connections between the shuttle bus stops on the west end of the project area and Bright Angel Lodge and Lookout Studio on the east end. A new accessible paved trail will be constructed on the west end (the existing historic Rim Trail in this area will remain) and will connect with the Rim Trail near the corral. All historic segments of the Rim Trail in the project area will be resurfaced in kind and will remain at their current width (approximately five feet). Any new trail sections necessary to complete the Rim Trail in the project area will generally be eight-feet wide, including the alignment along the former Kolb Garage access road (an area now closed due to retaining wall collapse) and will be accessible down to Kolb Garage and Kolb Studio, near the original (secondary) Bright Angel Trailhead. This will require reconstruction of the failed wall above the Bright Angel Trail. Due to the

topography and grades, the Rim Trail from Kolb Studio to Lookout Studio will not meet the necessary gentle grades for Americans with Disabilities Act (ADA) standards. At the upper end of this reconstructed section near the plaza area, the Rim Trail will connect with the existing Rim Trail and will provide access to Bright Angel Lodge and viewpoints and seating opportunities as pedestrians travel east.

Secondary trails will generally be no wider than five-feet wide (but meeting the minimum width requirements to achieve accessibility) and will be differentiated from the paved Rim Trail. The existing historic flagstone trail section near the rim cabins will be repaired but will remain in its current width and configuration. The concrete stairway leading from the Rim Trail in this area down to Kolb Studio will remain. A non-hardened path will be created around the mule corral to allow visitors without accessibility needs to maneuver behind the corral and make more direct connection to the plaza area, particularly during busy times when congestion occurs at the north end of the corral nearest the trailhead. A new secondary informal path will also be created between the restroom and Village Loop Drive to provide more direct access to the restroom from the road and the shuttle bus stops. The entry point to the primary Bright Angel Trailhead near the mule corral will be emphasized, through design, as the threshold to the backcountry; differentiated in a subtle way from the Village developed area, so as to enforce a safety message about venturing into the backcountry (and how to be sufficiently prepared) and to enhance visitor understanding of the area.

The end result of improvements to trails and walkways in the Bright Angel Trailhead Area will be a fully accessible pedestrian Rim Trail connection from Village Loop Drive and both the Hermit Road and Village Loop shuttle bus transfers to the Bright Angel Trailhead, the plaza area, restrooms, canyon and trail views, the Bright Angel cabin area and Kolb Garage and Kolb Studio. Universally accessible access will not be provided farther east than Kolb Studio due to excessive grades. For pedestrians coming from the Lookout Studio area, the Rim Trail connections will provide improved access to the Kolb Garage area and the historic Bright Angel Trailhead.

Wayfinding Signage and Site Amenities

The original Bright Angel Trailhead near Kolb Studio will remain and will be identified and interpreted as the original trail alignment. NPS will explore the need for changing the signage at the trailhead nearest the corral to better differentiate between the two trailheads. The existing interpretive kiosk located just north of the corral and west of the trailhead will be removed; a new interpretive kiosk will be designed and constructed, and located in a more appropriate location within the Bright Angel Plaza area. As funding allows, a system of wayfinding, regulatory/safety and interpretive information will be presented at logical locations throughout the project area, using kiosks, sign panels and/or wayside displays to clarify, simplify and enhance visitor safety and the quality of visitor experience.

The specific information necessary for any additional signage will be developed as part of a comprehensive area sign plan and will address those factors specifically identified as part of the project objectives. The interpretation of the Native American history of the trailhead area will be considered as part of the plaza area interpretive plan or at the Kolb Garage interpretive node. The quantity, location, and style of any new signs will be carefully evaluated for appropriateness within the cultural landscape and surrounding NHL district.

The first phase of implementation of the preferred alternative will include minimum signage necessary for visitors to find their way through the project area; additional signage above the minimum will be provided in a future phase if additional funds become available, as described below under Phase 2.

In addition to an improved system of signs, other minimal site amenities for the project area will be added. Drinking water will be provided outside the restrooms to include the ability to fill up water bottles, get a drink, or splash off after coming off the trail. The existing emergency phone will be relocated to the plaza area and bike racks and seating, either as informal seat walls, separate benches and/or flat-topped rocks will be added. Opportunities for taking photos will be identified, considering views of the trail and trail identification signs. Lighting needs will be evaluated, with the intent of providing the minimum necessary in appropriate locations with appropriate fixtures, adhering to the park's policy on night-sky protection.

Utilities

Trenching will be necessary for utilities such as sanitary sewer, water, telephone, and electrical lines primarily for the new restroom. Any new utility lines will be underground and any existing overhead lines will be buried wherever possible. As appropriate, these trenches, or other trenches if necessary, will be dug to house other utility services necessary for the Bright Angel cabins, such as propane gas lines. When trenches are used for propane gas, they will be vented and sleeved. Vents will be located within vegetated islands as much as is possible to keep them from view. A new gas log insert for the Red Horse Cabin will be fueled by a small, screened tank in the vicinity of this cabin and will require some minor trenching. Due to the existence of bedrock in much of the project area, any trenching will likely be by rock saw.

Phase 2

Phase 1 proposed actions described above are considered the most critical aspects of the design plan that will meet the most pressing needs in the project area and for which NPS currently has funding. Funding, however, is not currently available to implement all necessary actions that will address all project objectives. NPS intends to obtain additional funding over time to implement other important project components; these additional actions are described below. These actions are considered part of the preferred alternative.

Landscaping and Revegetation Additional landscaping and revegetation will occur throughout the project area where needed to restore denuded areas and provide vegetated islands. Tree roots will be covered with soil and protected. Native species will be used and all efforts will be guided by the project's landscape architect and the park Vegetation Program Manager.

Additional Site Amenities Minimal signage and site furnishings will be provided during the first phase. As additional funds become available, additional small-scale features will be added as needed, to include such things as flat-topped rocks for picnicking, benches, additional trash and recycling receptacles, bike racks, and additional wayfinding and/or interpretive signage. Any additional small-scale features will be carefully considered and sensitively designed to be appropriate for their location within a National Historic Landmark District.

Accessible Access into Kolb Studio The entrance to Kolb Studio is not universally accessible. To make it so, modifications to the existing walkway in front of the building (eliminating access barriers like steps) will occur under a future phase.

79-Stall Parking Area with Hardened Surface The packed dirt parking area with the outer boundaries delineated under Phase 1 will be replaced with an all-weather, hardened surface similar to a chip-seal; the parking area will not be standard asphalt and will be of a color and surface consistent with the surrounding National Historic Landmark District. Individual parking spaces will be delineated to provide an estimated total capacity of approximately 70-80 cars. The outer boundaries will remain the same as those identified in the first phase of implementation. The parking area will be redesigned as a one-way loop around the cabins. The layout will eliminate the east/west drive that currently exists through the center of the cabins to provide a pedestrian walkway for people wanting more direct access to the cabins and the lodge without having to use the rim trail. This walkway will also double as a service access road to the cabins. The design will create a vegetated island inside the parking loop in proximity to the cabins and will provide enhanced protection of vegetation, more separation of pedestrians and vehicles and more privacy for cabin guests. A drainage feature will likely be necessary with this hardened surface and will be developed in the vegetated area near the restroom, for the purpose of retaining any additional runoff from the hardened surface parking area.

Interpretive Node at the Kolb Garage In the area of Kolb Garage, near the original Bright Angel Trailhead, a small interpretive node, or gathering area, will be created to enhance the use of this location for ongoing interpretive programs, where spectacular canyon views are offered. To achieve this goal, the historic Garage will be rehabilitated and reused for interpretive functions. Potential uses include interpretation of the history of the Bright Angel Trail, the Kolb brothers, and Native American traditional use of the trail and surrounding areas. The building will also retain some of its existing use as needed storage for Kolb Studio and NPS needs. Some additional seating, via flat-topped rocks or something similar, will also be considered in the open area near Kolb Garage to enhance its use for interpretive talks. How the historic Kolb Garage is rehabilitated and reused will be carefully evaluated by cultural resources staff and the SHPO, as part of the larger consultation effort for this project.

MITIGATION MEASURES

To minimize resource impacts, the integral design features (i.e., mitigation measures) below will be followed during project implementation and were analyzed as part of the preferred alternative. These design features were developed to lessen the project's adverse effects, in combination with foreseeable future actions, and have proven very effective in reducing environmental impacts on previous projects.

Contractor Orientation Contractors working in the park are given proper conduct orientation both in writing and verbally at a preconstruction meeting. Orientation will include, but not be limited to

- Wildlife should not be approached or fed
- Collecting any park resources, including plants, animals, and historic or prehistoric materials is prohibited
- Contractor must have a safety plan and a vehicle fuel spill and leakage plan
- Other environmental concerns and requirements discussed elsewhere in this EA will be addressed, including relevant mitigation measures listed below

Limitation of Area Affected The following mitigation measures will be implemented to minimize the area affected by construction activities

- Staging areas for construction office (a trailer), construction equipment, and material storage will either be located in previously disturbed areas within the project site or in other disturbed areas that best meet project needs and minimize new ground disturbance. All staging areas will be returned to pre-construction conditions or better once construction is complete. Standards for this, and methods for determining when standards are met, will be developed in consultation with the park's Vegetation Program Manager
- Construction zones will be fenced with construction tape, snow fencing, or similar material before construction activity. Green or brown-colored fencing will define the construction zone and confine activity to the minimum construction area required. All protection measures will be clearly stated in construction specifications, and workers will be instructed to avoid conducting activities beyond the construction zone defined by fencing

Soil Erosion To minimize soil erosion, the following mitigation measures will be incorporated into the action alternatives

- Standard erosion control measures such as silt fences, sand bags, or equivalent control methods will be used to minimize any potential soil erosion
- Trenching operations will be by rock saw, backhoe, track hoe, Pionjar, ditch digger and/or trencher, with excavated material side-cast for storage. After trenching is complete, bedding material will be placed and compacted in the trench bottom. Backfilling and compaction will begin immediately after trenching, and the trench surface will be returned to pre-construction contours. All trenching restoration operations will follow guidelines approved by park staff. Compacted soils will be scarified, and original contours reestablished
- A landscaping plan will be developed by the project Landscape Architect in consultation with the Vegetation Program Manager and will be used as part of implementation of future phases of the action alternatives, as funds allow. Any revegetation efforts will use site-adapted native species and/or site-adapted native seed, and park policies regarding revegetation and site restoration will be incorporated. The plan will consider, among other things, use of native species, plant salvage potential, exotic vegetation, and pedestrian barriers. Policy related to revegetation will be referenced from NPS Management Policies (NPS 2006; Chapter 9)

Vegetation To minimize vegetation impacts, prevent exotic vegetation introduction, and minimize spread of noxious weeds, the following mitigation measures will be incorporated into the action alternatives

- Inventories for existing populations of exotic vegetation at construction sites have already occurred in the primary proposed disturbance areas. As design plans develop, these will be cross-referenced with existing vegetation survey information to insure that no new survey is necessary prior to start of work
- All construction equipment that will leave the road (e.g., bulldozers and backhoes) will be pressure-washed prior to entering the park. The location selected for vehicle washing, in addition to that selected for the batch plant, will be approved by a supervisory biologist

- Staging area location for construction equipment will be park-approved, and need for treatment of exotic vegetation will be considered
- Vehicle parking will be limited to existing roads or the staging area
- Pruning necessary for this project and for any future periodic maintenance adjacent to overlooks and trails will adhere to the park's tree pruning guidelines with the goal of retaining health and integrity of trees and shrubs treated. Damage to trees or roots in or adjacent to project areas during construction will be avoided as much as possible
- Any fill, rock, or additional topsoil needed will be obtained from a park-approved source. Topsoil from the project area will be retained whenever feasible

Water Quality and Floodplains To minimize potential water quality impacts, the following mitigation measures will be incorporated into the action alternatives

- Standard erosion control measures such as silt fences, sand bags, or equivalent control methods will be used to minimize any potential sediment delivery to streams
- The park Hydrologist will be consulted on the specific size, location, and layout of any new culverts or any water retention areas to ensure impacts are minimized

Special Status Species To protect any unknown or undiscovered threatened, endangered, or special status species, the construction contract will include provisions for discovery of such. These provisions will require cessation of construction activities until park staff evaluated the impact, and will allow contract modification for any measures determined necessary to protect the discovery. Mitigation measures for known special status species are

California Condor

- Prior to a construction project's start, the park will contact personnel monitoring California condor locations and movement to determine condor status in or near the project. *No previously-used condor nests (pre-2007 breeding season) are within 0.5 miles of the project area, but efforts will be needed to verify any new condor nesting locations prior to the start of construction*
- If a condor occurs at the construction site, construction will cease until it leaves on its own or until permitted personnel employ techniques resulting in the condor leaving. *The need for hazing may be more intensive for this project than others due to its proximity to Kolb Studio and frequently-used condor roosting sites*
- Construction workers and supervisors will be instructed to avoid interaction with condors and to contact the appropriate park or Peregrine Fund personnel immediately if and when condor(s) occur at a construction site
- The construction site will be cleaned up at the end of each work day (i.e., trash disposed, scrap materials picked up) to minimize the likelihood of condors visiting the site. Park condor staff will complete a site visit to ensure adequate clean-up measures
- To prevent water contamination and potential condor poisoning, the park-approved vehicle fluid-leakage and spill plan will be adhered to. This plan will be reviewed by the park Biologist for adequacy in addressing condors
- If non-nesting condors occur within one mile of the project area, blasting will be postponed until condors leave or are hazed by permitted personnel

Mexican Spotted Owl (MSO)

- A Protected Activity Center (PAC) has been delineated below the rim near the project area. Some portions of the project area are greater than 0.25 miles but less than 0.50 mile of the core area boundary. Therefore, heavy construction (as defined in the NPS 2002 Batch Consultation with the Fish and Wildlife Service) will be restricted to the non-breeding season (September 1 through February 28) in these areas. This includes rock excavation including trenching, when these activities require use of hoe-rams, rock saws, hammer hoes, rippers on bulldozers, or track hoes with hydraulic hammers. Light construction activity (as defined in the Batch Consultation [NPS 2002a] and including essentially all other types of typical construction actions) can proceed with no breeding-season restrictions because the project area is greater than 0.25 miles from the core area boundary
- If blasting is necessary for this project, it will be restricted to the non-breeding season (September 1 through February 28)
- Prior to the project's start, the park Wildlife Program Manager will be contacted for any new information related to MSO or their status near the project area

Deer Golden Bush

- Deer golden bush is known to occur adjacent to the project area, based on a cursory walk-through in September 2007. A thorough survey of the project area for this species will be conducted prior to implementation. Any individual specimens located will be protected from construction impacts, in consultation with the park's Vegetation Program Manager

Soundscapes and Wilderness To minimize construction impacts on soundscapes and wilderness, the following mitigation measures will be incorporated into the action alternatives

- While construction activities are not likely to directly impact wilderness values, potential indirect effects to visitors accessing backcountry wilderness from the Bright Angel Trail will be mitigated through information contained in the Backcountry Permit package regarding construction activities. The park will explore this option and implement it, as feasible, to inform backcountry permit holders of construction activities at the Trailhead. Refer to the visitor experience section of these mitigation measures for more information related to wilderness and backcountry visitors
- As time and funding allow, information regarding project implementation and other foreseeable future projects will be shared with the public through park publications and other means (*this measure is also repeated under Visitor Experience*)
- To reduce noise, construction equipment will not be left idling any longer than is necessary for safety and mechanical reasons, and no construction will occur at night

Cultural Resources To minimize construction impacts on cultural resources, the following mitigation measures will be followed

- If previously unknown archeological resources are discovered during the project, a park cultural resource specialist will be contacted immediately. All work in the immediate vicinity of the discovery will halt until the resources could be identified and documented, and an appropriate mitigation strategy developed, if necessary, in accordance with the stipulations of the 1995 Programmatic Agreement among the

National Park Service, the Arizona SHPO and the Advisory Council on Historic Preservation regarding the GMP EIS, Grand Canyon National Park, Arizona

- All workers will be informed of the penalties of illegally collecting artifacts or intentionally damaging any archeological or historic property. Workers will also be informed of correct procedures if previously unknown resources were uncovered during construction activities
- Areas selected for equipment and materials staging are expected to be in existing disturbed areas where there is no potential for archeological resource disturbance. If the sites selected for these activities change during later design phases for implementation of any of the alternatives, the park archeologist will be notified to ensure no new archeological surveys will be necessary
- All work proposed for historic stone walls is intended to protect and restore structural integrity. Resetting and repointing will be done with the mortar mix and technique that closely imitates but not exactly duplicates historic materials and techniques. Repointing will be done only where the original mortar is failing, and care will be taken not to chip original stone
- The park Historical Architect, Landscape Architect, and cultural resource specialists will be consulted throughout the design process to ensure that historic structures, visual resources, and cultural landscape issues are considered. Initial design parameters include
 - Using materials that give the suggestion of unpaved paths in some areas and using a variety of materials to retain a less-developed character
 - Minimizing number of signs, trash cans, and other small-scale features to only those deemed essential, to retain a less-developed character
 - Ensuring design of small-scale features (signs, benches, trash cans, etc.) is compatible with the NHL District and cultural landscape, using the Cultural Landscape Report (Milner 2004) for guidance
- Excavations required for project implementation, such as trenching for powerlines or utilities, will be monitored by an archeologist, if trenching will be through soil
- The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (NPS 1996) and Director's Order 28, Cultural Resources Management, will be followed as part of this project
- All mitigation measures developed as part of the Programmatic Agreement with the State Historic Preservation Office to guide project implementation will be followed
- The overall cumulative impact of varied past, present and foreseeable future actions within the Grand Canyon Village National Historic Landmark District has been raised as a concern. While the expected cumulative impact of this project combined with past, present, and future projects is considered moderate and adverse (see Chapter 3) for cultural resources, NPS will continue discussions with the SHPO and others as appropriate (Advisory Council, other NPS regional and Washington office) as new projects are anticipated for the NHL district to ensure that adverse impacts from future projects are minimized and the integrity of the NHL district and cultural landscape maintains its high degree. This stipulation is also a part of the Programmatic Agreement with the SHPO for this project

Visual Resources To minimize visual impacts, mitigation measures will include

- Natural, muted colors that replicate existing location hues will be used to blend any built materials into the landscape. Materials and their colors will be carefully evaluated to ensure they are appropriate and consistent with the cultural landscape
 - Of special note is restroom roof color. Roof color will be carefully evaluated to blend into the surrounding area, particularly as viewed from Hermit Road vantage points
- Design plans will be reviewed by the park's Landscape Architect as they are prepared
- The project Landscape Architect will coordinate with the Vegetation Program Manager on development of an area landscaping plan as an integral part of the overall design plan for this project. This will be initiated prior to the first phase of implementation in order to support necessary actions in the second phase, such as critical exotic species control and some plant salvage

Night Sky The following mitigation measures will be incorporated into the action alternatives to minimize impacts on the night sky resource

- All existing lighting in the project area will be evaluated to determine if it is necessary and meets the park's policy on lighting to protect night sky (NPS 2004). Any new lighting deemed necessary (at the restroom and plaza location, for instance) will be the minimum necessary and selected fixtures will meet criteria identified in the park's lighting policy, and will be compatible with the surrounding NHL district

Visitor Experience The following mitigation measures will be incorporated into the action alternatives to minimize construction impacts on visitor experience

- Backcountry visitors with permits that include access to or egress from the Bright Angel Trailhead will be notified of project implementation through the Backcountry Permits Office. Close coordination will occur with the office to reduce impacts to hikers during project implementation
- Unless otherwise approved by the park, operation of heavy construction equipment will be restricted to 8 a.m. to 6 p.m. year-round to reduce impacts to visitors, including lodge guests, in the evening
- Bright Angel cabin guests will be notified of project implementation through the Xanterra Hotel Reservations Office. Close coordination will occur with Xanterra to reduce impacts to hotel and cabin guests during project implementation
- As time and funds allow, information regarding project implementation and other foreseeable future projects will be shared with the public through park publications (such as *The Guide*) and other appropriate means during construction periods. This may take the form of an informational brochure or flyer distributed at the gate and sent to those with reservations at park facilities, postings on the park's website, press releases, and/or other methods. The purpose will be to minimize potential for negative impacts to visitor experience during project implementation and other planned projects during the same construction season

Park Operations and Safety The following mitigation measures will be incorporated into action alternatives to minimize construction impacts on park operations and safety risks to employees and visitors

- NPS, concessionaires, and other park employees and residents will receive public notification on project implementation and road delays or road closures, as appropriate
- The public will be notified through park publications and other appropriate means during construction periods to minimize potential for negative impacts to visitor safety during project implementation
- While some closures of portions of the project may be periodically necessary during construction, Preventative Search and Rescue access will be available at all times and Bright Angel Trail access will be available at all times

Air Quality Air quality impacts of action alternatives are expected to be temporary and localized. To minimize these impacts, the following actions will be taken

- To reduce entrainment of fine particles from hauling material, sufficient freeboard will be maintained, and loose material loads (aggregate, soils, etc.) will be tarped
- To reduce tailpipe emissions, construction equipment will not be left idling any longer than necessary for safety and mechanical reasons
- To reduce construction dust in the short term, water will be applied to problem areas. Equipment will be limited to the fenced project area to minimize soil disturbance and consequent dust generation
- Landscaping and revegetation will control long-term soil dust production. Mulch and plants will stabilize soil and reduce wind speed/shear against the ground surface

OTHER ALTERNATIVES CONSIDERED

The EA evaluated a no action alternative and two action alternatives for addressing the purpose and need for action. The preferred alternative was identified as Alternative B and is as described previously in this document in detail.

Alternative A – No Action: No improvements would be made to the Bright Angel Trailhead Area under Alternative A. Existing trails, parking areas, and facilities would remain in their current location and configuration. Existing portable chemical toilets would remain onsite and no new restroom facility would be constructed. Existing signing would remain, and no wayfinding improvements would be made. Visitors would continue to have difficulty finding their way through the area and finding adequate amenities such as seating, shade, drinking water, and restrooms. Much of the area would continue to lack universal accessibility and a sense of place.

The parking area would remain undefined with an approximate capacity of 100-120 vehicles. Parking would continue in the area bounded by the Rim Trail, Bright Angel Cabins, and a drainage swale on the mule corral's east side.

This alternative does not meet the action's purpose and need. The No Action Alternative provides a basis for comparing the action alternatives' management direction and environmental consequences. If the No Action Alternative was selected, NPS would respond to

future Bright Angel Trailhead Area needs without major action or course changes. This alternative was not the selected alternative for this project.

Alternative C - Maximized, Hardened Surface Parking: Alternative C includes all aspects of the preferred alternative except it includes, as a future phase, a larger-capacity parking area, with an all-weather, hardened surface. Descriptions of the plaza area and restroom, trails and walkways, wayfinding, and site amenities are the same as those described for the preferred alternative, including project implementation in phases. Under Alternative C, Phase 2 the parking area would have a capacity of approximately 104 cars. The parking area would have a one-way loop around the outer perimeter of the Bright Angel Cabins and would create both single-loaded and double-loaded bays to achieve the highest number of parking spaces. A double-loaded bay is one in which parking spaces are accommodated between two drive lanes and on either side of a drive lane. The existing drive, and parking between cabins, would be converted to a pedestrian path with service-vehicle access.

To accommodate the larger parking area, pedestrian zones and native landscaping areas would be somewhat reduced on the western end nearest the plaza area. There would be no landscaped buffer zone between the parking area and the Rim Trail on this western end and smaller landscaped zones around the Bright Angel cabins. All other aspects of Alternative C are the same as described for the preferred alternative. This alternative was not the selected alternative for this project. While it would provide a higher capacity parking area, it would not achieve the best balance between resource protection and visitor use.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 which guides the Council on Environmental Quality (CEQ). The CEQ provides direction that “[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA Section 101”:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Through the internal and public scoping process, the environmentally preferred alternative selected is Alternative B. Alternative B best meets the action's purpose and need and best addresses overall park service objectives and evaluation factors. Alternative B would result in changes to the cultural landscape, but these would be minimized through careful design and

selection of appropriate surfaces, finishes, and site amenities. Due to the area's highly disturbed nature, impacts to natural resources would be relatively minimal but would require implementation of some mitigation measures to ensure impacts are reduced. Visitors would benefit from improved facilities and a more appropriate area design that minimizes the parking area footprint while enhancing gathering areas, canyon-viewing opportunities, and pedestrian use. Alternative C shares many aspects of Alternative B and therefore is similar in result, but the larger parking area would result in more impact to the cultural landscape and historic structures, and does not then meet objectives 1 and 4 as well as Alternative B. Alternative B achieves the best balance between resource protection and visitor enjoyment.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

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

Impacts that may be both beneficial and adverse. As fully discussed in the EA, the preferred alternative will not measurably affect archeological or ethnographic resources, watershed resources (soils and water), floodplains or wetlands, general wildlife populations, natural soundscape, air quality, minority or low-income populations, prime and unique farmland, socioeconomic values, or recommended wilderness.

Implementation of the preferred alternative will result in minor to moderate adverse impacts to vegetation due to a loss of mature pinyon and juniper trees in the Bright Angel Trailhead cabin area.

Implementation of the preferred alternative will result in negligible to minor adverse impacts to special status species (Mexican spotted owl, California condor, Deer goldenbush) due to increased noise and activity in the area during construction and the potential for disturbance to individual deer goldenbush plants during construction.

Implementation of the preferred alternative will result in minor to moderate adverse impacts to visual and scenic quality due to new facilities in a relatively undeveloped area.

Implementation of the preferred alternative will result in moderate beneficial impacts to visitor experience due to improvements in visitor facilities and wayfinding. Short-term minor adverse impacts are expected during the construction period.

Implementation of the preferred alternative will result in minor beneficial impacts to park operations through increased operational efficiency.

Implementation of the preferred alternative will result in minor to moderate adverse impacts to historic structures and districts due to new construction near historic structures and within the Grand Canyon Village National Historic Landmark District. Benefits would also be realized in rehabilitation and repair of historic structures as part of this project.

Implementation of the preferred alternative will result in minor to moderate adverse impacts to cultural landscapes due to alternation of contributing landscape features and the addition of modern, non-contributing features.

Degree of effect on public health or safety. Adherence to mitigation measures designed to minimize safety risks and adverse impacts to visitors during the construction period will address

these limited risks to public safety. Moderate, beneficial, long-term impacts to visitors are expected due to improvements in visitor facilities (such as restrooms, trail improvements, wayfinding signage and improved interpretive signage and facilities) and improved separation of parking areas from pedestrian zones. These improvements are expected to decrease the safety risks associated with vehicle and pedestrian conflicts and enhance the movement of visitors through the area without conflicting with vehicles in the parking area.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The preferred alternative will not measurably affect archeological or ethnographic resources, watershed resources (soils and water), floodplains or wetlands, general wildlife populations, natural soundscape, air quality, minority or low-income populations, prime and unique farmland, socioeconomic values, or recommended wilderness. No wild and scenic rivers are designated near the project area and none will be affected by implementation of the preferred alternative. No ecologically critical areas occur within the project area and disturbance is primarily limited to existing disturbed areas within a highly-used visitor area within Grand Canyon Village. The project area occurs within the Grand Canyon Village National Historic Landmark District and is adjacent to historic structures. The preliminary design plan for the area was developed with its location with the historic district and its adjacency to historic structures in mind so that adverse impacts are minimized. Future detailed design plans for the area, as they mature, will continue to incorporate mitigation measures to minimize potential for adverse impacts, would be prepared in consultation with the State Historic Preservation Officer, and would ensure that the design is in keeping with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

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

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

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The preferred alternative neither establishes a precedent for future actions with significant effect nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Implementation of the preferred alternative will not result in any significant cumulative impacts.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. The project area occurs within the Grand Canyon Village National Historic Landmark District; historic structures also occur within the project area. All components of the preferred alternative take into consideration the potential for impacts sensitive cultural resources and project proposals have been designed with protection of these resources in mind, so that adverse effects do not occur. A programmatic

agreement with the State Historic Preservation Officer was finalized on September 30, 2008 which streamlines the Section 106 process for individual components of the design plan as they are implemented over time so as to ensure that our responsibilities under Section 106 are met. All stipulations identified in the programmatic agreement have been incorporated into the project and are referenced in the mitigation measures section of this document.

Tribal review of the EA is complete.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat. For purposes of Section 7 consultation under the Endangered Species Act, implementation of the preferred alternative may affect, but is not likely to adversely affect, the Mexican spotted owl and California condor. Concurrence on these determinations was received from the U.S. Fish and Wildlife Service on 6 December 2007. Mitigation measures have been developed to minimize the potential for adverse impacts during project implementation and are considered part of the proposed action for this project.

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

APPROPRIATE USE, UNACCEPTABLE IMPACTS, AND IMPAIRMENT

Sections 1.5 and 8.12 of NPS *Management Policies* emphasize the fact that not all uses are allowable or appropriate in units of the National Park System. The proposed use was screened to determine consistency with applicable laws, executive orders, regulations, and policies; consistency with existing plans for public use and resource management; actual and potential effects to park resources; and whether the public interest would be served. Implementation of the design plan for the Bright Angel Trailhead Area as a whole is not inconsistent with any laws, executive order, regulations, policies, or plans, in fact the park's 1995 General Management Plan specifically envisioned improved visitor facilities in the trailhead area. This project will have some impact to park resources; these actual and potential impacts are described in the EA. The actions proposed under the design plan for the Bright Angel trailhead area are being implemented to provide for enhanced visitor experience, improved visitor safety and increased recreational opportunities. Therefore, the Park Service finds that the preferred alternative is an appropriate use. Because the analysis determined that no major adverse impacts would occur and that mitigation measures would further lessen the impacts, implementation of the preferred alternative would not result in any unacceptable impacts.

In analyzing impairments in the NEPA analysis for this project the NPS takes into account the fact that if an impairment were likely to occur, such impacts would be considered to be major or significant under CEQ regulations. This is because the context and intensity of the impact would be sufficient to render what would normally be a minor or moderate impact to be major or significant. Taking this into consideration, NPS guidance documents note that "Not all major or significant impacts under NEPA analysis are impairments. However, all impairments to NPS resources and values would constitute a major or significant impact under NEPA. If an impact results in impairment, the action should be modified to lessen the impact level. If the impairment cannot be avoided by modifying the proposed action, that action cannot be selected for implementation (*Interim Technical Guidance on Assessing Impacts and Impairment to Natural Resources*, National Park Service, Natural Resource Program Center, July 2003).

In addition to reviewing the definition of "significantly" under the NEPA regulations, the NPS has determined that implementation of the preferred alternative would not constitute an impairment to the integrity of Grand Canyon National Park's resources or values as described by NPS Management Policies (NPS 2006 § 1.4). This conclusion is based on the NPS's analysis of the environmental impacts of the proposed action as described in the EA. The EA identified less than major adverse impacts on historic structures and cultural landscapes, vegetation, general wildlife, special status species, visual and scenic quality, visitor experience, park operations, and public health and safety. This conclusion is further based on the Superintendent's professional judgment, as guided and informed by the park's General Management Plan. Although the project has some negative impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore other park resources and values. Overall, the project results in benefits to park resources and values, opportunities for their enjoyment, and it does not result in their impairment.

PUBLIC INVOLVEMENT

The EA was made available for public review and comment during a 30-day period ending 21 December 2007, through a combination of direct mailing, issuance of a press release and posting on the Planning, Environment and Public Comment website (<http://parkplanning.nps.gov/grca>). All those that previously provided comments during the public scoping period received either a printed copy or an email notification that the EA was available for public review.

Six responses were received and are summarized as follows: 1) University of Illinois Park Planning and Policy Laboratory requested more separation of pedestrians from vehicles to enhance visitor experience and to reduce the size of the parking area to 40 spaces or less; 2) The Grand Canyon Chapter of the Sierra Club requested elimination of the parking area entirely and restoration of the area, or at least creating a broader buffer around the pedestrian walkway between the cabins, and a narrower trail width for new trail segments; 3) The Hopi Tribe asked that we continue to consider interpretation of prehistoric Hopi use of the Bright Angel trail and identifying plants with traditional Hopi names; 4) The Navajo Nation expressed support for the preferred alternative; 5) a private individual suggested that we safely remove the historic boat that is stored in Kolb garage before any rehabilitation efforts are undertaken; and 6) a private individual suggested that visitor experiences would be better enhanced by not making access and signage so easy.

Consultation between the NPS and the State Historic Preservation Officer on the way in which the park will meet its Section 106 responsibilities for protection of cultural resources during site-specific phased project implementation was completed with the finalization of a programmatic agreement on September 30, 2008. Consultation between the NPS and tribal groups occurred as part of public scoping and as part of review of the EA. Responses at various times in the process were received from Navajo Nation members, the Hualapai Historic Preservation Office, Navajo Historic Preservation Office, Hopi Preservation Office and the Havasupai Tribe.

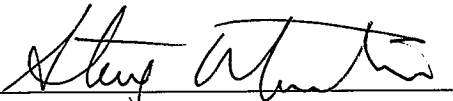
Consultation between the NPS and the United States Fish and Wildlife Service on this project is complete. USFWS provided concurrence on the determination of effects for the Mexican spotted owl and the California condor on 6 December 2007.

CONCLUSION

The preferred alternative does not constitute an action that normally requires preparation of an environmental impact statement (EIS). Negative environmental impacts that could occur are negligible to moderate in effect. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, known ethnographic resources, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

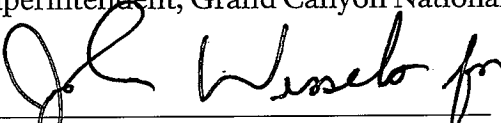
Based on the foregoing, it has been determined that the project does not constitute a major federal action significantly affecting the quality of the human environment and an EIS will not be required for this project and thus will not be prepared.

Recommended:


Steve Martin
Superintendent, Grand Canyon National Park

10-30-08
Date

Approved:


Michael D. Snyder
Director, Intermountain Region

11/24/08
Date

ERRATA SHEET

Response to Comments

Bright Angel Trailhead Area Design Plan Grand Canyon National Park

The NPS received six responses to a request for comments on the EA for the Bright Angel Trailhead Area Design Plan (November 2007). The public comment period ended 21 December 2007. An interdisciplinary team reviewed these responses to identify any substantive comments. Substantive comments were considered to be comments which:

- question, with reasonable basis, the accuracy of information in the EA.
- question, with reasonable basis, the adequacy of environmental analysis.
- present reasonable alternatives other than those presented in the EA.
- cause changes or revisions in the proposal.

Some comments were received that were considered substantive. These comments were reviewed in detail by the project interdisciplinary team. Substantive comments received are summarized below with the NPS response.

Comment: Continue to consider, as part of the design plan, the interpretation of prehistoric Hopi use of the Bright Angel trail and identifying plants with traditional Hopi names.

Response: NPS agrees with this suggestion and we intend to include Native American history and use of the area as one interpretive theme, as described in the EA on Page 21, paragraph 3. As also described on this page, the first phase of implementation will include the minimum signage necessary for visitors to find their way through the area. Future phases of implementation, as funds become available, will include more detailed interpretive signage and information. We anticipate working with all affiliated tribal groups as interpretive plans are developed for the area over the next few years to best incorporate Native American themes, including prehistoric use of the trail and where identification of plants may be the most appropriate.

Comment: It would be preferable to eliminate the parking lot entirely and only allow vehicles for hiker drop-off, cabin stays and commercial deliveries. Rather than investing money into a hardened parking lot near the rim under Phase 2, the entire parking area should be revegetated and include amenities such as trails and additional picnic tables.

Response: NPS acknowledges that the Bright Angel Trailhead area is a prime destination for many visitors to the South Rim and serves a variety of user groups, including visitors walking through the area and enjoying canyon views, backcountry hikers, day hikers, mule riders, visitors getting on and off shuttle buses, cabin guests, and others who choose to park in the parking lot. It is a challenge to determine the most appropriate way to accommodate these user groups in this relatively small space near the trailhead and the canyon rim. However, NPS does not agree that the parking area needs to be eliminated to best serve visitors. Retention of parking in this area was identified as an objective for this project (EA, Page 5). The preliminary design for the area, as described in the EA (preferred alternative, pages 16-24 of the EA), provides adequate space to retain a smaller parking area (an approximate 25% reduction in size of the

current lot), create a gathering area/plaza near the trailhead with a new restroom and provide adequate trail connections.

As described in the EA on page 28, NPS did initially consider the removal of all day-use parking from this area, per the direction in the 1995 General Management Plan, and this project's relationship to the in-progress South Rim Visitor Transportation Plan Environmental Assessment. At present, retention of day-use and overnight parking in the Bright Angel Trailhead area is consistent with all alternatives being evaluated in the Visitor Transportation Plan EA (public comment period ends on March 19, 2008). However, how well each alternative can accommodate future changes in parking area use is evaluated under Park Operations for each alternative (EA Page 95, 96, 97, 98) and acknowledges that expenditure of funds on hardening the parking area surface would provide somewhat less flexibility if changes are later proposed in parking area use.

Comment: If the parking area cannot be eliminated entirely, we request that the east/west drive between the cabins be eliminated and the area around the cabins be revegetated to create a safe pedestrian walkway.

Response: NPS agrees. The elimination of the east/west drive between the cabins is a component of Phase 2 of the project (EA, Page 22). Elimination of this drive will provide space for a pedestrian walkway for people wanting more direct access to the cabins and the lodge without having to use the rim trail, as described in the EA. This will create a vegetated island inside the parking loop and more separation of pedestrians and vehicles and more privacy for cabin guests.

Comment: An eight foot-wide trail in areas of new trail sections is excessive and unnecessary. We recommend that areas of new trail sections be no more than six feet wide.

Response: As stated in the EA on pages 19-20, all new secondary trails would generally be no wider than five-feet-wide and all historic trail segments in the area (such as historic rim trail sections and flagstone paths) would be rehabilitated but remain at their current width of approximately five feet. Five feet in width does meet minimum accessibility standards. However, where new Rim Trail sections are necessary (primarily the construction of the new accessible paved trail along the former Kolb garage access road and the construction of the new accessible paved trail from the shuttle bus stop to the mule corral) would be eight-feet-wide and paved. This width is consistent with current trail standards in the park for high-use Rim Trails. This width allows for users to pass, moving in both directions, and accommodates other considerations such as strollers and wheelchairs.

Comment: Much like the redevelopment at Desert View, the Bright Angel Trailhead redevelopment should separate pedestrians from their vehicles to enhance the visitor experience and protect park resources. The current plan allows for more than 70 vehicles and, in doing so, privileges a significant portion of the area as a parking lot. This does not allow enough spatial separation between parked cars and visitors who are traveling on foot.

Response: As stated in the second response above, NPS acknowledges the challenge this area poses in determining the most appropriate way to accommodate all user groups in this relatively small space near the trailhead and the canyon rim. However, NPS does not agree that the

parking area needs to be eliminated to best serve visitors. Retention of parking in this area was identified as an objective for this project (EA, Page 5). NPS agrees that the current parking arrangement where vehicles can park very close to the Rim Trail and near the canyon rim is not appropriate. The preferred alternative eliminates this parking and in doing so, provides more space for pedestrian zones and vegetation zones in this area. The preliminary design for the area, as described in the EA (preferred alternative, pages 16-24 of the EA), provides adequate space to retain a smaller parking area (an approximate 25% reduction in size of the current lot), create a gathering area/plaza near the trailhead with a new restroom and provide adequate trail connections. In contrast to Desert View, the Bright Angel Trailhead area is in the heart of Grand Canyon Village where demand for parking exceeds supply and where a variety of user groups (include Bright Angel Lodge and Cabin guests) require a place to park their car.

However, NPS acknowledges that more detailed design is necessary for the area to ensure that other crucial needs of the plan are met (such as adequate trail connections, canyon viewing opportunities, and separation of pedestrians and vehicles where possible). The preferred alternative as described in the EA is based on preliminary schematic design. As more detailed design occurs prior to implementation of Phase 2, it is possible that the number of spaces provided and/or the configuration of the parking area could change somewhat in order to better accommodate pedestrian areas or allow for enhanced wayfinding.

Comment: The current plan fails to do justice to the prime real estate value of this area by sanctioning a large portion of it as a parking lot. At best this is incremental planning.

Response: See responses above. NPS believes that it is possible to accommodate all users in this area, including designation of a portion of the area for vehicle parking and that this is consistent with the South Rim Visitor Transportation Plan/Environmental Assessment that evaluates transportation needs through the year 2020. As also stated above, NPS recognizes that changes in visitation or other factors may necessitate a change in the way parking in Grand Canyon Village, including parking in the Bright Angel Trailhead area, is managed in the future. There may be a need to eliminate day-use parking at some point in the future, as acknowledged in the 1995 General Management Plan. The ability of the action alternatives to accommodate future changes in parking area use is described in the EA under Park Operations (EA, pages 95, 96, 97, and 98)

Comment: I request a change from the preferred alternative that specifies 70 or more parking spaces to 40 or less parking spaces.

Response: As stated above, NPS acknowledges that more detailed design is necessary for the area to ensure that crucial needs of the plan are met (such as adequate trail connections, canyon viewing opportunities, and separation of pedestrians and vehicles where possible) while also accommodating parking. The preferred alternative as described in the EA is based on preliminary schematic design. As more detailed design occurs prior to implementation of Phase 2, it is possible that the number of spaces provided and/or the configuration of the parking area could change somewhat in order to better accommodate pedestrian areas or allow for enhanced wayfinding, and may result in fewer parking spaces than that described in the EA. At this stage of planning, however, NPS believes that a parking capacity of 70-80 vehicles is possible, while still meeting these other needs for the area.