National Monument Service
U.S. Department of the Interior

Bandelier National Monument
New Mexico

REPLACEMENT OF MOTOR AND PEDESTRIAN BRIDGES FINDING OF NO SIGNIFICANT IMPACT

Bandelier National Monument (Monument), in cooperation with the Federal Highway Administration (FHWA), is planning replacement of a motor vehicle bridge, two pedestrian bridges, road repairs, and other improvements. The purpose of the project is to reestablish safe access to the picnic area, parking, and trailheads on the west side of Rito de los Frijoles (Frijoles Creek). The project is needed to address the loss of vehicle access across Frijoles Creek and diminished pedestrian access as a result of wildfire and subsequent flooding that resulted in the removal of bridges and damage to roads. Because of these deficiencies, the National Park Service (NPS) is implementing bridge replacements, repairs, and improvements that will restore and maintain Monument infrastructure and help ensure the safety of visitors.

This finding of no significant impact (FONSI) and the environmental assessment (EA) constitute the record of the environmental impact analysis and decision-making process. The NPS will implement the preferred alternative to replace bridges, repair roads, and make other improvements. Incorporated into the project design are measures for protection of Monument natural and cultural resources and improvements in the efficiency of Monument operations. The preferred alternative was selected after careful review of resource and visitor impacts and public comment.

This document records (1) a FONSI as required by the National Environmental Policy Act of 1969 (NEPA) and (2) a determination of no impairment as required by the NPS Organic Act of 1916 (see Appendix). The FONSI will be available on the NPS Planning, Environment and Public Comment (PEPC) website at http://Monumentplanning.nps.gov/band.

SELECTED ACTION

Alternative B, Bridge Replacement with Road Repairs and Improvements, is the preferred alternative and NPS's selected action because it best meets the purpose and need for the project as well as the project objectives to:

- Provide safe and convenient access for vehicles and pedestrians across Frijoles Creek
- Restore visitor parking and picnic opportunities lost as a result of flooding
- Repair flood-damaged roads to provide safe travel
- Restore vehicle access to allow Monument staff to perform search and rescue operations, fire suppression, facility operations, and road and trailhead maintenance
- Efficiently implement construction and repair work while minimizing impacts on visitors
- Protect and restore natural, cultural, and scenic values

- Identify a design and access location that minimizes impacts on Monument resources in accordance with NPS regulations and policies.

The selected action includes constructing a new vehicular crossing of Frijoles Creek about 900 feet downstream from the previous bridge location near the visitor center. The crossing design will allow passage of normal flows through the box culvert. High flows above the capacity of the culvert will pass over the top of the crossing without substantially impeding flows and allowing debris to be carried downstream without damaging the crossing structure or backing up streamflow. Approximately 200 feet of new road will be constructed from the entrance road to the new vehicular crossing. Improvements to Routes 201 and 202 on the west side of Frijoles Creek include removing flood-deposited sediment and debris, pulverizing existing pavement and supplementing with aggregate base, and repaving. Route 202 will be widened to more safely accommodate two-way traffic. A new ¾-inch-diameter PVC water line will be buried within the footprint of the proposed road work on Routes 201 and 202 prior to road paving to serve drinking fountains and a comfort station. The flood-damaged entrance road shoulder and asphalt at an existing historic culvert headwall will be repaired. Two pedestrian bridges removed by flooding will be replaced at the same location as previous bridges. These bridges will be designed to break away at flood flow so as not to obstruct flow or capture debris.

BEST MANAGEMENT PRACTICES

The following Best Management Practices (BMPs) will be implemented to minimize the degree and/or severity of adverse effects.

General Measures

- Construction limits will be clearly marked with stakes prior to beginning ground-disturbing activities. No disturbance will occur beyond these limits other than protection measures for erosion/sediment control.
- All contractor employees and subcontractors shall attend an orientation session(s) regarding Monument regulations focused on minimizing impacts on resources, human health, and safety. Sessions will include specific education on the status and protection of the Mexican spotted owl and laws regarding archeological resources.
- All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project area work limits upon project completion. Construction debris will be hauled from the Monument to an appropriate disposal location.

Floodplains

- Staging and stockpiling areas will be situated outside of the floodplain to the extent possible. Construction equipment may be parked within the floodplain during periods when the potential for flooding is low.
- Sustainable design principles that minimize impacts on the natural environment will be used by building new stream crossing structures into the natural configuration of the land.

Water Resources

- Stormwater runoff control measures, using silt capture techniques such as silt fences, sediment curtains, sediment logs or wattles, or sediment traps will be employed as needed to contain sediment in the immediate work zone, improve the quality of runoff, and prevent degradation of Frijoles Creek.

- A Nonpoint Source Discharge Elimination System Permit (NPDES) will be obtained prior to construction and a Stormwater Pollution Prevention Plan (SWPPP) will be prepared and used by all construction personnel.
- Construction activities will cease if a large storm event is forecast that could substantially increase flow in Frijoles Creek. Construction activities will not recommence until the flow of the creek has decreased to normal low-flow conditions.
- The contractor will provide a Spill Prevention, Control, and Countermeasure Plan (SPCC) for oil and oil products used during construction to prevent pollution of Frijoles Creek. All construction staff will be familiar with the SPCC prior to starting construction.
- Equipment use in Frijoles Creek will be limited to the minimum necessary to construct the vehicular crossing structure and move equipment across the creek. Mechanized equipment will not be operated or material discharged or placed within the boundaries of any U.S. waters as identified by the ordinary high water mark or edge of a wetland, unless authorized by a permit issued by the U.S. Army Corps of Engineers (Corps of Engineers).
- Only biodegradable vegetable-based hydraulic fluid will be used in excavators that may reach into Frijoles Creek.
- All fueling will occur more than 100 feet from any surface water in a location where a fuel spill will not be able to enter the water.
- To minimize possible petrochemical leaks from construction equipment, the contractor will regularly monitor and check construction equipment to identify and repair any leaks.
- Fuel and oil services for construction machinery will be provided in a designated area away from Frijoles Creek. This will include secondary containment for all fuel storage tanks and on-site availability of a spill kit.

Wildlife and Species of Concern

- Construction personnel will be instructed on appropriate behavior in the presence of wildlife and on proper storage and handling of food, garbage, and other attractants.
- Tree clearing will be conducted outside of the bird breeding season (May 1 to August 15 for migratory birds; March 1 to August 15 for the Mexican spotted owl) if feasible. If this is not feasible, Monument biologists will conduct field surveys for nesting birds/Mexican spotted owls prior to tree removal. Tree removal will be conducted after 9 a.m.
- Additional conservation measures will be taken to protect the Mexican spotted owl:
    - Preconstruction surveys for Mexican spotted owl nesting will be conducted by Monument biologists within ¼ mile of the project area prior to construction activities.
    - Removal of ponderosa pine trees for widening of Route 202 will occur prior to the Mexican spotted owl breeding season if feasible.
    - No night work will be allowed.
    - Monument staff will inform construction personnel of the occurrence and status of the Mexican spotted owl within the project area, the potential impacts construction activities may have on the species, and the potential penalties for taking or harming this species.
    - Equipment will not be allowed to idle longer than 15 minutes when not in use.

- All motor vehicles and equipment will have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise.

Vegetation

- Disturbance to vegetation will be avoided as much as possible and contained to as small a footprint as possible while meeting project objectives. Tree removal will be limited to the minimum necessary for installation of a new vehicular crossing and road improvements.
- Construction equipment will be cleaned before entering the Monument to minimize the transportation of exotic seeds to the site. All equipment entering the Monument will be inspected and may be required to be pressure washed to remove foreign soil, vegetation, and other materials that may contain nonnative seeds or vegetation.
- Revegetation and recontouring of disturbed areas will take place following construction, and will be designed to minimize visual intrusions. Revegetation efforts will use native species to strive to reconstruct the natural spacing, abundance, and diversity of native plant species. All disturbed areas will be restored as nearly as possible to preconstruction conditions shortly after construction activities are completed.
- Nonnative invasive plant infestations near disturbed areas will be treated on a yearly basis for a minimum of three years following project completion.
    - Soil, duff, and litter from work areas will be salvaged prior to disturbance. Material will be stored in piles under tarps in shade and reapplied as soon as work is completed. Reclaimed areas will be watered with creek water to stabilize and promote growth.
    - Soil, duff, and litter will be applied after construction work is completed.
    - As needed, on steeper slopes, drainage patterns, or active creek banks geo-jute erosion fabric (¼-inch natural hemp open mesh) and will be applied and secured with hardware staples.
    - Introduced seed or plant materials (even named native species) from commercial sources will not be used. Natural revegetation from native seed and root sources should be sufficient for revegetation. If the Monument biologist determines additional plant material is needed, it will be collected from local native seed and salvaged plant material.

Soils

- Disturbance to soils will be contained to as small a footprint as possible while meeting project objectives.
- Erosion-control measures that provide for soil stability and prevent movement of soils into waterways will be implemented.
- Topsoil will be salvaged, stored, and used to restore temporarily disturbed areas following construction.
- Any topsoil temporarily disturbed during construction will be aerated and replanted with native vegetation and mulched with native hay to reduce compaction and prevent erosion.
- To minimize the amount of ground disturbance, staging and stockpiling areas will be placed on previously disturbed land.

Hazardous Material

- A DDT sampling plan will be developed and the site will be tested for DDT and associated contaminants. If a level of 142 parts per million or higher is detected through sampling, a treatment plan will be developed for areas potentially disturbed by construction.
- Construction workers involved in the removal of contaminated soil will wear protective clothing in accordance with Occupational Safety and Health Administration requirements.

Cultural Resources

- Known historic sites and isolated occurrences will be flagged and avoided during construction, and a NPS archeologist will be on-site during ground-disturbing activities, including trenching for installation of the water line.
- Should construction unearth previously undiscovered cultural resources, work will be stopped in the area of any discovery and the NPS archeologist will consult with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP), as necessary, according to §36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) will be followed.
- Monument staff will ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors will also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction.

Visitor Use and Experience

- Signs, press releases, and other communication methods will be used to inform visitors about construction, trail access, and traffic delays.
- Trail connections on the west side of Frijoles Creek will be maintained as feasible during construction.
- Contractor employees and subcontractors will not park vehicles in the visitor center parking lot for longer than 30 minutes in a day.

Air Quality and Soundscapes

- Fugitive dust generated by construction will be controlled as necessary by spraying water on the construction site.
- All construction motor vehicles and equipment will have mufflers conforming to original manufacturer specifications that are in good working order to prevent excessive or unusual noise, fumes, or smoke.
- To reduce noise and emissions, construction equipment will not be permitted to idle for longer than 15 minutes when not in use.

Public Health, Safety, and Park Operations

- Appropriate barriers and barricades will be used to clearly delineate work areas and provide for safe visitor travel through construction areas.
- Construction workers will wear appropriate attire such as hard hats, gloves, and goggles to protect themselves from natural hazards. Visitors will not be allowed into construction zones. Monument staff will also be required to wear protective gear when they are in the construction zone.

- Trucks hauling debris and other loose materials will be covered to maintain adequate freeboard to prevent spillage to paved surfaces.
- Emergency response protocols will be developed for implementation during construction. Construction activities will be conducted in accordance with established safety protocols.
- Employees and construction crews will be required to park their vehicles in designated locations.
- Construction workers and supervisors will be informed about the special sensitivity of Monument values, regulations, and appropriate housekeeping.

ALTERNATIVES CONSIDERED

Alternative A, the no action alternative, also was evaluated in the EA. Under Alternative A, the vehicular bridge and two pedestrian bridges lost during flooding would not be replaced with new structures. The existing temporary pedestrian bridge installed near the parking lot would remain. This bridge would allow visitors and Monument staff to cross Frijoles Creek by foot to access trails and facilities on the west side of the creek. Vehicle access to the west side of Frijoles Creek for parking, maintenance, emergency services, and other Monument operations would no longer be available. The picnic area would not be restored because of the limited access for maintaining facilities. Repair or removal of damaged asphalt and sediment deposition on Routes 201/202 and in the parking and picnic area would not be possible without vehicle access. The eroded road shoulder adjacent to a historic stone headwall would not be repaired nor would the water line.

The NPS also considered, but rejected from additional analysis in the EA, several new vehicular crossing locations at upstream locations based on hydrologic studies. These sites were dismissed because upstream locations would have greater risk for backing up flood flows and impacting the visitor center and other components of the Historic District. A downstream vehicular crossing was rejected because it would have greater environmental and possible cultural resource effects from a longer access road that would need to be constructed. Alternative vehicular crossing and bridge designs were also considered and dismissed in favor of the low-profile box culvert design that would better pass flood flows. Installation of a temporary seasonal bridge for vehicle use at the location of the old bridge was considered, but dismissed because it would not meet the project purpose and need by allowing year-round access for visitors or Monument maintenance and emergency services. Construction of a strongly reinforced pedestrian bridge designed to withstand flood flows was considered, but dismissed because of concern that this type of bridge would capture logs and other debris during flood events that could impact the visitor center and Monument facilities.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

According to the Council on Environmental Quality regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative."

Overall Alternative A (no action) is the environmentally preferable alternative because there would be no activities that would disturb elements of the biological and physical environment. With no new construction of a vehicular crossing of Frijoles Creek and access road, repairs to

Routes 201 and 202, installation of two pedestrian bridges, and new water line, this alternative best protects and preserves natural resources. Existing conditions would be maintained and no new adverse effects on the environment would occur. This alternative would not involve new construction or any other development that could disturb existing natural and cultural resources. However, not repairing the eroding entrance road shoulder above a historic culvert may lead to additional erosion, damage to the Civilian Conservation Corps (CCC) stone culvert headwall, and continued soil erosion and public safety concerns. In addition, Alternative A would not restore the historic vehicle circulation pattern to the picnic area, which is a component of the Historic District.

WHY THE SELECTED ACTION 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: A significant effect may exist even if the agency believes that on balance the effect will be beneficial

Implementation of the selected action will result in some adverse impacts; however, the overall benefit of the project outweighs negative effects. Construction activities will adversely affect about 0.69 acre of soils as a result of grading, excavation, compacting, paving over soils, removing soils, and removing vegetation. Construction-related activities may temporarily adversely affect floodplains as a result of increased sedimentation into Frijoles Creek; however, BMPs will be implemented to minimize the short-term effects. A new low-profile vehicle crossing structure across Frijoles Creek will provide increased conveyance of flood flows and reduce the likelihood of flooding of historic structures. The new vehicle crossings and new pedestrian bridges will not impede flows or adversely affect floodplain functions or the risk of flood damage.

Construction activities will cause adverse impacts on the Bandelier National Monument Cultural Landscape, the Frijoles Canyon Historic District, and the Bandelier CCC Historic District (component landscapes). While the historic and pre-flood pattern of vehicular access to the west side of Frijoles Creek will be restored, construction of the vehicular crossing, improvements to Routes 201 and 202, and repairs to the entrance road will result in physical disturbance to the Cultural Landscape within the Historic Districts. The addition of nonhistoric pedestrian bridges and temporary construction activities will introduce new nonhistoric elements, along with altering the historic circulation pattern.

Construction-related noise and disturbance could deter Mexican spotted owl activity in the project area. This will have a short-term impact on foraging and roosting habitat and no impact on nesting habitat. Removal of less than 20 trees and other habitat loss will have a long-term impact on available roosting habitat. With implementation of conservation measures, the selected action may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat. There will be no effect on other federally listed species.

Restoration of facilities will return the quality and opportunities for recreation on the west side of Frijoles Creek to what they were prior to flood damage. This will have a long-term beneficial effect on the quality of the visitor experience. Access to visitor facilities on the west side of Frijoles Creek lost as a result of flooding will be restored by construction of new crossing structures and bridges. Parking, picnic areas, restroom facilities, and drinking fountains will be repaired and restored. Construction work will have a short-term adverse impact on the quality of the visitor experience from noise, dust, disturbance, and traffic delays.

No significant resource effects were identified. BMPs, as listed above, will minimize adverse effects. Additional detail on resource effects is found in the EA.

Degree of effect on public health or safety

Moving the new vehicle crossing to a location off of the entrance road will reduce traffic congestion near the visitor center and parking lot where the old bridge crossing was located. This will improve visitor safety by reducing traffic through a congested area where pedestrians are present. Repairs to the damaged road shoulder along the entrance road will improve safety for drivers and pedestrians along the road. The potential presence of DDT-contaminated soil in the area of disturbance will be addressed by sampling and implementing any remedial action or safety precautions prior to and during construction. Traffic control and restricting visitor access near construction zones will be implemented to protect visitors during construction.

Degree to which effects on the quality of the human environment are likely to be highly controversial

Throughout the environmental process, the proposal to replace bridges and other improvements were not highly controversial and the effects are not expected to generate future controversy. None of the identified environmental effects from implementation of the project were highly controversial and there is no indication of controversy over the nature of the effects. Given the substance of public comments, there is no evidence that the effects on the quality of the human environment will be highly controversial.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

Road and bridge work meets project objectives through implementation of structural improvements that repair and correct damaged conditions, address public safety, provide for visitor enjoyment, and protect Monument natural and cultural resources. The anticipated effects on the human environment, as analyzed in the EA, are not highly uncertain or unique, and do not involve unknown risks. Resource conditions in the project area are well known and the anticipated impacts from implementing commonplace road rehabilitation work are understood based on FHWA and NPS experience with similar projects.

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

Bridge replacement, road rehabilitation, and improvements will not result in significant adverse effects on the natural environment, cultural resources, or visitor experience, and will not set a precedent for future actions that could have significant effects because the selected action will be replacing and repairing facilities that previously existed.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

The EA concluded that past, present, and future activities, when coupled with the bridge replacements, road repairs, and other actions, will have both adverse and beneficial cumulative effects. No significant adverse cumulative effects were identified.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

Installation of a new vehicular crossing and road repairs and improvements will adversely impact the Bandelier Cultural Landscape, the Frijoles Canyon component landscape, and the Bandelier CCC Historic District component landscape. Construction of the vehicular crossing and changes to the entrance road will introduce new nonhistoric elements in these cultural landscapes and alter the historic circulation pattern. However, historic and pre-flood vehicular access to the west side of Frijoles Creek will be restored. There will be no impact to any of the eight archeological sites in proximity to the project area. The replacement of the two nonhistoric pedestrian bridges will introduce new elements into the cultural landscape, but they will be similar to ones that were removed prior to flooding. The introduction of a new element will not adversely affect the landscape; the bridge design will be in character with the landscape. To ensure appropriate treatment of historic properties, the NPS and the New Mexico SHPO signed a memorandum of agreement (MOA) with stipulations on March 4, 2015 for the treatment of historic properties that may be adversely affected by project implementation.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

In a Biological Assessment (BA) submitted to the U.S. Fish and Wildlife Service (USFWS), the NPS determined that the selected action may affect, not likely to adversely affect Mexican spotted owl or its critical habitat. The NPS also determined that there will be no effect on any other federally listed threatened or endangered species or critical habitat. The USFWS concurred with the Monument's determination in a letter dated January 8, 2015.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, Monument lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

No prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas will be affected. As described previously, adverse impacts on the Bandelier Cultural Landscape, the Frijoles Canyon component landscape, and the Bandelier CCC Historic District component landscape will occur primarily from changes in the historic circulation pattern and physical disturbances.

Whether the action threatens a violation of federal, state, or local environmental protection law

The selected action does not violate any federal, state, or local environmental protection laws.

PUBLIC INVOLVEMENT

The EA was made available for public review and comment during a 15-day period ending February 15, 2015. To notify the public of this review period, a letter was mailed to stakeholders, interested parties, and newspapers. Copies of the document were sent to individuals; businesses; organizations; state, county, and local governments; federal agencies; and American Indian tribes. The Monument did not receive any comments on the EA from the public during the review period.

AGENCY CONSULTATION

New Mexico State Historic Preservation Officer

Compliance with section 106 of the National Historic Preservation Act (NHPA) was conducted separately from NEPA, through ongoing consultation with the New Mexico SHPO, Monument-affiliated American Indian tribes, and the ACHP. The separate NHPA section 106 process resulted in a MOA outlining measures to mitigate the adverse effects of the selected action. In accordance with section 106 of the NHPA, the NPS provided the New Mexico SHPO an opportunity to comment on the effects of this project with regard to historic properties. The NPS submitted a determination of "adverse effect" to the SHPO. The NPS also consulted with the ACHP and invited the council to participate in section 106 consultations and the development and implementation of a MOA to mitigate adverse effects associated with the proposed undertaking. In a November 26, 2014 letter, the SHPO concurred with the Monument's determination that the selected action will have an adverse effect on the Frijoles Canyon component landscape and the Bandelier CCC Historic District National Historic Landmark. The SHPO agreed to participate in preparation of the MOA to resolve adverse effects.

U.S. Fish and Wildlife Service (Endangered Species Act)

In accordance with the Endangered Species Act (ESA), the NPS contacted the USFWS by letter on September 26, 2014 to solicit input on threatened and endangered species concerns for the proposed project. The NPS conferred with the USFWS on October 22, 2014 and a decision was made to prepare a BA because of potential for impacts on the Mexican spotted owl, a federally listed threatened species. The Monument prepared a BA as part of Section 7 consultation under the ESA and submitted it to the USFWS for review and concurrence on December 22, 2014. The USFWS concurred with the Monument's findings that the selected action may affect, but is not likely to adversely affect, federally listed species in a letter dated January 8, 2015.

CONCLUSION

As described above, the selected action does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected action will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts that range from localized to widespread, short- to long-term, and negligible to moderate. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register, 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 selected action will not violate any federal, state, or local environmental protection laws.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Approved: Sue E. Masica 3/6/15

Director, Intermountain Region
Sue E. Masica

Date

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Appendix – Non-Impairment Determination

The NPS *Management Policies 2006* require analysis of potential effects to determine whether actions will impair Monument resources. The fundamental purpose of the national Monument system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve Monument resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on Monument resources and values.

However, the laws do give the NPS the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within the park, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, will harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of these resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment, but an impact would be more likely to constitute an impairment when there is a major or severe adverse effect on a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be an impairment is based on whether an action would have major (or significant) effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations because impairment findings relate back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, the topics remaining to be evaluated for impairment include geology and soils, floodplains, cultural landscapes, and species of special concern.

Fundamental resources and values for the Monument are identified in the draft *Foundation Document*. According to that document, of the impact topics carried forward in the EA, natural resources such as geology and soils, floodplains, cultural landscapes, and species of special concern are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the Monument, are key to the natural cultural integrity of the Monument, and/or are identified as a goal in the other relevant NPS planning documents.

Geology and Soils

Construction of the new Frijoles Creek crossing and access road and improvements and repairs to Route 201, Route 202, and the entrance road will require earthwork and surface disturbance to soils, including a long-term impact on about 0.69 acre. A variety of BMPs will be used to protect soils during and following construction. The selected action will not result in an impairment of geology and soils because much of the area of impact is in areas with previous disturbance and because all temporarily disturbed areas will be restored with native vegetation following construction.

Floodplains

Portions of the project area are located in the 100-year floodplain of Frijoles Creek. Wildfires in the upper watershed have resulted in multiple flood events that have damaged Monument resources and facilities. Construction of a new low-profile vehicular crossing structure across Frijoles Creek is designed to readily pass flood flows and, thus, it will have minimal impacts on floodplain functions and flooding risk. The new crossing will reduce the potential for flood damage of Monument facilities. Installation of new pedestrian bridges designed to break away during floods will not restrict flood flows or impact the floodplain. The new road to the vehicular crossing and the widening of Route 202 will increase the impervious surface area in the floodplain by about 0.69 acre, which will have a negligible effect on flooding or the floodplain. The NPS reviewed the flood hazards for the selected action and prepared a floodplain statement of finding, which is found as an attachment to this document. The NPS determined that the selected action will not result in an impairment of floodplain functions or increase the risk of flooding.

Cultural Landscapes

Implementation of the selected action will adversely impact the Bandelier Cultural Landscape, the Frijoles Canyon component landscape, and the Bandelier CCC Historic District component landscape. Construction of a new Frijoles Creek vehicular crossing structure and access road in a new location within the Frijoles Canyon Historic District and CCC NHL Historic District will have direct physical impacts on the cultural landscapes and change the historic circulation pattern. Repair of the entrance road will involve modifying the historic CCC headwall and widening the historic entrance road. Repairs and improvements to Routes 201 and 202, installation of two pedestrian bridges, and installation of a new water line will have minor adverse impacts on the cultural landscape. These actions will make small changes to historic structures and add new elements to the cultural landscapes. The selected action will not impair the cultural landscape with implementation of the stipulations in the MOA.

Special Status Species

The Mexican spotted owl is the only federally listed species with potential to occur in or near the project area. Construction activities and tree removal under the selected action have the potential to affect the Mexican spotted owl as a result of a temporary increase in human activity and noise from construction equipment. The effects of habitat loss and tree removal will be permanent, but are expected to have little impact on potential Mexican spotted owl roosting and foraging habitat within the project area. The permanent impacts on critical habitat will be less than 0.0012% of the total amount of designated critical habitat in the SRM-NM-4 critical habitat unit and less than 0.002% of the total designated critical habitat in the Monument. The loss of critical habitat will be small compared with the available habitat, the habitat in the project area is highly fragmented, and the project area is a high-use area. Therefore, the impacts on critical habitat from the selected action will be insignificant and discountable.

The selected action will not result in an impairment of Mexican spotted owl or its critical habitat with implementation of conservation measures that will be implemented to avoid and minimize potential impacts. There will be no affect to other federally listed species. The USFWS concurred with the determination in the BA prepared by the NPS that the selected action, may affect, but will not adversely affect, the Mexican spotted owl.

Conclusion

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of Monument resources and values from implementation of the selected action.