FINDING OF NO SIGNIFICANT IMPACT

Replacement of Jim Camp Wash Bridge and Associated Site Improvements

Petrified Forest National Park

At Petrified Forest National Park the National Park Service will replace Jim Camp Wash bridge, widen the highway approach lanes and bridge to reduce accident potential, as well as provide a pedestrian walkway on the replacement bridge to reduce potential vehicle/pedestrian conflicts and safety hazards. In addition, the nearby Long Logs road and parking area will be converted to a pedestrian trail.

Jim Camp Wash bridge is a multi-barreled, concrete, box culvert structure on the main park road, in the southern end of the park. The bridge is at risk of being washed-out due to inadequate freeboard and insufficient capacity for design flow. The bridge's multi-barreled, box construction interrupts stream dynamics by constricting the flow of water, which prevents the efficient transport of a sediment laden flow (mix of sand and water) during a flood event. The flow restriction created by the bridge's box configuration also causes erosive backwater, which threatens stream bank stability. In addition, the bridge's design allows blowing sand to deposit in the structure's barrels, or openings beneath the bridge, as well as cover the structure's roadway and markings.

Both Jim Camp Wash bridge and the highway approach lanes are inadequate in size to accommodate present day vehicles, especially today's larger recreation vehicles and trailers. Clearance between vehicles is a major safety hazard due to insufficient lane width. The approach guardrails and the bridge railings are also unsafe and do not meet American Association of State Highway and Transportation Officials (AASHTO) standards. Additionally, some visitors also access nearby Long Logs by walking across Jim Camp Wash bridge, which has no sidewalks, shoulders, or barriers to separate vehicular and pedestrian traffic and is too narrow (24-feet) to safely accommodate both. Concurrent use of the bridge by vehicles and pedestrians creates a potentially unsafe condition for pedestrians.

A 12-foot wide pedestrian trail will be saw cut from the existing asphalt surface of Long Logs road and parking area, allowing the trail to follow the route of the former roadbed. The 12-foot wide asphalt trail to Long Logs will reduce potential vehicle/pedestrian safety hazards, providing safer access for hikers to Long Logs, and access by the mobility impaired, as well as emergency vehicle access.

Eliminating vehicular access to Long Logs will also decrease the theft of petrified wood from the area. Petrified wood sites that are accessible by vehicle or are in view of a parking area are especially prone to theft. Vehicular access of Long Logs is currently permitted daily during park operating hours. The parking area at Long Logs is adjacent to a high concentration of petrified wood. Controlling access to the site by eliminating Long Logs road will result in a reduction of petrified wood theft.

PREFERRED ALTERNATIVE

Jim Camp Wash bridge will be demolished. A replacement bridge will be erected along the original bridge's historic alignment. The replacement bridge will be a cast-in-place concrete slab span, supported by cylindrical piers. The replacement bridge will be approximately 190-feet long (58 meters) and 38-feet wide (11.76 meters).

The longer, single span bridge will provide a less constricted channel for conveying flood flows, lessening the constriction of flowing water at the bridge and the resultant backwater effects that contribute to the

possibility of overtopping. In addition, the formation of stream bed dunes and accumulation of sand drifts deposited by winds in and around the crossing will be more effectively transported through the natural bottom channel offered by the single span bridge than through the more restrictive box culvert. The cylindrical bridge piers will also provide less drag and more open space for the even dispersal of sediment and accumulated sand in the bridge waterway during flood events.

The replacement bridge will accommodate increased traffic lane width and a pedestrian sidewalk. The cement sidewalk will be constructed on the downstream (south) side of the bridge, and will extend past the end of the bridge to the concession building. The sidewalk will be about 6½-feet wide and fully accessible. The sidewalk will be elevated 6-inches above the bridge and parking area surface, to minimize pedestrian-vehicle conflicts. The sidewalk curb from the west end of the bridge to the concession building will be sandstone, to match the color of the stone in the nearby rock walls. A 45-inch high guardrail constructed of tubular steel will be erected along the outer, or wash, side of the sidewalk, to ensure safer passage for pedestrians on the bridge. The guardrail will be painted a flat brown color, to blend as much as possible into the bridge's visual background.

The replacement bridge will be constructed in two stages. In the first stage the east side of the existing bridge will be demolished and then the east side of the replacement bridge constructed. The west side of the existing bridge will be used for one-way traffic during construction. In the second stage the east side of the newly constructed replacement bridge will be opened to one-way traffic while the west side of the existing bridge is demolished. The west side of the replacement bridge will then be constructed.

A 12-foot wide pedestrian trail will be saw cut from the existing 24-foot wide asphalt surface of Long Logs road, allowing the trail to follow the route of the approximately 2,000-foot long roadbed. The remaining asphalt will be obliterated and removed (about 2,600 sq. yards). The former roadbed prism will be retained and revegetated with native species to restore its natural appearance. The three, 18-inch diameter, corrugated metal culverts along the former road will be left in place, to lessen potential erosion of the former roadbed. The 12-foot wide asphalt trail to Long Logs will permit access by the mobility impaired, as well as continued emergency vehicle access.

The saw cut trail will continue around the circumference of the Long Logs parking loop, adjacent to the interior rock curbing of the parking loop island, which will not be removed. The remaining asphalt surface of the parking loop will be obliterated and removed (about 3,000 sq. yards). Most of the extant concrete sidewalk and curbing at the parking loop, as well as the rock retaining walls, will remain in place between the existing north and south trail entrances. The existing rock mass and vegetation island in the center of the former parking loop will also be retained.

The rock removed from the curbing around the parking island will be used to build two core wing walls at the Long Logs trail head along the main park road. The two wing walls, each about 6-feet long and 3½-feet high, will be constructed adjacent to, but not in contact with, two historic stone posts built by the Civilian Conservation Corps. The two wing walls and a removable bollard set in the center of the former roadway will prevent unauthorized vehicles from accessing the Long Logs trail.

All revegetation will be accomplished using both seed previously collected from the project area and commercial seed that meets strict National Park Service guidelines for importation of seed.

Staging and stockpiling for the project will occur on the parking area in the Rainbow Forest developed area, near the picnic shelters.

ALTERNATIVES CONSIDERED

The environmental assessment/assessment of effect analyzed several alternatives, including the preferred alternative described above and a no-action alternative. Under the No-Action Alternative, Jim Camp Wash

bridge would not be replaced. The highway approach lanes to the Jim Camp Wash bridge would not be widened, and Long Logs road and parking area would not be converted into a trail.

The environmental assessment/assessment of effect also examined several other alternatives during the planning process. Although each of the alternatives differed in approach to Jim Camp Wash bridge, vehicular access to Long Logs would be eliminated in each alternative and visitor access to Long Logs would be accomplished as described in the preferred alternative:

- Rehabilitate Jim Camp Wash bridge. Either construct pedestrian bridge downstream of existing bridge or extend box culverts to allow room for construction of pedestrian bridge adjacent to rehabilitated bridge.
- Replace existing bridge with single span bridge erected along original alignment. Divert traffic flow during construction to temporary, at grade detour constructed in wash upstream of bridge.
- Replace Jim Camp Wash bridge with single span bridge built about 20-yards downstream of existing bridge. Raised sidewalk on replacement bridge would separate pedestrians and vehicles. Existing bridge would remain open during construction and be demolished once new bridge is operational.
- Replace Jim Camp Wash bridge with single span bridge built slightly downstream and offset from existing bridge, with centerline of replacement bridge aligned to centerline of Rainbow Forest parking area. Raised sidewalk on replacement bridge would separate pedestrians and vehicles. Traffic flow during construction would use reduced segment of existing bridge prior to its demolition.
- Replace Jim Camp Wash bridge with at-grade or low water crossing through wash. Passage of vehicles and pedestrians would be limited to dry conditions only. At-grade or low water crossing would be constructed upstream from Jim Camp Wash bridge. Existing bridge would remain open during construction of crossing and be demolished once crossing is operational.

Each of the above alternatives was dismissed from further consideration, because they either unsatisfactorily addressed project objectives and/or resulted in too great of impacts to Petrified Forest National Park's natural and cultural resources.

As more fully described in the environmental assessment/assessment of effect, three additional alternatives were developed and examined during consultations with the Arizona state historic preservation office. Again, in each alternative vehicular access to Long Logs would be eliminated and visitor access to Long Logs would be accomplished as described in the preferred alternative.

- Existing park road south of the Rainbow Forest area would be rerouted to the east, crossing Jim Camp Wash on new bridge built south of existing bridge. Jim Camp Wash bridge would be rehabilitated and vehicles approaching Rainbow Forest area on main park road from either north or south would either continue to proceed along park road or cross Jim Camp Wash bridge to access parking area. The park road would no longer run through the parking area. Pedestrian bridge would either be constructed downstream of rehabilitated Jim Camp Wash bridge or bridge's box culverts would be extended to allow room for the construction of adjacent pedestrian bridge.
- Existing park road through Rainbow Forest area would be rerouted to parallel northwestern edge of Jim Camp Wash, eliminating existing drive-through parking area. Jim Camp Wash bridge would be closed to vehicular traffic and traffic circle (rotary) would be constructed between west end of Jim Camp Wash bridge and existing parking area. Three additional vehicular bridges would be constructed. Two culverts would span unnamed washes - one south of visitor center/museum and concessions area and one to north, and a single span bridge would be built over Jim Camp Wash, north of existing bridge. Vehicles approaching Rainbow Forest area on main park road would use traffic

circle to access parking area or continue along park road. Jim Camp Wash bridge would be rehabilitated. Pedestrians would walk across bridge to access Long Logs via nearby Long Logs road.

- Existing park road through Rainbow Forest area would be partially rerouted to parallel northwestern edge of Jim Camp Wash, also eliminating existing drive-through parking area. Jim Camp Wash bridge would either be rehabilitated or replacement bridge would be constructed along historic alignment of existing bridge. New bridge, probably a box culvert, would be erected south of visitor center/museum and concessions area, to span unnamed wash. Traffic circle would be constructed between west end of Jim Camp Wash bridge and parking area. Vehicles approaching Rainbow Forest area on main park road would use traffic circle to access parking area or continue along the park road. Pedestrian bridge would either be constructed downstream of rehabilitated Jim Camp Wash bridge or bridge's box culverts would be extended to allow room for the construction of a an adjacent pedestrian bridge. Visitors would walk across the pedestrian bridge to access Long Logs via nearby Long Logs road.

The above alternatives were dismissed from further consideration primarily because

1. the rerouted park road would disturb paleontological resources and traverse areas of petrified wood. Both chipped and flaked petrified wood and larger surface and subsurface logs would be impacted. Petrified Forest National Park was created in 1906 to preserve and protect concentrations of petrified wood, and petrified wood is the park's primary, nonrenewable resource. Routing the park road through this area would conflict with the mandate to protect the park's primary resource.
2. constructing the rerouted park road would result in additional construction impacts to park land, ranging from about 0.6 to 1.4 acres depending upon the alternative.
3. the rerouted park road and additional bridges would potentially disturb several known prehistoric archeological sites, most importantly a variety of petrified log chipping stations. The chipping stations are considered by the National Park Service's Western Archeological Conservation Center to be collectively eligible for listing on the National Register of Historic Places as a thematic district, associated with lithic production over time and prehistoric technology.
4. rerouting the main park road and erecting additional bridges would alter the historic circulation patterns, including the entry drive sight line, and spatial organization of the Rainbow Forest Historic Landscape.
5. the turn around movement for buses, large recreational vehicles, and trailers in the Rainbow Forest parking area would be insufficient. Backing of such vehicles would be required in order to turn around and return to the park road. Major modification and/or expansion of the existing parking area would be necessary to provide sufficient radius for turning movements.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by 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's Section 101:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;

- 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;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The preferred alternative (replace Jim Camp Wash Bridge with a bridge erected on the same alignment, and convert Long Logs road and parking area to a pedestrian trail) is the environmentally preferred alternative. After careful review of potential resource and visitor impacts, and developing mitigation for impacts to cultural resources, the preferred alternative best strikes a balance between the necessity of replacing Jim Camp Wash bridge and enhancing visitor safety with the preservation of the park's cultural resources, as well as preservation of the park's primary, nonrenewable resource - petrified wood.

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: No impacts to geological resources; Triassic rock exposures or known fossil deposits; water resources; threatened, endangered, candidate species or species of special concern; prime and unique farmlands; or environmental justice were identified for the preferred alternative. Construction related impacts to soils, air quality, biotic communities, and the park's socioeconomic environment will be adverse, but negligible to minor and short-term.

Construction will have no effect, either direct or indirect, on known archeological resources in the vicinity of the project area. Transforming Long Logs road into a foot trail, however, will reduce the number of visitors going to the Agate House. Incidences of inadvertent disturbance and vandalism will decrease, resulting in a long-term, minor to moderate beneficial impact to the Agate House.

Implementation of the preferred alternative will adversely affect historic properties. The Keeper of the National Register of Historic Places issued a formal determination on April 2, 2001, during the 30-day agency and public comment period for the environmental assessment/assessment, that the Rainbow Forest Historic Landscape is eligible to be listed on the National Register. In the determination of eligibility, Jim Camp Wash bridge and Long Logs road and parking area were identified as contributing elements of the historic landscape. As described in the environmental assessment/assessment of effect, replacing Jim Camp Wash bridge and converting Long Logs road and parking area into a foot trail will adversely affect these contributing elements of the Rainbow Forest Historic Landscape. Implementation of the preferred alternative will result in an overall reduction of integrity in the Rainbow Forest Historic Landscape but not, in the opinion of the park, to the extent that the landscape would no longer be National Register eligible.

Eliminating vehicular access to Long Logs will significantly reduce the theft of petrified wood from the area, resulting in a long-term, moderate beneficial impact to the park's petrified wood.

Construction related impacts to visitor use and experience will be adverse and minor to moderate in intensity but short-term. Replacing Jim Camp Wash bridge and widening the approach lanes will enhance visitor safety, resulting in a long-term, moderate beneficial impact upon visitor use and experience. Closing Long Logs road and constructing a new access trail to the area will result in long-term, minor to moderate adverse impacts to visitors unable or unwilling to walk Long Logs or the Agate House. Other visitors, seeking a longer hike than currently available in the park, may perceive the closure as a long-term, minor to moderate, beneficial impact.

Replacement of Jim Camp Wash bridge will have long-term, minor to moderate beneficial impacts upon park operations. The expenditure of money and time associated with maintenance of the new bridge, as compared to that required currently for Jim Camp Wash bridge, will be reduced from monthly and/or early expenditures to multi-year general maintenance and upkeep and costs associated with removing accumulated sand from the bridge roadbed would be eliminated. In addition, eliminating vehicular access to Long Logs will result in a reduction of wood theft without increasing the park's staffing requirements, resulting in a long-term, minor beneficial impact to park operations.

Degree of effect on public health or safety: While Jim Camp Wash bridge is being replaced, vehicular traffic along the main park road will be temporarily restricted in the vicinity of Rainbow Forest. Traffic will be subjected to alternating, one-way flow at the bridge, and will be regulated by a lighted traffic system. Every effort will be made to maintain the flow of vehicular traffic on the main park road during the construction period. Flaggers may also be used during work hours to control traffic. All efforts will be made to reduce delays and closures as much as possible and to alert park staff as soon as possible if delays longer than normal or closures are expected. Visitors stopping at the park's two visitor orientation areas will be informed of construction activities and associated delays. Equipment will not be stored along the roadway overnight without prior approval of park staff.

Replacing Jim Camp Wash bridge and widening the approach lanes will provide a safer entrance to the Rainbow Forest visitor area. The raised sidewalk separating vehicular and pedestrian traffic on the bridge will also enhance visitor safety, allowing visitors to more safely cross the bridge to access the trail to Long Logs.

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: As described in the environmental assessment/assessment of effect, prime farmlands, wetlands, wild and scenic rivers, and ecologically critical areas will not be affected. There will be no impacts to unique or important geologic features or Triassic rock exposures and known fossil deposits.

Implementation of the preferred alternative will have a long-term, moderate, adverse impact upon the Rainbow Forest Historic Landscape. There will be an overall reduction of integrity in the historic landscape, but not to the extent that the landscape will no longer be eligible to be listed in the National Register of Historic Places.

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 environmental assessment/assessment of effect 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 during either preparation of the environmental assessment/assessment of effect or 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 National Park Service precedent for future actions with significant effects 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: Impacts of the preferred alternative identified in the environmental assessment/assessment of effect were to geology and soils, paleontological resources, air quality, biotic communities, archeological resources and cultural landscapes, visitor use and experience, park operations, and socioeconomic environment. As described in the environmental assessment/assessment of effect, Petrified Forest National Park is currently in the initial stages of revising its1992 *General*

Management Plan/Development Concept Plans/Environmental Impact Statement. Actions associated with implementing the park's previous general management plan, which are still considered to be reasonably foreseeable future actions, include rehabilitating the visitor center at Rainbow Forest; constructing new trails, pullouts, wayside exhibits, picnic areas, and comfort stations throughout the park; and replacing Petrified Forest National Park and concessionaire employee housing near the Painted Desert.

There would be no new cumulative impacts to unique or important geological features. The minor to moderate construction-related adverse impacts of the preferred alternative, in conjunction with the adverse impacts of other reasonably foreseeable future actions, would result in adverse cumulative impacts to soils, air quality, biotic communities, and visitor use and experience ranging in intensity from minor to major, depending upon both the scope of the potential actions and the location. However, the adverse impacts of the preferred alternative would be a relatively minor component of the overall cumulative impact, due to the limited scope of the preferred alternative.

As described in the environmental assessment/assessment of effect, the minor to moderate beneficial impacts that implementation of the preferred alternative would have on archeological resources, visitor use and experience, park operations, and the socioeconomic environment, in conjunction with the beneficial impacts of other reasonably foreseeable future actions, could result in net beneficial cumulative impacts ranging in intensity from minor to moderate.

Various alterations to Rainbow Forest have occurred over the years since National Park Service/Civilian Conservation Corps (CCC) construction. Roadways were blocked-off, curbing replaced, new picnic facilities added, parking circulation altered, and modern facades added to the concessions building. At Long Logs, sections of wall and the overlook shelter have been added, and sections of curbing replaced. Because the primary, original design elements of the Rainbow Forest Historic Landscape are still intact, the landscape is eligible to be listed in the National Register of Historic Places.

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: As described in the environmental assessment/assessment of effect, implementing the preferred alternative will result in a long-term, moderate adverse impact to the Rainbow Forest Historic Landscape. Contributing elements (Jim Camp Wash bridge, Long Logs road and parking area) will be removed. In addition, there will be a long-term change in scale and visual relationships among landscape features. The replacement bridge and approach lanes will be wider, which will increase the scale of developed landscape elements. Converting Long Logs road into a foot trail and the resultant reduction of pavement width, the addition to the entry gate, and the change to pedestrian circulation only in the Long Logs area will also alter the scale of development, as well as the historic type of use.

The preferred alternative will result in an overall reduction of historic integrity in the Rainbow Forest Historic Landscape, but not to the extent that the landscape will no longer be eligible to be listed in the National Register of Historic Places. The intensity of the adverse impact will be moderate because (1) the primary, original design elements of the landscape will remain intact, especially with regard to retaining the historic alignment of the center line of the replacement bridge with the flagpole and museum on the west side, and (2) the replacement bridge will be visually compatible to the original bridge and its surroundings, i.e. similar in scale, massing and materials, color and texture, and orientation.

Compliance with Section 106 of the National Historic Preservation Act was completed through the negotiation and signing of a memorandum of agreement (MOA) between Petrified Forest National Park and the Arizona State Historic Preservation Officer. One of the stipulations in the MOA is documentation and recordation of affected historic properties. Another stipulation concerns inadvertent resource discoveries. If during construction previously unknown archeological resources are discovered, all work in the immediate vicinity of the discovery will be halted and the procedures of 36 CFR Part 800.13[c] followed. In the event that human remains, funerary objects, sacred objects, or objects of cultural

patrimony are discovered during construction, the regulations implementing the Native American Graves Protection and Repatriation Act (43 CFR Part 10) will be followed. A copy of the signed MOA is attached to this FONSI.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat. As described in the environmental assessment/assessment of effect, no federally listed threatened or endangered species, as well as candidate species, are known to inhabit the Rainbow Forest area or its general vicinity, and no species of special concern were observed in the vicinity of the project area.

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.

In addition to reviewing the list of significance criteria, Petrified Forest National Park determined that implementation of the preferred alternative will not constitute an impairment of the park's resources and values. This conclusion is based on a thorough analysis of the impacts described in the environmental assessment/assessment of effect, the agency and public comments received, and the professional judgement of the decision-maker in accordance with the National Park Service's *Management Policies, 2001* (December 27, 2000). As described in the environmental assessment/assessment of effect, implementation of the preferred alternative will not result in major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Petrified Forest National Park; (2) key to the natural or cultural integrity of the Park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

PUBLIC INVOLVEMENT

The environmental assessment/assessment of effect was made available for public review and comment during a 30-day period ending April 16, 2001. Four responses were received: from the City of Holbrook; AMFAC Park and Resorts, the park concessionaire; the Hopi Tribe; and the Arizona state historic preservation office. The City of Holbrook and AMFAC Park and Resorts expressed support for the preferred alternative. The Hopi Tribe agreed with the determination of effect for cultural resources and neither expressed concern nor raised any questions about the project.

The comments of the Arizona State Historic Preservation Officer resulted in no changes to the text of the environmental assessment/assessment of effect but are addressed in errata sheets attached to this FONSI. Compliance with Section 106 of the National Historic Preservation Act was completed through the negotiation and signing of a memorandum of agreement (MOA) between Petrified Forest National Park and the Arizona State Historic Preservation Officer. A copy of the FONSI, errata sheets, and MOA will be sent to all respondents.

CONCLUSION

The preferred alternative does not constitute an action that normally requires preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are minor or moderate in intensity. There are no significant impacts on public health, public safety, threatened or endangered species, historic properties either listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant 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 an EIS is not required for this project and thus will not be prepared.

Recommended: Michele D. Hellickson 4/19/2001

Michele Hellickson
Superintendent, Petrified Forest National Park

Date

Approved: 4/19/01

Karen P. Wade
Director, Intermountain Region

Date

Errata Sheets
Environmental Assessment/Assessment of Effect
Replacement of Jim Camp Wash Bridge and Associated Site Improvements
Petrified Forest National Park

The comments of the Arizona State Historic Preservation Officer, which are addressed below, resulted in no changes to the text of the environmental assessment/assessment of effect.

Comment: *...[t]he submittal (environmental assessment/assessment of effect)...insufficiently documents the consultation with the State Historic Preservation Officer (SHPO) in development of alternatives to avoid, minimize or mitigate any adverse effects on historic properties resulting from the undertaking. Specifically lacking is the SHPO objection to the Agency's determination that the expanded area proposed as a district is eligible as a single designed landscape.*

Response: Three alternatives specifically developed through consultations with the Arizona state historic preservation office are described in detail on pages 27-31 of the environmental assessment/assessment of effect, and concept sketches or schematic renderings of the alternatives are found on pages 32-34. Each alternative description included an analysis of potential impacts associated with possible implementation of the alternative, as well as the reasons why each of the alternatives was dismissed from further consideration. Because construction activities associated with the preferred alternative would be confined to previously disturbed ground in Rainbow Forest, implementation of any one of these three other alternatives would result in greater overall impacts to the park's natural and cultural resources than would the preferred alternative.

The environmental assessment/assessment of effect described the area of potential effects for historic properties at Rainbow Forest as a cultural landscape, more specifically a historic designed landscape that Petrified Forest National Park considered eligible to be listed in the National Register of Historic Places. The environmental assessment/assessment of effect identified Jim Camp Wash bridge and the Long Logs road and parking area as contributing elements of the historic designed landscape, contributing elements that would be adversely affected by implementation of the preferred alternative. On April 2, 2001, during the 30-day agency and public review period for the environmental assessment/assessment of effect, the Keeper of the National Register of Historic Places issued a formal determination of eligibility affirming that the Rainbow Forest cultural landscape was eligible to be listed in the National Register as a historic designed landscape. Among the many landscape elements identified in the determination of eligibility as contributing elements of the historic designed landscape were Jim Camp Wash bridge and the Long Logs road and parking area.

Comment: *...the submittal (environmental assessment/assessment of effect) assesses the potential effects only within this context of a proposed designed landscape, with no further delineation of an area of potential effects, while dismissing the specific effects upon potentially eligible buildings, structures and their setting which were issues raised by SHPO during consultation.*

Response: Cultural landscapes are a collection of features - natural resources, buildings, structures, and objects - that define the spatial character and organization of a geographic area. Character defining features of a cultural landscape are not viewed in isolation but in relationship to the landscape as a whole, although some features may be more important to the integrity of the landscape than others. The environmental assessment/assessment of effect described the arrangement and interrelationship of historic properties at Rainbow Forest as a historic designed landscape. Rather than focusing the description and analysis of effects of the alternatives on buildings, structures, and their settings individually, the environmental assessment/assessment of effect described and analyzed potential effects

associated with alternatives from the perspective of overall impacts to the historic designed landscape as a whole, which included effects on such character defining features of the landscape as buildings, structures, and their settings.

Comment: *Of particular concern is the reference to "historic circulation patterns" and "prehistoric archeological sites" as factors leading to the dismissal of alternatives. The SHPO objected to "historic circulation patterns" as neither an eligible property nor defining characteristic worthy of preservation; and was never consulted on the eligibility of the proposed "prehistoric archeological sites."*

Response: The *Secretary of Interior's Standards for the Treatment of Historic Properties, With Guidelines for the Treatment of Cultural Landscapes* (1996) identify several character defining features that collectively contribute to the historic character or integrity of a cultural landscape:

> **Topography**: the shape of the ground plane and its height or depth, which may occur naturally or as a result of human manipulation.
>
> **Vegetation**: individual plants or groups of plants such as a hedge, allee, agricultural field, planting bed, or a naturally occurring plant community or habitat that derives significance from historical associations, horticultural or genetic value, or aesthetic or functional qualities.
>
> **Circulation Features**: roads, parkways, drives, trails, walks, paths, parking areas, and canals, which may occur individually or be linked to form networks or systems.
>
> **Water Features**: may be aesthetic as well as functional and may be linked to the natural hydrologic system or may be fed artificially. Associated water supply, drainage, and mechanical systems may also be important features.
>
> **Buildings, Structures, Site Furnishings, and Objects**: the placement, and arrangement of buildings and structures are important to the character of a landscape. Site furnishings and objects generally are small-scale elements in a landscape that may be functional, decorative, or both.
>
> **Spatial Organization and Land Patterns**: the three-dimensional organization and patterns of spaces in a landscape, like the arrangement of rooms in a house. Both the functional and visual relationship between spaces is integral to the historic character of a property.

Circulation features are a character defining feature of a cultural landscape and were identified and analyzed as such in the environmental assessment/assessment of effect, and the determination of eligibility issued by the Keeper of the National Register for the historic designed landscape at Rainbow Forest identified the road system, including Long Logs Road, the Giant Logs trail system, the Longs Logs trail system, and the Long Logs parking area, as contributing elements to the landscape. The integrity of a historic designed landscape can be adversely affected if such contributing elements as roads and parking areas are altered. The construction of new roads can also alter the spatial relationship of contributing elements in a historic designed landscape, as well as the overall design, which would also adversely impact the integrity of the landscape.

The "prehistoric archeological sites" were identified by the National Park Service's Western Archeological Conservation Center, and mostly consist of a variety of petrified log chipping stations. The sites have not been formally evaluated, either individually or collectively, for their eligibility to be listed in the National Register of Historic Places, but the Western Archeological Conservation Center considers the sites to be National Register eligible as an archeological district associated with lithic production over time and prehistoric technology.

Comment: *All alternatives were dismissed by the Agency notwithstanding their potential to avoid or minimize or mitigate effects upon historic properties known to result from the preferred alternative…[T]he Agency's decision in dismissing the alternatives was matter of Agency policy rather than as a result of consultation in consideration of historic properties. Indeed, the Agency professed that even if no historic properties were adversely effected by an alternative, it would still be dismissed in favor of the preferred alternative. While the SHPO recognizes that the Agency's mission must be considered in reasonable application of the National Historic Preservation Act, documentation, consistent with the facts of consultation, sufficient to enable reviewing parties to understand the basis for any agreement between Agency and SHPO is required.*

Response: The environmental assessment/assessment of effect described potential conflicts between and among Petrified Forest National Park's natural and cultural resource preservation goals, park management and operation goals, and visitor use and experience goals. Conflicts were considered and analyzed during the planning process, which included appropriate consultation with the Arizona state historic preservation office. As described in the environmental assessment/assessment effect, implementation of any of the many alternatives, including the no-action alternative, would have resulted in adverse impacts to natural and cultural resources. In the opinion of Petrified Forest National Park, the preferred alternative best strikes a balance between the necessity of replacing Jim Camp Wash bridge and enhancing visitor safety with the preservation of the park's cultural resources, as well as preservation of the park's primary, nonrenewable resource - petrified wood. Other alternatives either unsatisfactorily addressed project objectives or would have resulted in too great of impacts upon the park's natural and cultural resources.

MEMORANDUM OF AGREEMENT
BETWEEN
PETRIFIED FOREST NATIONAL PARK
AND
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER
REGARDING
REPLACEMENT OF JIM CAMP WASH BRIDGE
AND
ASSOCIATED SITE IMPROVEMENTS IN THE RAINBOW FOREST AREA

WHEREAS, Petrified Forest National Park (the Park) has determined that replacing Jim Camp Wash bridge, widening the highway approach lanes to the bridge, and converting Long Logs road and parking area into a pedestrian trail, hereafter referred to as the project, will have an adverse effect on historic properties potentially eligible for inclusion in the National Register of Historic Places; and

WHEREAS, the National Park Service has established *Management Policies* that stipulate that every "...proposed action will be evaluated to ensure consistency or compatibility in the overall treatment of park resources. The relative importance and relationship of all values will be weighed to identify potential conflicts between and among resource preservation goals, park management and operation goals, and park user goals. Conflicts will be considered and resolved through the planning process, which will include any consultation required by 16 USC 470(f)" (*Management Policies, 2001*, Chapter 5.3.5, Treatment of Cultural Resources); and

WHEREAS, the Park consulted with the Arizona State Historic Preservation Officer (SHPO) pursuant to 36 CFR 800.8, *Coordination With the National Environmental Policy Act,* regarding implementation of Section 106 of the National Historic Preservation Act {16 USC 470(f)};

NOW, THEREFORE, the Park and the SHPO agree that the project shall be implemented in accordance with the following stipulations.

STIPULATIONS

The Park will ensure that the following measures are carried out:

1) **Submission of 95% Project Construction Drawings to SHPO**

Upon completion, 95% construction drawings for the project will be submitted to the SHPO for review and comment.

2) **Develop Guidance for Future Changes or Alterations to Rainbow Forest Parking Area**

Within six (6) months of the effective date this agreement, the Park with SHPO will develop design guidelines for future undertakings affecting historic properties in the Rainbow Forest Parking Area, to ensure that any changes or alterations are made in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, as determined in consultation with the SHPO. All future plans, documents, or reports pertaining to proposed changes or alterations to the Rainbow Forest Parking Area will be submitted to the SHPO for review and comment.

3) **Archival Recordation/Documentation**

The Park consulted with the Historic American Engineering Survey and SHPO to determine what recordation/ documentation shall be required for affected historic properties. Prior to any construction activities the Park will ensure that the following documentation standards are met:

- The Park will ensure that all recordation/documentation activities are performed or directly supervised by architects, historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A).
- The Park will ensure that historic drawings of affected historic properties are either photographed or photocopied in standard sizes for ease of handling.
- The Park will ensure that large format, black and white photographs in the size 5x7 are produced for all affected historic properties. Photographs will be archivally processed and stored. Negatives will be placed in acid free paper jackets and identified on the outside of each jacket. An index of photographs will be compiled, including the number of each photograph, date of photograph, photographer's name, direction of view, and description of view.
- The Park will ensure that a written history and description of affected historic properties, based both on primary and secondary sources, be provided. The written history shall include at a minimum a methodology section specifying name of researcher, date of research, and sources searched; a historical context statement addressing both the Civilian Conservation Corps and Mission-66 eras of park development; descriptions of affected historic properties; a completed architectural data form for Jim Camp Wash bridge; and a bibliography.
- The Park will ensure that all field records are assembled, including field notes compiled by the historian, site sketches, superintendent reports, and construction reports.
- The Park will provide copies of all documents resulting from the documentation/recordation to the SHPO.
- The Park will ensure that copies of all documents resulting from the documentation/recordation are deposited with Petrified Forest National Park.

4) Inadvertent Resource Discoveries

If during construction previously unknown archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted and the procedures of 36 CFR Part 800.13[c] followed. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, the regulations implementing the Native American Graves Protection and Repatriation Act (43 CFR Part 10) would be followed.

5) Monitoring of Construction Activities

The SHPO may monitor activities pursuant to this agreement, after providing at least 24-hours notification beforehand. The Park will cooperate with the SHPO in carrying out any monitoring and review responsibilities.

6) Dispute Resolution

Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree regarding a dispute, either of the signatories may request the participation of the Advisory Council on Historic Preservation (ACHP) to assist in resolving the dispute. Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute. The Park's responsibility to carry out all actions under this agreement that are not the subjects of dispute will remain unchanged.

At any time during implementation of the measures stipulated in this agreement, should an objection to any such measure be raised by a member of the public, the Park shall take the objection into account and consult as needed with the objecting party and the SHPO.

7) Amendment of Agreement

The agreement may be modified by amendment at any time by mutual concurrence of both parties. Amendment of the agreement as necessary shall be accomplished in the same manner as the original agreement. Amendments will be in writing and approved by the original signatories or their designated official.

8) Termination of Agreement

Either party to this agreement may terminate it by providing thirty (30) calendar days notice to the other party, provided that the parties will consult during the period prior to termination to seek agreements on amendments or other actions that would avoid termination. In the event of termination by the SHPO, the Park will request the comments of the ACHP, in accordance with 36 CFR Part 800.7[a].

9) Reporting

Within ninety (90) days after carrying out the terms of this MOA, the Park shall provide a written report to the SHPO as to the actions taken to fulfill the terms of the MOA.

10) Terms of Agreement

This agreement shall become effective after the date of the last signatory. The agreement shall be null and void if its terms are not carried out within two (2) years from the date of its approval by the Park and SHPO, unless the signatories agree in writing to an extension for carrying out its terms. Otherwise, this agreement shall become null and void when the project is complete, all of the above stipulations are fulfilled, and the SHPO has been provided with the aforementioned written report as to the actions taken to fulfill the terms of the agreement. The agreement and any amendments shall be binding upon the parties, their successors, and assigns.

Execution of this Memorandum of Agreement by the Park and SHPO, and implementation of its terms, evidences that the Park afforded the SHPO an opportunity to comment on the project and its effects on the proposed Rainbow Forest Historic Landscape District, that the Park has taken into the account the effect of the project on historic properties, and that the Park has satisfied its Section 106 responsibilities for the project referenced in this agreement.

AUTHORIZING SIGNATURES

Petrified Forest National Park

By: Michele Hellickson Date: 03/28/01

Michele Hellickson
Superintendent, Petrified Forest National Park

Arizona State Historic Preservation Office

By: James W. Garrison Date: 3/29/01

James W. Garrison
Arizona State Historic Preservation Officer