National Park Service
U.S. Department of the Interior

Rocky Mountain National Park
Colorado

# FINDING OF NO SIGNIFICANT IMPACT

## REROUTES AND REPAIRS TO FLOOD DAMAGED TRAILS
## ASPEN BROOK AND TWIN SISTERS TRAILS

Recommended:

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Superintendent, Rocky Mountain National Park — Date

Approved:

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Regional Director, Intermountain Region, National Park Service — Date

## INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed reroutes and repairs of five trails that were heavily damaged or lost during the September 2013 flood: Lawn Lake, Ypsilon Lake, Alluvial Fan, Aspen Brook, and Twin Sisters. A decision to reroute and repair the Lawn Lake, Ypsilon Lake, and Alluvial Fan trails was made, and a finding of no significant impact (FONSI) was signed for those trails on June 24, 2016. This FONSI is being prepared for the Aspen Brook and Twin Sisters trails only. The project is needed to address damaged portions of these trails, while protecting natural resources, cultural resources, and preserving wilderness character.

The statements and conclusions reached in this FONSI are based on documentation and analysis provided in the EA and associated decision file. When necessary, relevant sections of the EA are incorporated by reference below.

## SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

Based on the analysis presented in the EA, NPS selected Alternative B – Establish and Maintain a Travel Route (the NPS preferred alternative).

**Aspen Brook Trail –** The trail will be rerouted and repaired using federal funding. Rerouted sections range from about 430 feet to 2,200 feet in length, and total about 5,160 feet. NPS trail sustainability concepts will be fully implemented in the trail reroute design and construction. The trail tread will be about 3 feet wide, with trail clearing limits approximately 6 feet wide by 10 feet high. Abandoned sections of the existing trail (about 3,360 feet) will be stabilized and revegetated. The existing hitch rack on the west side of Aspen Brook will be removed and a new hitch rack will be installed closer to the historic Wigwam Tearoom. This work is expected to take two to five years to complete. The trail will be open to hiker and equestrian use once the repairs and reroutes have been completed.

A new trail extension to provide a connection to Spur Highway 66 outside the park is a second element of this decision. Because establishing and maintaining a travel route is not necessary for administration of designated wilderness in the park and has been requested by outside entities, non-federal funding is required for construction and ongoing maintenance of the 4,200 foot trail extension. Within the authorized boundary of the park, trail construction and ongoing maintenance will be done by NPS using non-federal funds. Recorded trail easements or rights-of-way across all private lands between Spur Highway 66 and the park boundary, and a written agreement between the NPS and all partners will be required prior to implementation. The NPS will require the entire trail extension both inside and outside the park to be open and available to the public, including equestrian use, if it is constructed.

If funding, recorded easements or rights-of-way, and a written agreement to extend the Aspen Brook Trail do not occur within five years of the approval date of this FONSI, the trail extension will not be built, and informal trails in that area of the park will be obliterated, and the area will be restored to natural conditions to the extent practicable.

**Twin Sisters Trail –** The informal foot trail that has developed across the landslide, and the informal foot trail that has developed south of the landslide, will be retained and maintained as Class 3 trails to the extent practical. The informal foot trails will be incorporated into the regular trail maintenance program, and repairs and erosion-control measures to mitigate impacts will be implemented. The trail width will be maintained at 2 to 3 feet with clearing limits of 4 feet by 7

feet. Existing trail segments or informal routes that are redundant or obsolete will be stabilized and revegetated. The steep trail grade, limited width, and limited clearing limits of the informal foot trail on the south side of the landslide does not accommodate equestrian use. Therefore, pedestrian use will be allowed on the Twin Sisters Trail, but no other modes of transportation, including equestrian use, will be permitted. An assessment of informal trails once the improvements have been completed will document the current conditions of the trails to be retained and their associated impacts. The data from the study will be used to help inform the decision process for the adaptive management alternative.

Twin Sisters Trail Adaptive Management **–** Upon completion of the trail repairs and installation of the erosion-control measures, the park will obtain baseline trail metrics for the repaired trails, such as the width of the trail tread, extent of current erosion, and current area of ground disturbance. The same trail metrics will be collected during routine trail maintenance going forward, and compared to the baseline data. If substantial change is evident at routine five-year maintenance intervals (e.g., the trail is substantially wider, erosion and ground disturbance are substantially greater), and cannot be repaired or stabilized with proven trail construction and maintenance techniques, the park may seek federal funding to construct a trail reroute. If federal funding is obtained, the reroute will be approximately 2,730 feet in length. The new trail alignment will not cross the landslide path and will be located north of the landslide on a stable side slope with multiple switchbacks connecting undamaged portions of the original Twin Sisters Trail. The new trail will be constructed according to park trail design standards. The trail tread will be about 3 feet wide, with trail clearing limits approximately 6 feet wide by 10 feet high. With this new trail section in place, equestrian use may be allowed on the Twin Sisters Trail. For commercial liveries, use of the Twin Sisters Trail will be governed by the concessions contracts in place at the time. Abandoned sections of the existing trail (about 2,200 feet) will be obliterated, stabilized, and revegetated.

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Because both trails are located in designated wilderness, the park will implement trails work using the management actions that are the minimum necessary for wilderness administration according to the *Minimum Requirements Decision Guide* (MRDG) prepared by the park that was included in the EA as Appendix B to evaluate alternative methods and tools for constructing and repairing trails in wilderness. The MRDG for the Aspen Brook Trail was approved on January 12, 2017. The MRDG for the Twin Sisters Trail was approved on March 9, 2017.

**Rationale**

Alternative B was selected because it best meets the project purpose to;

- Allow for non-motorized recreational uses of trails damaged by flooding;
- Protect and preserve natural, cultural, and scenic values along all rerouted or repaired trails;
- Preserve wilderness character, supporting visitor access, safety, and resource protection;
- Efficiently implement construction and repair work while minimizing impacts on visitors; and
- Use trail design and construction methods that minimize impacts on park resources in accordance with NPS regulations and policies and consistent with park regulations and policies.

## MITIGATION MEASURES

The decision for the Aspen Brook and Twin Sisters Trails, the Aspen Brook Trail extension, and the adaptive management Twin Sisters Trail reroute, all incorporate mitigation measures and best management practices to minimize the degree and/or severity of adverse effects on floodplains; water resources; wildlife and species of concern; vegetation; soils; wilderness; cultural resources; visitor use and experience; air quality and soundscapes; and public health and safety. These mitigation measures are listed in Appendix A of this document.

## FINDING OF NO SIGNIFICANT IMPACT

The Council on Environmental Quality (CEQ) regulations at 40 CFR Section 1508.27 identify ten criteria for determining whether the Selected Alternative will have a significant effect on the human environment. The NPS reviewed each of these criteria given the environmental impacts described in the EA and determined there will be no significant direct, indirect, or cumulative impacts under any of the criteria.

As described in the EA, the selected alternative has the potential for adverse impacts on soils, vegetation (including the potential to induce the spread of noxious weeds), wildlife (including special status species), wilderness, and visitor use and experience; however, no potential for significant adverse impacts was identified.

New trail construction will generate soil and vegetation disturbance, but impacts will be partially offset by stabilization and revegetation of abandoned damaged trail sections and elimination of surface disturbance along informal trails. Vegetation disturbance will occur primarily to non-woody vegetation such as western golden ragwort, Parry's goldenrod (*Oreochrysum parryi*), leafy cinquefoil (*Drymocallis fissa*), woolly brome (*Bromus lanatipes*), bracted alumroot (*Heuchera bracteata*), and dotted saxifrage (*Cilaria austromontana*).

For the Aspen Brook Trail, about 1.18 acre of soils and vegetation will be altered for trail improvements and reroutes, with about 0.77 acre of existing disturbed trail revegetated and protected. Alterations to develop the rerouted segments of trail include vegetation removal and manipulation of the exposed soil to create the trail alignment. In some locations soil will be removed, and in others soil and trail tread material will be imported to establish final trail grades.

If the Aspen Brook Trail extension is implemented, about 0.96 acre of soil and vegetation will be disturbed within the park boundary. Installation of a new hitch rack will result in a few hundred square feet of compaction and soil and vegetation disturbance from horse use. A commensurate area will be restored where the original hitch rack was located. These impacts, though adverse, are considered minor given that these soil and vegetation types are common in the park.

For the Twin Sisters Trail, incorporation of the informal trails within the trail maintenance program will allow for trail improvements, drainage, and erosion-control measures to improve trail stability. Improvements on about 575 feet of informal trail to connect existing sections of undamaged trail will result in a loss of soil productivity within about 0.05 acres for the life of the trail. This impact will be offset by protecting about 0.03 acre of soil due to the restoration of about 1,110 feet of existing trail and elimination of redundant informal trails. Overall, this alternative will have a net benefit on soil resources and will promote revegetation of previously disturbed areas.

If the Twin Sisters Trail adaptive management alternative is implemented, the trail reroute will require construction of about 2,730 feet of new trail, which will be designed for long-term stability and reduced maintenance. About 0.63 acre of soils and vegetation along the new alignment will be altered. Alterations to develop the trail reroute include vegetation removal and manipulation of the exposed soil to create the trail alignment. In some locations soil will be removed, and in other locations soil and trail tread material will be imported to establish final trail grades. Though adverse, this is considered a minor impact given that these soils and vegetation types are common in the park. Incorporation of drainage and erosion-control measures in the trail design will minimize soil impacts. About 2,200 feet of the existing trail will be reclaimed and informal trails will no longer be used, protecting about 0.10 acre of soil from erosion and other use-related impacts. This alternative will benefit soil resources by providing a stable trail and eliminating and restoring abandoned trail segments and informal trails.

Elk, migratory birds, small mammals, and other wildlife will be temporarily displaced during trail construction work typically occurring from May to September over two to five years. Field surveys for migratory bird nests and cavities will be conducted prior to ground-disturbing activities and vegetation removal during the breeding and nesting season. Where active nests are present, vegetation removal will not occur until after the young have fledged, and ground-disturbing activities will not occur within 100 feet until the young have fledged.

Trail repairs and reroutes will occur along existing trails or close to existing trails and will result in a net loss or disturbance of habitat ranging from about 0.05 to 2.14 acres depending on the trail. Habitat loss will also impact small mammals such as the golden-mantled ground squirrel (*Spermophilus lateralis*), deer mouse (*Peromyscus maniculatus*), montane vole (*Microtus montanus*), least chipmunk (*Neotamias minimus*), Uinta chipmunk (*Neotamias umbrinus*), northern pocket gopher (*Thomomys talpoides*), Nuttall's cottontail (*Sylvilagus nuttallii*), and snowshoe hare (*Lepus americanus*). The impact is considered minor given that the species and their habitat are common within the park.

The NPS determined that the selected alternative may affect, but is not likely to adversely affect, the Mexican spotted owl (*Strix occidentalis lucida*), and Canada lynx (*Lynx canadensis*). The selected alternative will not occur in critical habitat for these two species. The NPS also determined that there will be no effect on any other federally listed threatened or endangered species or critical habitat. The U.S. Fish and Wildlife Service (USFWS) concurred with the park's determination on October 9, 2015.

Rerouting and repairing damaged trails, and new trails, will adversely impact wilderness character during construction, and impact wilderness from new ground disturbance and human manipulation. The use of mechanized equipment, such as chainsaws, a rock drill, a generator, and possible rock blasting, will generate unnatural sounds. Elevated noise levels from these activities will result in adverse impacts on the wilderness soundscape and qualities of natural and outstanding opportunities for solitude; however, the effects will be localized where the work is occurring, it will be intermittent, and will occur for four to five months in the summer for two to five years depending on the trail construction progress.

Unnatural sounds during trail construction from the use of a helicopter to deliver construction materials will affect a broader area. The helicopter landing zone will likely be located south of Lily Lake, with round trip flights to the Aspen Brook Trail. If the Twin Sisters Trail reroute is constructed, there will also be round trip flights to that location. The flight path to each trail is approximately 1 mile in length, and the noise footprint of the helicopter (above 50 dBA) is predicted to cover approximately 8 square miles for each flight path, depending on atmospheric

conditions, terrain, and the nature of the ground surface (i.e., rock, bare ground, or vegetation). 50 dBA is equivalent to an ordinary conversation. Elevated noise levels will result in adverse impacts on the wilderness soundscape and qualities of natural and outstanding opportunities for solitude. The effects will occur over a span of about one week during daylight hours when helicopters are used for repairing and rerouting the Aspen Brook Trail, and for restoring abandoned sections of the old trail. Similar wilderness impacts will occur if the Twin Sisters Trail reroute is constructed. Eliminating and restoring damaged trail sections and redundant informal trails will result in a beneficial effect on wilderness character by protecting and restoring the natural quality of the wilderness area.

Trail repairs and reroutes will have a beneficial effect on visitor use and experience with improved access. Adverse impacts to trail use and access are possible during trail construction and restoration work as temporary trail closures may be needed. Temporary trail closures are expected to be of short duration (5 – 10 minutes), and could occur as often as two times per day during the construction season.

Equestrian use will be restored on the Aspen Brook Trail once the reroutes and repairs have been made, and a new trail extension could be built that will also accommodate equestrian use. The Twin Sisters Trail, which has been closed in its entirety to equestrian use since the September 2013 flood, will remain closed to equestrians under the selected alternative. If the adaptive management Twin Sisters Trail reroute is constructed, equestrian use may be allowed on the trail to the extent that it was permitted prior to the September 2013 flood.

To ensure appropriate treatment of historic properties, the NPS submitted the results of cultural surveys of the project area to the State Historic Preservation Office (SHPO) in letters dated March 26, 2015 and September 9, 2015. The SHPO concurred with the park's determination on the eligibility status for several resources located within the project area. The SHPO also concurred that the proposed undertaking will have no adverse effects on historic properties with implementation of the Mitigation Measures in Appendix A. The park further consulted with the SHPO in a letter dated February 22, 2017 regarding the Aspen Brook Trail extension. In a letter dated February 28, 2017 the SHPO concurred with the park's determination of *no historic properties affected* for the Aspen Brook Trail extension.

The project will not result in the loss or destruction of significant scientific, cultural, or historical resources.

There will be no significant impacts on public health, public safety, or 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 NPS selected alternative will not violate any federal, state, or local environmental protection law.

**CONCLUSION**

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

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

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# APPENDIX A – MITIGATION MEASURES

To minimize impacts related to the selected alternative, the NPS will implement Best Management Practices (BMPs) and resource protection measures.

BMPs are primarily focused on hand construction because most of the trail work will occur in wilderness areas with limited use of mechanized equipment.

## General Measures

- The construction area limits will be clearly defined and delineated to keep ground disturbance to a minimum. No disturbance will occur beyond these limits other than protection measures for erosion/sediment control.
- All contractor employees shall attend an orientation session(s) regarding park regulations focused on minimizing impacts on resources, human health and safety, and appropriate housekeeping.
- All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project area upon project completion. Construction debris will be hauled from the park to an appropriate disposal location.
- The park has developed a comprehensive list titled, “Construction Stipulations for Native Plant Conservation and Restoration,” to help minimize impacts on natural resources. These measures cover all aspects of trail construction, including implementation, construction limits, equipment, clearing and grubbing, excavation, topsoil salvage, vegetation salvage, rough grading, finish grading, imported aggregate and soil, placement of topsoil, erosion control, seeding, and mulching and will be incorporated into contract documents. The park will also apply the 2006 Vegetation Restoration Management Plan (NPS 2006) to guide revegetation activities.

## Floodplains

- Staging, materials and equipment will be located outside of the floodplain to the extent possible.
- Sustainable design principles, such as the use of stepping stones in streams or bogs or the use of foot logs to span small streams to minimize impacts on the natural environment, will also be used.

## Water Resources

- BMPs will be used to minimize erosion and the introduction of sediments to aquatic habitat during and after construction.
- All vehicle and equipment 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.
- A spill prevention and response plan that regulates the use of hazardous and toxic materials, such as fuels and lubricants for construction equipment, will be prepared.

## 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.

- Field surveys for migratory bird nests and cavities will be conducted prior to ground-disturbing activities and vegetation removal during the breeding and nesting season. Where active nests are present, vegetation removal will not occur until after the young have fledged, and ground-disturbing activities will not occur within 100 feet until the young have fledged.
- Construction activity in montane meadow habitat with elk rutting activity will be avoided from September 15 to October 31. If rutting elk are not observed near the project work area, work may proceed.

### Vegetation

- Disturbance to vegetation will be avoided as much as possible and contained to as small a trail corridor as possible.
- All equipment entering the park will be cleaned and pressure washed to remove foreign soil, vegetation, and other materials that may contain nonnative seeds or vegetation.
- All disturbed areas will be revegetated with native species. Revegetation plantings, if necessary, will use native species from genetic stocks originating in the park. Revegetation efforts will focus on recreating 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.
- In an effort to avoid introduction of exotic plant species, no hay bales will be used. Hay often contains seed of undesirable or harmful invasive exotic plant species. Therefore, on a case-by-case basis, the following materials may be used for any erosion control that may be necessary: rice straw, straws determined by the NPS to be weed-free (e.g., Coors barley straw or Arizona winter wheat straw), cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales.
- Nonnative invasive plant infestations near disturbed areas will be treated on a yearly basis for a minimum of three years following project completion.

### Soils

- Disturbance to soils will be contained to as small a footprint as possible while meeting project objectives.
- Topsoil will be salvaged, stored in approved areas, and used to restore temporarily disturbed areas following construction or to restore abandoned trail alignments.
- To minimize the amount of ground disturbance, staging and stockpiling areas will be placed on previously disturbed land where feasible, or on tarps with the ground restored after removal.

### Wilderness

- Non-mechanized and non-motorized trail construction techniques will be used to the greatest extent practicable. For trail improvement activities in wilderness where motorized equipment or mechanical transport are approved, the activities will be timed to minimize impacts on park users and resources. Time of day, day of week, and season will be considered. A signed Minimum Requirements Decision Guide is in place for this project (June 27, 2016).

### Cultural Resources

- Known archeological sites and isolated occurrences will be avoided during construction.
- 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 Colorado State Historic Preservation Office and the Advisory Council on Historic Preservation, 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.
- The park will ensure that all personnel who work on the trail are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Personnel will also be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction. Equipment traffic will be minimized in the area of the site. Equipment and materials staging areas will also avoid known archeological resources.

### Visitor Use and Experience

- Signs, press releases, and other communication methods will be used to inform visitors about construction, trail access, and any trail closures or detours during construction.
- Barriers or signs will be used to deter visitor travel on abandoned trail segments to allow restoration of these areas.

### Air Quality and Soundscapes

- Fugitive dust generated by construction will be controlled as necessary by spraying water on the construction site.
- Any blasting will conform to NPS-65, Explosives Use and Blasting Program (1991), specifications. All blasting charges will use the minimum amount necessary to accomplish the task. All blasting will be used to shatter, not distribute, any material.
- 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 two minutes when not in use.

### Public Health, Safety, and Park Operations

- Warning signs will be installed at the Twin Sisters Trailhead kiosk and on the trail at the north and south sides of the landslide warning visitors that the trail crosses a landslide area.
- Appropriate barriers and barricades will be used to clearly delineate work areas and provide for safe visitor travel near construction areas.
- Construction workers will wear appropriate Personal Protective Equipment (PPE) such as hard hats, gloves, and goggles to protect themselves from construction and/or natural

hazards. Visitors will be allowed to travel through construction zones when the project lead deems that areas are safe for travel.

- 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 park values, regulations, and appropriate housekeeping.
- Upon completion of the Twin Sisters Trail repairs and installation of the erosion-control measures, the park will obtain baseline trail metrics for the repaired trails, such as the width of the trail tread, extent of current erosion, and current area of ground disturbance. The same trail metrics will be collected during routine trail maintenance going forward, and compared to the baseline data. If substantial change is evident at routine five-year maintenance intervals (e.g., the trail is substantially wider, erosion and ground disturbance are substantially greater), and cannot be repaired or stabilized with proven trail construction and maintenance techniques, the park may seek federal funding to construct the trail reroute that was described in the EA.

# APPENDIX B
# NON-IMPAIRMENT FINDING

NPS Management Policies (2006) require analysis of potential effects to determine whether actions will impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park 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 will be present for the enjoyment of these resources or values. An impact on any park resource or value may, but does not necessarily, constitute an impairment, but an impact will 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 will 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 will have significant effects.
Impairment findings relate directly to park resources and values; the Organic Act does not consider visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations to be park resources or values so they can be dismissed from impairment review. Those topics remaining to be evaluated for impairment include soils and vegetation; wildlife, including special status species; and wilderness.

**Soils and Vegetation**

The selected alternative will require localized vegetation clearing and earthwork to reestablish the tread and install water bars, drainage features, and erosion-control measures. The work will be conducted with a combination of hand tools and mechanized equipment. Most of the improvement work will be conducted within the existing footprint of the trail segments that will be retained, although vegetation removal and earthwork will be necessary for new trail segments and for trail reroutes, such as rerouted sections of the Aspen Brook Trail. New trail segments include the Twin Sisters Trail where it crosses the landslide, and the Aspen Brook Trail extension within the park. These trails will have a localized adverse impact on soil and vegetation productivity over the life of the trail. Because of the limited area of new disturbance (approximately 1.4 acre net), and implementation of drainage and erosion-control measures, adverse impacts on soils and vegetation will be minor, with a beneficial effect from improved trail stability over the life of the trails, and from revegetation and stabilization of redundant informal trails and abandoned trail sections. Specific soil and vegetation disturbances are summarized below.

To reroute and repair the Aspen Brook Trail, about 1.18 acre of vegetation and soil will be altered. Alterations to develop the rerouted segments of trail include vegetation removal and manipulation of the exposed soil to create the trail alignment. In some locations soil will be removed, and in other locations soil and trail tread material will be imported to establish final trail grades. For the Aspen Brook Trail extension, there will be about 0.96 acre of vegetation and soil alteration through trail clearing within the park boundary. These losses will be offset by 0.77 acre of existing exposed soil revegetated and protected.

For the Twin Sisters Trail, there will be minimal impacts to vegetation and soil by using the existing informal trails and eliminating and restoring redundant informal trails. About 0.05 acre of vegetation will be removed, and the soil will be altered to improve the trail, and about 0.03 acre of soil and vegetation will be restored.

For the Twin Sisters Trail adaptive management alternative, about 0.63 acre of vegetation will be removed along the new alignment, and the soil will be altered to establish the reroute. About 0.10 acre of soil and vegetation will be restored after revegetation and stabilization of about 2,200 feet of abandoned trail segments and informal trails.

The selected alternative will not result in an impairment of soils and vegetation because a substantial portion of the area of impact is in areas of previous disturbance due to the establishment of informal trails by visitors, or due to flood related ground disturbance. The soils and vegetation impacted are common in the park. Also, abandoned trails and informal trails will be revegetated and stabilized to reduce erosion and soil loss.

**Wildlife, Including Special Status Species**

New trail construction will impact wildlife from increased noise and human presence during four to five months of annual construction over two to five years, depending on construction progress. In the Aspen Brook Trail vicinity, construction activity in montane meadow habitat with elk rutting activity will be avoided from September 15 to October 31. If rutting elk are not observed near the project work area, work may proceed. The riparian corridor along Aspen Brook provides suitable habitat for amphibians, including the state-listed endangered boreal toad. Potential impacts on boreal toads and other amphibians, such as boreal chorus frogs and tiger salamanders, will be avoided by constructing the bridge crossing outside of the breeding season and spanning the drainage with a bridge. Also prior to starting work, biologists will conduct searches for boreal toad tadpoles upstream and downstream in the project area for the bridge crossing.

Trail repairs and reroutes will occur along existing trails or close to existing trails and will result in a net loss or disturbance of habitat ranging from about 0.05 to 2.14 acres depending on the trail. Habitat loss will also impact small mammals such as the golden-mantled ground squirrel (*Spermophilus lateralis*), deer mouse (*Peromyscus maniculatus*), montane vole (*Microtus montanus*), least chipmunk (*Neotamias minimus*), Uinta chipmunk (*Neotamias umbrinus*), northern pocket gopher (*Thomomys talpoides*), Nuttall's cottontail (*Sylvilagus nuttallii*), and snowshoe hare (*Lepus americanus*). The impact is considered minor given that the species and their habitat are common within the park.

Trail projects will occur in, or near, habitat for the following species listed as threatened and endangered under the Endangered Species Act: Mexican spotted owl (*Strix occidentalis lucida*), and Canada lynx (*Lynx canadensis*). However, The NPS determined, and the US Fish and Wildlife Service concurred on October 9, 2015, that the proposed project may affect, but is not likely to adversely affect, the Mexican spotted owl and Canada lynx. The selected alternative will not occur in critical habitat for either of these species and there will be no effect on other federally listed species. The U.S. Fish and Wildlife Service (USFWS) concurred with the park's determination on October 9, 2015.

The selected alternative will not result in an impairment of wildlife, including special status species, because a substantial portion of the area of impact is in areas of previous disturbance due to the establishment of informal trails by visitors, or due to flood related ground disturbance. The impacted wildlife habitat is common within the park. Also, abandoned trails and informal trails will be revegetated and stabilized to reduce erosion and soil loss.

**Wilderness**

The selected alternative involves various levels of trail repairs, rerouting, construction of a new trail extension, and restoration of abandoned trail sections in wilderness. These activities will impact the untrammeled, undeveloped, and natural character of wilderness, along with opportunities for solitude or primitive and unconfined recreation.

Trail construction on the Aspen Brook and Twin Sisters Trails will be done with the use of limited mechanized equipment and the use of pack stock. The use of chainsaws, a rock drill, a generator, and possible rock blasting will generate unnatural sounds during trail repairs and construction. Elevated noise levels from these activities will result in adverse impacts on the wilderness soundscape and qualities of natural and outstanding opportunities for solitude; however, the effects will be localized where the work is occurring, it will be intermittent, and will occur for four to five months in the summer for two to three years depending on the trail

construction progress. Construction of the Twin Sisters Trail reroute will also require the use of mechanized equipment, and the impact on wilderness character will be similar to the selected alternative.

Unnatural sounds during trail construction from the use of a helicopter to deliver construction materials will affect a broader area. The helicopter landing zone will likely be located south of Lily Lake, with round trip flights to the Aspen Brook Trail. If the Twin Sisters Trail reroute is constructed, there will also be round trip flights to that location. The flight path to each trail is approximately 1 mile in length, and the noise footprint of the helicopter (above 50 dBA) is predicted to cover approximately 8 square miles for each flight path, depending on atmospheric conditions, terrain, and the nature of the ground surface (i.e., rock, bare ground, or vegetation). 50 dBA is equivalent to an ordinary conversation. Elevated noise levels will result in adverse impacts on the wilderness soundscape and qualities of natural and outstanding opportunities for solitude. The effects will occur over a span of about one week during daylight hours when helicopters are used for repairing and rerouting the Aspen Brook Trail, and for restoring abandoned sections of the old trail. Similar wilderness impacts will occur if the Twin Sisters Trail reroute is constructed.

Trail rerouting and construction of the Aspen Brook Trail extension will cause human disturbance of new areas within the wilderness, impacting the untrammeled, undeveloped, and natural character of wilderness, along with opportunities for solitude or primitive and unconfined recreation; If the Aspen Brook Trail extension is implemented, about 0.96 acre of vegetation will be removed and the soil will be altered within the park boundary.

For the Twin Sisters Trail, improvements will be completed on about 575 feet of informal trail to connect existing sections of undamaged trail. This impact will be offset by protecting about 0.03 acre due to the restoration of about 1,110 feet of existing trail and elimination of redundant informal trails.

If the Twin Sisters Trail adaptive management alternative is implemented, the trail reroute will require construction of about 2,730 feet of new trail, which will cause human disturbance of new areas within wilderness, impacting the untrammeled, undeveloped, and natural character of wilderness, along with opportunities for solitude or primitive and unconfined recreation. About 0.63 acre of soils and vegetation along the new alignment will be altered. About 2,200 feet of the existing trail will be reclaimed and informal trails will no longer be used, protecting about 0.10 acre of soil from erosion and other use-related impacts.

Eliminating and restoring damaged trail sections and redundant informal trails will result in a beneficial effect on wilderness character by protecting and restoring the natural quality of the wilderness area.

For the selected alternative, adverse impacts on wilderness character will be minor, with a beneficial effect from active or natural revegetation and restoration of informal trails. Native materials will be used for reconstructed trail sections and new trail sections to protect the undeveloped qualities of the wilderness character, wherever possible.

If the Twin Sisters Trail adaptive management alternative is implemented, the trail reroute will result in moderate impacts to wilderness character from construction related noise impacts and additional human disturbance in wilderness, as described above.

The selected alternative, and the adaptive management alternative, will have permanent adverse effects on wilderness qualities of undeveloped and natural character. However, trail access along Aspen Brook and to the summit of Twin Sisters existed before Rocky Mountain National Park was established, and providing for the freest use of the park for recreation purposes is stated in the park's enabling legislation. There will be shorter term impacts to wilderness character during the four- to five-month annual construction period occurring over two to five years total. Reestablishing these two trails will have a beneficial effect on primitive recreation over the life of the trail. Thus, the selected alternative will not impair designated wilderness.

**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 park resources and values from implementation of the selected alternative.

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The EA was made available for public review and comment during a 30-day period originally ending April 25, 2016. However, the park extended the comment period until April 29, 2016 to allow additional time for public input. A public meeting was held in Estes Park on April 13, 2016 to present results of the EA and answer questions.

During the public comment period, seven (7) commenters specifically addressed the Aspen Brook or Twin Sisters trails.

According to NPS policy, substantive comments are those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

Substantive comments on the *Reroutes and Repairs to Flood Damaged Trails Environmental Assessment* (EA) for the Aspen Brook and Twin Sisters trails focused primarily on equestrian use.

After reviewing the draft Finding of No Significant Impact, the park Leadership Team requested that four sections of the EA be rewritten for clarity. The revised text is displayed here, and was incorporated into the EA.

<u>Aspen Brook Trail</u>

Page 16, Alternative B – Establish and Maintain a Travel Route (NPS Preferred Alternative)

Paragraph 4 was replaced with the following:

*Because establishing and maintaining a travel route is not necessary for administration of designated wilderness in the park and has been requested by outside entities, non-federal funding is required for construction and ongoing maintenance of the 4,200 foot trail extension. Within the authorized boundary of the park, trail construction and ongoing maintenance will be done by NPS using non-federal funds. Recorded trail easements or rights-of-way across all private lands between Spur Highway 66 and the park boundary, and a written agreement between the NPS and all partners will be required prior to implementation. The NPS will require the entire trail extension both inside and outside the park to be open and available to the public, including equestrian use, if it is constructed.*

Page 16, Paragraph 5 was replaced with the following:

*Adaptive Management – If funding, recorded easements or rights-of-way, and a written agreement to extend the Aspen Brook Trail do not occur within five years of the approval date of a FONSI, the trail extension will not be built, and informal trails in that area of the park will be obliterated, and the area will be restored to natural conditions to the extent practicable.*

<u>Twin Sisters Trail</u>

Page 18, Alternative B – Establish and Maintain a Travel Route (NPS Preferred Alternative)

Paragraph 1, last two sentences, were replaced with the following:

*An assessment of informal trails once the improvements have been completed will document the current conditions of the trails to be retained and their associated impacts. The data from the study will be used to help inform the decision process for the adaptive management alternative.*

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Page 20, Paragraphs 2 and 3 were replaced with the following:

*Adaptive Management – Upon completion of the trail repairs and installation of the erosion-control measures, the park will obtain baseline trail metrics for the repaired trails, such as the width of the trail tread, extent of current erosion, and current area of ground disturbance. The same trail metrics will be collected during routine trail maintenance going forward, and compared to the baseline data. If substantial change is evident at routine five-year maintenance intervals (e.g., the trail is substantially wider, erosion and ground disturbance are substantially greater), and cannot be repaired or stabilized with proven trail construction and maintenance techniques, the park may seek federal funding to construct a trail reroute. If federal funding is obtained, the reroute will be approximately 2,730 feet in length. The new trail alignment will not cross the landslide path and will be located north of the landslide on a stable side slope with multiple switchbacks connecting undamaged portions of the original Twin Sisters Trail. The new trail will be constructed according to park trail design standards. The trail tread will be about 3 feet wide, with trail clearing limits approximately 6 feet wide by 10 feet high. With this new trail section in place, equestrian use may be allowed on the Twin Sisters Trail. For commercial liveries, use of the Twin Sisters Trail will be governed by the concessions contracts in place at the time. Abandoned sections of the existing trail (about 2,200 feet) will be obliterated, stabilized, and revegetated.*

In addition, because a helicopter will be used to deliver construction materials to the Aspen Brook Trail, and to the Twin Sisters Trail if the reroute is constructed, further research and analysis was conducted to more fully describe the impacts to wilderness character. The EA was amended by inserting a new paragraph after the 2nd paragraph on page 72:

*Unnatural sounds during trail construction from the use of a helicopter to deliver construction materials will affect a broader area. The helicopter landing zone will likely be located south of Lily Lake, with round trip flights to the Aspen Brook Trail. If the Twin Sisters Trail reroute is constructed, there will also be round trip flights to that location. The flight path to each trail is approximately 1 mile in length, and the noise footprint of the helicopter (above 50 dBA) is predicted to cover approximately 8 square miles for each flight path, depending on atmospheric conditions, terrain, and the nature of the ground surface (i.e., rock, bare ground, or vegetation). 50 dBA is equivalent to an ordinary conversation. Elevated noise levels will result in adverse impacts on the wilderness soundscape and qualities of natural and outstanding opportunities for solitude. The effects will occur over a span of about one week during daylight hours when helicopters are used for repairing and rerouting the Aspen Brook Trail, and for restoring abandoned sections of the old trail. Similar wilderness impacts will occur if the Twin Sisters Trail reroute is constructed.*

Responses to comments received during the public review period follow.

**Comment 1**: A commenter asked what existing trail(s) will connect to the restored Aspen Brook Trail.

**Response**: At the north end of the Aspen Brook Trail there are no existing formal trails that connect. The NPS decision includes the potential for other entities to provide funding for the NPS to construct and maintain a trail inside the park that will connect to a trail outside the park. Upon completion, the new trail will provide a connection between the Aspen Brook Trail and Spur Highway 66.

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**Comment 2**: A commenter recommended fine tuning the informal trails that were established by park visitors on the north side of the landslide following the 2013 flood, and not use a cross-slide route.

**Response**: NPS did consider retaining the informal trails on the north side of the landslide, but they are very steep and susceptible to erosion. The informal trails on the south side of the landslide are better suited for ongoing trail use and maintenance. The Twin Sisters Trail is located in designated wilderness where NPS is charged with maintaining wilderness character. The qualities of wilderness character are untrammeled, undeveloped, natural, and opportunities for experiencing solitude or primitive and unconfined recreation. NPS will install warning signs at the Twin Sisters Trailhead kiosk and on the trail on the north and south sides of the landslide warning visitors that the trail crosses a landslide.

**Comment 3**: A commenter supported the Aspen Brook Trail extension to Spur Highway 66, but did not want the trail extension open to horses.

**Response**: Because the Aspen Brook Trail has been open and available for equestrian use in the past, the reroutes and repairs will be done to accommodate equestrian use. If the Aspen Brook Trail extension is built (with funding by others), NPS has stated that the trail extension in its entirety must be open and available for public use, including equestrian use. Commercial livery use of the Aspen Brook Trail and the trail extension within the park will be governed by the park's Commercial Horse Use Plan. The plan will be revised in the next two years, and the public will have an opportunity to comment on the plan.

**Comment 4**: A commenter observed that Wind River Ranch also received great damage to the trails on its property from the mudslide on Twin Sisters. Wind River Ranch was able to rebuild its trails quickly and return them to use across the mudslide area. The Aspen Brook and Twin Sisters Trails both need to be restored for continued horseback use and hiking use, and this work needs to be expedited given the heavy public use of these trails.

**Response**: The section of the Twin Sisters Trail in the park that was destroyed by the landslide includes five switchbacks and is in steeper terrain than the trail location on Wind River Ranch. The cross slope on the ranch is approximately 10 percent, while the cross slope on the Twin Sisters Trail is approximately 20 percent. Due to the extensive damage to the Twin Sisters Trail caused by the landslide, and the potential for future earth movement, the decision was made early in the planning process not to restore the trail in its former location.

The NPS selected alternative for the Twin Sisters Trail is described elsewhere in this Finding of No Significant Impact (FONSI). With the selected alternative, equestrian use will not be permitted on the Twin Sisters Trail.

If construction of the reroute is warranted in the future, equestrian use may be permitted on the Twin Sisters Trail. For commercial liveries, use of the Twin Sisters Trail will be governed by the concessions contracts in place at that time.

The NPS selected alternative for the Aspen Brook Trail is to reroute and repair the existing trail using federal funds starting in FY17 or FY18 as described elsewhere in this FONSI. Upon completion of the work, the Aspen Brook Trail will be open for equestrian use. If the Aspen Brook Trail extension is constructed with funding provided by others, it too will be open and available for equestrian use. For commercial liveries, use of the Aspen Brook Trail and the trail extension will be governed by the concessions contracts in place at that time. The nearby Storm Pass Trail currently remains open and available for equestrian use.

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**Comment 5**: A commenter stated that Wind River Ranch does not agree with any proposed abandonment proposals by RMNP – Wind River Ranch acquired its easement rights to these trails by adverse possession and has maintained its easement on all of the trails and in a notorious and continuous manner since the mid-1880s.

**Response:** Federal lands are immune from adverse possession.

The EA did evaluate an adaptive management strategy where the Aspen Brook Trail would be abandoned and restored to natural conditions if the necessary easements and agreements were not in place to develop the trail extension to Spur Highway 66. Based on the analysis presented in the EA, and after carefully considering public input, the NPS selected alternative is to reestablish the Aspen Brook Trail from its intersection with the Storm Pass Trail to the historic Wigwam Tea Room starting in FY17 or FY18. Federal funding will be used to reestablish the trail. The trail will be open to equestrian use once the repairs have been completed. For commercial liveries, use of the Aspen Brook Trail and the proposed trail extension will be governed by the concessions contracts in place at that time.

As explained elsewhere in this FONSI, the Twin Sisters Trail was damaged by the landslide to the extent that it is no longer suitable for equestrian use, and the entire trail has been closed to equestrian use since September 2013. The NPS selected alternative is to maintain the foot trail that was established through and around the slide area following the flood. The trail is not suitable for equestrian use due to the steep grade and minimal clearance between trees and from overhead tree branches.

If construction of the reroute is warranted in the future, federal funding could be obtained to accomplish the work, and equestrian use may be permitted on the Twin Sisters Trail. For commercial liveries, use of the Twin Sisters Trail will be governed by the concessions contracts in place at that time.

**Comment 6**: A commenter objected to language describing Twin Sisters and Aspen Brook Tail as "Dead End" trails. Just because a trail goes to a beautiful destination and back does not make it a dead end trail.

**Response**: The term “dead end trail” does not appear in the EA, but that phrase was used during the public meeting. Based on the analysis presented in the EA, and after carefully considering public input, the NPS selected alternative is to reestablish the Aspen Brook Trail from its intersection with the Storm Pass Trail to the historic Wigwam Tea Room starting in FY17 or FY18. Federal funding will be used to accomplish the work. The trail will be open to equestrian use once the repairs have been completed. For commercial liveries, use of the Aspen Brook Trail and the proposed trail extension will be governed by the concessions contracts in place at that time.

**Comment 7**: A commenter stated that the Park is being discriminatory when informal trails formed by hikers are going to be allowed for future hiker use on the Twin Sisters Trail, but horseback use will not be allowed.

**Response**: Several trails were badly damaged during the September 2013 flood, including trails open to equestrian use. Once repairs are completed, trails that were previously open to equestrian use will once again be available. The two exceptions are the Twins Sisters and MacGregor Falls trails, which sustained major damage and will not be reopened to equestrian use. The Twin Sisters Trail is not suitable for equestrian use due to the steep grade and minimal clearance between trees and from overhead tree branches. If construction of the Twin Sisters

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Trail reroute is warranted in the future, federal funding could be obtained to accomplish the work, and equestrian use may be permitted on the Twin Sisters Trail. For commercial liveries, use of the Twin Sisters Trail will be governed by the concessions contracts in place at that time.

The park is not being discriminatory when considerable time, effort, and funding has gone into reestablishing equestrian use on numerous other trails that were damaged during the flood, including trails in Wild Basin, the North Longs Peak Trail, the North Fork Trail, Ypsilon Lake Trail, the Lawn Lake Trail, the Aspen Brook Trail, and the proposed Aspen Brook Trail Extension. In addition, equestrian use is permitted on numerous other trails in the park that were not damaged during the flood.

**Comment 8**: A commenter noted that the Estes Park Liverymen's Association agreed years ago to donate 50 cents a trail rider to the Park to go towards trail repairs. These funds should go towards having all of these trails being promptly rebuilt.

**Response**: The current fee structure for commercial liveries does not collect 50 cents per rider, but is based on gross receipts. The franchise fee the park does collect from the liveries is insufficient to cover ongoing maintenance of the existing livery trails throughout the park. Therefore, the fund cannot cover the cost of repairing the flood damaged trails.

**Comment 9**: A commenter stated that if the route of the trails is to be altered, Wind River Ranch and the EP Liverymen's Association must agree to the new routes and be consulted on the new trails so that proper planning for horses is in the design and their construction.

**Response**: Local liveries are authorized to use trails in the park via concessions contracts that are managed under the overarching Commercial Horse Use Management Plan (1994). The concessions contracts are the only binding legal agreements between RMNP and the liveries and provide the sole authorization for concessioners to use trails within the national park.

The NPS has been committed to working with all stakeholders and the public regarding the appropriate range of alternatives for addressing damage to trails caused by catastrophic funding in 2013. However, NPS retains its own decision making authority and is not bound to enter into an agreement with any outside entity regarding trail routes, or design and construction standards. RMNP has specific design, construction, and maintenance standards for equestrian trails, and the park utilizes these same trails for mounted ranger patrols and to deliver supplies and materials via pack stock.

RMNP anticipates that it will continue to consult with various parties, regarding the proposed trail extension from the Aspen Brook Trail to Spur Highway 66, because it will require additional agreements to take effect.

**Comment 10**: A commenter stated that the liveries have the legal right to the use of these trails by horse back and it is the park's responsibility to maintain and to provide the continued access to these beautiful areas and historic areas. If we agree to changes to the routes of the trails, the park needs to provide the liveries with an updated documented legal easement showing changes to the trail and the continuing easement rights on these trails.

**Response**: See response to comment 9. Three of the five trails that were open to equestrian use pre-flood, and were heavily damaged during the flood, will be available for equestrian use once trail repairs have been completed. These are the Lawn Lake, Ypsilon Lake and Aspen Brook trails. In addition, the NPS decision includes a new trail extension to connect the Aspen Brook Trail to Spur Highway 66. If constructed with funding provided by others as proposed, this trail will also be available for equestrian use. These trails will be available to commercial

liveries in accordance with the concessions contracts in place at the time. Because the NPS decision does not accommodate equestrian use on the Twin Sisters Trail, concessions contracts will not include the Twin Sisters Trail. If the adaptive management trail reroute alternative has been implemented, concessions contracts issued at that time could include the Twin Sisters Trail.