

National Park Service
U.S. Department of the Interior



Denali National Park and Preserve
Interior Region 11 – Alaska

FINDING OF NO SIGNIFICANT IMPACT POLYCHROME AREA IMPROVEMENTS

Recommended:

BROOKE MERRELL Digitally signed by BROOKE MERRELL
Date: 2022.03.07 15:33:11 -09'00'

Brooke Merrell, Acting Superintendent
Denali National Park and Preserve

Date

Approved:

MARY CREACHBAUM Digitally signed by MARY CREACHBAUM
Date: 2022.03.10 15:29:50 -09'00'

M. Sarah Creachbaum, Regional Director
Interior Region 11 – Alaska, National Park Service

Date

1 INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) has prepared an Environmental Assessment (EA) in cooperation with the Federal Highway Administration (FHWA) to examine alternative actions and environmental impacts associated with proposed improvements to the Polychrome Area in Denali National Park and Preserve (DNA), Denali Borough, Alaska. The statements and conclusion reached in this Finding of No Significant Impact (FONSI) are based on the documentation and analysis provided in the EA (NPS 2022a), Errata (Appendix A), Response to Comments (Appendix B), and associated decision file. To the extent necessary, relevant sections of the EA are referenced below. Except as noted, references are provided in the EA.

Two alternatives were analyzed in the EA: 1) the No Action Alternative, under which the NPS will not undertake repairs and construction at the Pretty Rocks Landslide, Bear Cave Landslide, Perlite Landslide, and rockfall areas; and there will be no vehicle access through the Polychrome area to the 47 miles of road west of the landslide indefinitely; and 2) the Pretty Rocks Bridge and Polychrome Road Improvements alternative (the NPS preferred alternative), which will restore access through the Polychrome area by constructing a bridge over the Pretty Rocks Landslide (approximately Mile 45.4). This alternative will also involve undertaking risk reduction measures for the Perlite Landslide (approximately Mile 45.3) and rockfall hazards near the proposed bridge, constructing a retaining wall at the Bear Cave Landslide (approximately Mile 44.8), and undertaking risk reduction measures in surrounding rockfall areas.

The project description analyzed in the EA includes the greatest extent of probable actions and quantity estimates that will have the greatest possible impacts to allow for project design flexibility by the design-builder during implementation. The design-build contractor may reduce these impacts as the design progresses.

The NPS preferred alternative was selected after careful analysis of resource impacts, consultation with tribes and Alaska Native Claims Settlement Act Corporations (ANCSA), and review of stakeholder and public comments. The NPS will implement the selected alternative (proposed action/NPS preferred alternative) to restore reliable access to the Park Road west of the Pretty Rocks Landslide and reduce safety hazards in the Polychrome area.

This FONSI is available on the NPS Planning, Environment, and Public Comment (PEPC) website at: <http://parkplanning.nps.gov/polychrome>.

2 SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

2.1 SELECTED ALTERNATIVE

The NPS has selected the Pretty Rocks Bridge and Polychrome Road Improvements alternative (Alternative 2 [NPS 2022a, 12]) for implementation. This alternative will fulfill a critical need as outlined in the Polychrome Area Improvements EA (NPS 2022a, 3). The project was broken into two phases for budgetary and scheduling reasons, with Phase I addressing the highest priority sites.

2.1.1 Phase I

Excavation. Approximately 125,000 to 150,000 cubic yards of material will be excavated. Excavation of the rock will be accomplished with heavy equipment and blasting. Areas east of the landslide—

including the “rock knob” on the south side of the road and the slope on the north side of the road—will be excavated to provide space for bridge construction and equipment.

The slope above the west abutment will be excavated to provide space for construction of the bridge and to accommodate a slight road realignment for vehicles turning on and off the bridge. A portion of this excavation area (less than 1 acre) will be in designated wilderness. The excavation could include a bench cut into the rock partway down the rock face to serve as a rockfall catchment area. The excavation could also include a road-level rockfall ditch. Periodic maintenance of the bench using heavy machinery would be needed, a small portion of which would be in wilderness. Excavation may also require heavy equipment to drive up the vegetated slope from the western edge of the project area, which will require temporary access of motorized vehicles through designated wilderness. Measures will be implemented to protect the vegetation from damage by heavy machinery and tracked vehicles. If feasible, equipment may be placed for excavation by helicopter, eliminating the need to drive over vegetation in wilderness. Actions are intended to produce rough irregular rock faces that resemble the surrounding natural rock outcrops while maintaining the integrity of the finished rock cut face to minimize rockfall and rock instability.

Material Placement. After swell is accounted for, the volume of material that will need to be disposed of will be slightly larger than the volume that was excavated. Excavated material that is of sufficient quality for use in road maintenance will be trucked off site and stored in existing DENA material storage locations (such as the Toklat pit) for use on future projects. The majority of the excavated material will be disposed of on site on the slope below the road. Approximately 10 acres of that area will be in wilderness and 0.6 acre will be in streams or wetlands. Some vegetation toward the toe of the landslide will be covered by excavated material. Excavated material will consist of rock and soil similar to what currently exists at the site and will be expected to look similar to existing rock/soil at the landslide. Motorized equipment will be used to move material off the roadway and into the material placement area, which will require temporary use in wilderness.

Road Realignment. On the west side of the bridge, a short section of the road will be realigned slightly to create space for an appropriate turning radius for vehicles entering and exiting the bridge. The realignment will also include shifting an additional section of road away from the eroding road edge. The realigned road corridor will be entirely outside of designated wilderness and the wilderness boundary will not shift with this realignment.

Retaining Walls. A retaining wall near the east abutment of the Pretty Rocks Bridge will be installed on the slope above the road to reduce the risk of rockfall from the excavated slope. A combination of earthwork, horizontal drains, and possibly a retaining wall will also be required to address the Perlite Landslide on the east side of the Pretty Rocks Landslide. These structures will be outside of wilderness.

Rockfall Risk Reduction. Rockfall areas above the road to the east and west of Pretty Rocks Landslide will be addressed using a combination of rock scaling (i.e., the removal of loose or potentially unstable rocks), installation of rock bolts or dowels, and/or the creation of rockfall ditches. Rock scaling will be designed to match existing surroundings and will be conducted by workers on ropes and performed by hand using prybars; no blasting will be necessary. Installation of rock bolts will include 1-inch diameter bolts or dowels drilled into the surface and subsurface rock of the cliff face to secure hazardous rocks and will be designed to match surroundings by either staining the bolts or cutting them flush with the rock and grouting over them. Rock scaling and installation of rock bolts will occur in wilderness and will be repeated every 5 to 10 years, or as needed to reduce additional rockfall hazards.

Pretty Rocks Bridge Construction. A bridge will be installed spanning the Pretty Rocks Landslide site. The bridge will be approximately 400 feet long; will have an overall width of approximately 24

feet; and will be supported by two abutments, one on each end. Abutments will be steel pilings with ground anchors, which will be drilled or driven into the bedrock and fortified with concrete. The bridge will be one lane and traffic will stop at existing pullouts at either end, yielding to vehicles on the bridge.

A temporary platform will be constructed near the east abutment for use as a bridge assembly location. The platform will extend 150 feet from the south side of the road. The bridge components will be trucked to the site and stored at the temporary platform until assembly. A large crane will be used to assemble the bridge on site. Temporary platform construction will require some pile driving and concrete placement, with several dozen piles needed.

After bridge construction, the temporary platform will be removed, the staging areas will be recontoured, and the road will be restored to its historic road width where possible. Space will be preserved at both abutments for future maintenance needs.

The landscape of this area is changing due to climate change causing permafrost thaw. These changing conditions may affect the longevity of the design (approximately 50 years). Currently, the overall synergy between climate change and effects on the engineered solution is unknown and unpredictable. Additional maintenance projects to retrofit the bridge may be needed in response to climate change. If needed, future design considerations to address the possibility of thawing permafrost under the bridge abutments (such as the use of thermal siphons) will be researched and evaluated to ensure longevity.

Traffic. Road access through Polychrome is not anticipated during Phase I. For safety reasons, only construction traffic will be allowed in the Pretty Rocks area during most construction activities. Incidental traffic may be facilitated as conditions permit. Visitor transportation will continue to be limited to Mile 43 of the Park Road and buses will turn around at the East Fork Bridge or the East Fork cabin site. Access to Kantishna inholdings will be primarily via air until the bridge is completed.

2.1.2 Phase II

Retaining Wall. At the Bear Cave Landslide area, Phase II will include excavation of materials and construction of a retaining wall on the south side of the Park Road. The retaining wall will be buried approximately 30 to 60 feet deep, run approximately 1,000 feet along the road to stabilize the road edge, and will potentially require several hundred piles. The north side of the Park Road will be temporarily widened to allow traffic to pass around the construction site. Road work will also include subsurface and surface drainage improvements. The retaining wall and road widening/improvements will not be in the wilderness area. After construction of the wall, the area on the north side of the road will be recovered and the road will be returned to the existing roadway centerline and width. Disturbed areas will be revegetated to match the surrounding area. The retaining wall will be minimally visible from the surrounding area, including from backcountry areas south of the road. Equipment and materials for Bear Cave work will be stored at existing staging areas in DENA.

Rockfall Risk Reduction. Rockfall areas above the road to the east and west of the Bear Cave Landslide will be addressed during Phase II using a combination of rock scaling, installation of rock bolts or dowels, and/or the creation of rockfall ditches. Rock scaling will be designed to match existing surroundings and will be conducted by workers on ropes and performed by hand using prybars; no blasting will be necessary. Installation of rock bolts will include 1-inch diameter bolts or dowels drilled into the surface and subsurface rock of the cliff face to secure hazardous rocks and will be designed to match surroundings by either staining the bolts or cutting them flush with the rock and grouting over them. Rock scaling and installation of rock bolts will occur in wilderness and will be repeated every 5 to 10 years, or as needed to reduce additional rockfall hazards.

Traffic. Road access through the Polychrome area is anticipated during Phase II. Visitor transportation to destination points west of Pretty Rocks and regular traffic to Kantishna inholdings will be allowed. There may be some traffic delays due to single-lane use or temporary restrictions at the project sites. There could also be scheduled nighttime road restrictions for work to occur. Because rock scaling and bolting cannot occur in the dark due to safety concerns, road restrictions will be necessary during some daylight hours as well.

2.2 RATIONALE

The NPS selected the Pretty Rocks Bridge and Polychrome Road Improvements alternative for implementation because it best meets the purpose and need to restore access to the western portion of the Park Road beyond the Pretty Rocks Landslide and protect the safety of visitors and staff by reducing geohazard risks along the Polychrome section of the road (NPS 2022a, 3). There will be adverse impacts to DENA resources as a result of the construction activities; however, the NPS has determined these impacts are not significant. The project results in beneficial long-term safety impacts by providing reliable access to visitors, staff, and inholders.

2.3 MITIGATION AND MONITORING

Best management practices (BMPs) and mitigation measures will be used during implementation of the selected alternative to minimize, reduce, or eliminate impacts of project activities and to protect park resources and visitors. These practices and measures will be incorporated into the project implementation documents and plans. Resource protection measures that will be undertaken during project implementation are described in the EA (NPS 2022a, 22-23) and are summarized in Table 1. The impact analyses in the “Environmental Consequences” section of the EA (NPS 2022a, 22-49) were performed assuming that these BMPs and mitigation measures will be implemented as part of the selected alternative (NPS 2022a, 22).

Table 1. Proposed Mitigation Measures

Resource Area	Proposed Mitigation Measures
Socioeconomics	Construction workers would be housed in DENA at previously disturbed locations.
Visual Resources	The bridge would be designed to be nonreflective and in a neutral color to reduce contrast with surroundings. The width of the bench cut along the west abutment excavation area would be minimized and have a rough texture. The retaining walls at the east end of the bridge and Perlite Landslide would resemble natural materials and blend into the landscape, if possible. Excavation and rock scaling would produce rough, irregular rock faces that resemble the surrounding natural rock. Revegetation of disturbed areas would be implemented with plants salvaged from the project area and native seeds. Shielding on construction lighting would be required to eliminate light trespass.
Visitor Use and Experience	Dust management measures would be employed.

Resource Area	Proposed Mitigation Measures
Noise and Soundscape	<p>Broadband amplitude-adjusting backup alarms would be used on construction vehicles to reduce the noise intensity and audible distances.</p> <p>Vibratory hammers would be used for pile driving, instead of impact hammers, whenever possible.</p> <p>The driving surface of the bridge would be a closed metal deck topped with a high friction surface to reduce the noise of vehicles on the bridge.</p> <p>Approach pavement would be included on both ends of the bridge to limit the noise of vehicles coming onto the bridge and driving over the bridge.</p>
Wildlife	<p>If ground disturbing activities are conducted during the bird breeding and nesting season, measures would be implemented to avoid disturbance to active nests.</p> <p>All construction activities would comply with the Migratory Bird Treaty Act and Executive Order 13186.</p> <p>Construction would halt when certain wildlife are within limits established in the Code of Federal Regulations Section 13.920 to reduce disturbance.</p> <p>Nest deterrents would be included in the bridge design.</p> <p>Vehicles that encounter wildlife on the road or proposed bridge would be required to comply with NPS regulations, which give wildlife the right of way.</p>
Wetlands and Vegetation	<p>Dust management measures would be employed.</p> <p>Revegetation of disturbed areas would be implemented with plants salvaged from the project area and native seeds.</p> <p>Stormwater and erosion control best management practices would be implemented to protect wetlands and waters during construction, including vegetation buffers and erosion control fencing.</p> <p>Measures would be implemented to protect the vegetation from damage by heavy machinery and tracked vehicles.</p> <p>Construction vehicle and equipment inspection would be done prior to entering DENA to ensure invasive/nonnative plant species are not introduced.</p> <p>Wetland areas within 100 feet of the project area would be flagged and avoided. A 0.01 acre wetland area above the road in the Phase I project area would be avoided.</p>
Cultural Resources	<p>The above measures to reduce visual impacts would be implemented.</p> <p>Mitigation for adverse effects would include creating a video of the book “Snapshots From the Past” and conducting at least 10 oral history interviews with road users.</p> <p>Rock bolts would be designed to match surroundings by cutting them flush with the rock and either staining the bolts or grouting over them.</p> <p>The road realignment on the west side of the proposed bridge would be consistent with the curvilinear design of the existing road.</p> <p>The historic road width (16 to 24 feet) would be restored once construction is complete.</p>
Wilderness	<p>Wilderness areas within 100 feet of the established project area would be identified and avoided.</p> <p>Measures would be implemented to protect the wilderness areas from damage by heavy machinery and tracked vehicles.</p> <p>The above measures to reduce visual impacts, as well as impacts to visitor experience, soundscape, wildlife, and vegetation in wilderness areas would be implemented</p>

3 POTENTIALLY AFFECTED ENVIRONMENT AND DEGREE OF THE EFFECTS

The selected alternative will not have a significant adverse impact on the human environment. This conclusion is based on the following examination of the relevant significance criteria defined in 40 CFR Section 1501.6. The NPS reviewed each of these criteria given the environmental impacts described in the EA (NPS 2022a, Chapter 3).

3.1 POTENTIALLY AFFECTED ENVIRONMENT

Endangered Species Act. In accordance with the Endangered Species Act of 1973, the NPS requested an official list of the federally threatened and endangered species and designated critical habitats that may occur in the Polychrome Area Improvements project area from the U.S. Fish and Wildlife Service (USFWS). On October 1, 2021, the USFWS provided a list that confirmed no federally listed species or designated critical habitats occur in the project area (NPS 2022a, Appendix B). Therefore, the selected alternative will not adversely affect any listed threatened or endangered species or critical habitat.

National Historic Preservation Act (NHPA). The cultural resources identified in the vicinity of the project area (NPS 2022a, 44 - 46) include portions of the Mount McKinley National Park Road Historic District (HEA-00517/ HEA-00429) and Cultural Landscape, the East Fork Patrol Cabin Site (HEA-00218) and Cultural Landscape; the East Fork Bridge; and a historic archeology site (HEA-00323) that consists of a collection of historic metal cans that may be associated with the building of the road. The Park Road Historic District and Cultural Landscape are listed on the National Register of Historic Places (National Register). The selected alternative will result in long-term changes to the historic character of the Polychrome section of road, which is considered an adverse effect per the NHPA and its implementing regulations (36 CFR Part 800). While this impact is adverse, the selected alternative will keep the road maintained and accessible to the public and enable continued access to rural viewsapes, which is the key historic association that makes the Park Road eligible for the National Register and will minimize long-term effects to the historic property. The NPS developed a Memorandum of Agreement with the Alaska State Historic Preservation Officer (SHPO) and consulting parties (NPS 2022b) to mitigate the adverse effects through the creation of a video based on the book “Snapshots From the Past” and through oral history interviews with road users. The selected alternative will not impact the East Fork Patrol Cabin Site and Cultural Landscape or the East Fork Bridge because they are not within the project area and the construction will not be visible from those sites. The historic archeology site (HEA-00323) will be documented prior to Phase II and periodic archeological monitoring and documentation may occur during construction. If cultural resources or items protected by the Native American Graves Protection and Repatriation Act are discovered during project implementation, all project-related activities in the vicinity of the discovery will be stopped and the park archaeologist will be notified immediately. In consultation with the State Historic Preservation Officer and other consulting parties, the NPS will determine a course of action per 36 CFR Part 800.13.

3.2 DEGREE OF EFFECTS

As described in the EA, (NPS 2022a, 22-49), the selected alternative has potential beneficial and adverse impacts—both short and long term—associated with geology, socioeconomics, visual resources, visitor use and experience, noise and soundscape, wildlife, wetlands and vegetation,

cultural resources, and wilderness. There are no wild and scenic rivers, ecologically critical areas, or floodplains in the project area (NPS 2022a, 11).

General construction measures and BMPs to proactively minimize environmental impacts and mitigation measures to further reduce impacts are described in the EA (NPS 2022a, 22-23). No significant impacts to resources that will require analysis in an environmental impact statement were identified.

The selected alternative does not establish a precedent for future actions with significant effects nor does it represent a decision in principle about a future consideration. All elements of the selected alternative are common management actions conducted at national parks.

In the context of determining significance, “controversial” refers to circumstances where a substantial dispute exists as to the environmental consequences of the proposed action and does not refer to the existence of opposition to a proposed action, the effect of which is relatively undisputed (43 CFR Part 46.30). Throughout the EA process, no environmental impacts associated with the selected alternative have been identified as controversial. The NPS conducted internal and external outreach and provided two public comment periods (October 2021 and January 2022) and a comment period for the NHPA Assessment of Effect (November through December 2021). Comments were solicited from agencies, tribes, Alaska Native Claims Settlement Act (ANCSA) corporations, and the public. The NPS has not received substantive comments disputing the environmental consequences disclosed in the EA (NPS 2022a, 22-49).

As analyzed in the EA, the anticipated impacts to the human environment 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 the selected alternative are understood based on NPS experience with similar projects, with a few exceptions described below.

The potential long-term impact to wildlife from noise as vehicles travel over the newly constructed steel bridge is unknown. Noise emanating from the bridge as vehicles drive across is projected to be relatively unchanged from current conditions. Because wildlife are already accustomed to the sound of vehicles driving along the Park Road, noise impacts from the bridge to wildlife species and their habitat are not expected to be significant. Therefore, the selected alternative is anticipated to have no long-term adverse effects on Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) protected avian species (NPS 2022a, 38). As described in the EA, it is unknown how many piles will be necessary and the final quantity of piles will affect the total duration of noise generation in the study area (NPS 2022a, 35). The specific timing, frequency, and duration of potential blasting and pile driving activities are not known at this time. However, BMPs and mitigation will be used to lessen disturbance to wildlife, reduce the indirect impact of noise on the visitor experience, and reduce noise introduced to the soundscape (NPS 2022a, 22). Therefore, the NPS finds that the selected alternative will not result in significant adverse impacts.

Geology. Bridge construction, excavation, rock scaling, and rock bolt installations at the Pretty Rocks Landslide site will permanently alter existing rock formations and modify the topography of slopes surrounding the roadbed (NPS 2022a, 27). Disposal of excavated rocky material on the lower portion of the Pretty Rocks Landslide will result in a permanent increase in the accumulated material on the slope, which may continue to migrate downslope on top of the active slide. Unstable slopes above the road will be excavated/modified to less steep conditions and loose rocks will be removed or secured, which will temporarily stabilize slopes and reduce rockfall. Similarly, the installation of retaining walls will slow down or delay localized erosion and landslide movement. However, construction of the bridge over the Pretty Rocks Landslide will allow the landslide to pass underneath and associated processes to continue unimpeded, indefinitely. Rock scaling, which may need to be repeated every 5 to 10 years for maintenance, will further reduce the risk of rockfall and

increase safety by removing rock and sediment (NPS 2022a, 27). Therefore, there will be an overall long-term beneficial impact to geology. The selected alternative will not result in significant adverse impacts on geology.

Socioeconomics. The existing condition includes restricted access west of Mile 43 due to the Pretty Rocks Landslide, which is adversely affecting the local, state, and regional economy due to reduced income generated by Kantishna businesses, and park concessioners. However, this impact exists regardless of which alternative is selected and the effects to socioeconomics will be short term under the selected alternative. General mitigation measures and BMPs are described in Section 3.1 of the EA (NPS 2022a, 22). This project will incorporate these mitigation measures and BMPs, including the identification of areas where construction workers will be housed. After completion of Phase I of the selected alternative, there will be a long-term beneficial impact to socioeconomics because reliable access to Kantishna and other popular visitor destinations west of the project area will be restored. Implementation of the selected alternative will not result in significant adverse impacts on socioeconomics.

Visual Resources. During construction, impacts to visual resources will be short term but adverse due to the inconsistency of construction activities in areas where the focus is generally on the natural landscapes rather than human development. The selected alternative will also have a long-term impact on visual resources in the project area and surrounding viewpoints (NPS 2022a, Appendix D, 16-20). The new bridge, bench cut, and retaining walls will introduce bold straight lines and smooth textures that contrast with the existing landscape; however, mitigation measures to blend features into the landscape will reduce contrast (NPS 2022a, 22 and 32). Material placed below the road will appear larger in size and extent than the existing landslide material on the slope, but similar in color. Excavation and rock scaling will produce rough irregular rock faces that resemble the surrounding rock, and the retaining wall at Bear Cave will be partially buried and therefore minimally visible. Mitigation measures and BMPs that will include design features to reduce contrast and blend the excavation area and rock scaling to the natural surroundings are described in Section 3.1 of the EA (NPS 2022a, 22 and 32). This project will incorporate these mitigation measures and BMPs by reference, and the implementation of the selected alternative will restore reliable access and enable visitors enjoyment of the views from the western 47 miles of the Park Road, resulting in a long-term beneficial impact. With the incorporation of mitigation measures and BMPs, the selected alternative will not result in significant adverse impacts on visual resources.

Visitor Use and Experience. The current road closure at Mile 43 impacts the roughly 234,000 visitors that typically access the areas west of Pretty Rocks Landslide each year. However, this restriction of access will occur regardless of which alternative is selected and will be short term under the selected alternative. Short-term impacts as a result of construction of the selected alternative will include increased noise, increased exposure to dust, increased views of construction activities, and decreased wildlife viewing opportunities, which may decrease visitor satisfaction. General mitigation measures and BMPs are described in Section 3.1 of the EA (NPS 2022a, 22). This project will incorporate these mitigation measures and BMPs by reference, including dust management measures that will be employed during construction. Alterations to visual resources in the project area could either positively or negatively affect visitor experience, but mitigation measures to reduce long-term visual resource impacts will reduce visitor experience impacts as well. After completion of Phase I, there will be a long-term beneficial impact to visitor experience because reliable access to the 47 miles of Park Road and popular visitor destinations west of the project area will be restored (NPS 2022a, 34). Based on incorporation of mitigation measures and BMPs, the selected alternative will not result in significant adverse impacts on visitor use and experience.

Noise and Soundscape. The selected alternative will generate short-term changes to the existing acoustic environment because construction vehicles, earth-moving equipment, and power tools will

generate noise during construction. General mitigation measures and BMPs are described in Section 3.1 of the EA (NPS 2022a, 22). This project will incorporate these mitigation measures and BMPs by reference (such as broadband amplitude-adjusting backup alarms on construction vehicles and the use of vibratory hammers for pile driving when practicable), which will reduce the short-term impacts associated with construction. Design features will mitigate and reduce the noise of vehicles on the bridge following construction, and noise levels in the park generated by use of the improved road are expected to return to conditions prior to the road closure in 2021 (NPS 2022a, 36). Through the use of mitigation measures and BMPs, selected alternative will not result in significant adverse impacts on noise and soundscape.

Wildlife. The selected alternative has the potential to impact a variety of wildlife species in and around the project area. Short-term adverse impacts will include displacement caused by increased human activity, dust, and construction noise (especially from drilling, pile driving, and blasting). Mitigation measures and BMPs for wildlife are described in Section 3.1 of the EA (NPS 2022a, 23). This project will incorporate these mitigation measures and BMPs by reference, limiting displacement and disturbance by temporarily ceasing construction activities if bears, moose, caribou, sheep, or wolves approach within established limits. The Pretty Rocks Landslide is in a historic golden eagle nesting territory that was occupied as recently as 2021 and construction activities could potentially result in loss of productivity or nest, which will be mitigated through a permit with the USFWS. There may also be short-term adverse impacts beyond the immediate project area as a result of increased construction traffic along the first 43 miles of the Park Road.

Long-term adverse impacts of the project will include localized habitat loss due to excavation and placement of excavated material on vegetation below the road. The potential need for periodic rock scaling activities (anticipated every 5 to 10 years) may create recurring disturbances to wildlife, especially Dall's sheep, but may be less than the current maintenance activities. Overall, impacts to wildlife are anticipated to affect a few individuals in the project area; there are no anticipated adverse population-level impacts from the selected alternative (NPS 2022a, 37-39). By implementing mitigation measures and BMPs, the selected alternative will not result in significant adverse impacts on wildlife.

Wetlands and Vegetation. Wetlands in the project area will be avoided to the greatest extent practicable, but the selected alternative will directly and permanently impact up to 0.60 acre of low- to moderate-functioning wetlands and approximately 1,000 linear feet of low- to moderate-functioning streams (NPS 2022a, 42-43). Mitigation measures and BMPs for wetlands and vegetation are described in Section 3.1 of the EA (NPS 2022a, 23). This project will incorporate these mitigation measures and BMPs by reference, employing dust management measures; revegetating disturbed areas with plants salvaged from the project area and native seeds; using vegetation buffers and erosion control fencing; protecting vegetation from damage by heavy machinery; inspecting equipment for invasive/nonnative species; and flagging and avoiding wetland areas. Although the selected alternative will affect wetlands on the toe of the Pretty Rocks Landslide, it will not alter the eventual outcome of permanent wetland disturbance from landslide activity.

Up to 14 acres of vegetation will be permanently impacted from excavation and placement of material. The vegetation in the affected areas is commonly found throughout the park and is not endangered or protected so loss of this vegetation will not impact DENA's ecosystem (NPS 2022a, 43). The area that will be disturbed by the temporary road widening in the Bear Cave Landslide area will be revegetated with plants salvaged from the project area and native seeds. Because mitigation measures and BMPs will be implemented to reduce these impacts, the selected alternative will not result in significant adverse impacts on wetlands and vegetation.

Cultural Resources. The Park Road Historic District and Cultural Landscape are listed on the National Register and the reroute, excavation, change of the setting, and introduction of

incompatible elements in the selected alternative will result in long-term changes to the historic character of the Polychrome section of road, which is considered an adverse effect per the NHPA and its implementing regulations (36 CFR Part 800). Mitigation measures and BMPs are described in Section 3.1 of the EA (NPS 2022a, 23). This project will incorporate these mitigation measures and BMPs by reference to keep the road realignment on the west side of the Pretty Rocks bridge consistent with the curvilinear design of the existing road and restoring the historic road width (16 to 24 feet) once construction is complete. While this impact is adverse, the selected alternative will ensure that the road is maintained and accessible to the public and enable continued access to rural views, which is the key historic association that makes the Park Road eligible for the National Register and will minimize long-term effects to the historic property (NPS 2022a, 46). The NPS developed a Memorandum of Agreement with the Alaska SHPO and consulting parties to mitigate the adverse effects through the creation of a video based on the book “Snapshots From the Past” and through oral history interviews with road users (NPS 2022b). Through the use of mitigation measures, BMPs, and execution of the Memorandum of Agreement, the selected alternative will not result in significant adverse impacts on cultural resources.

Wilderness. The selected alternative will require the use of motorized vehicles and equipment in wilderness, as well as potential helicopter use in wilderness, which will cause short-term adverse impacts. The selected alternative will also include the permanent installation of rock bolts or dowels in wilderness, excavation in wilderness, the placement of excavated material in wilderness, and periodic use of motorized vehicles in wilderness for maintenance, which will have long-term adverse impacts to wilderness. These actions will degrade the untrammeled, undeveloped, and natural qualities of wilderness character and temporarily decrease opportunities for solitude; however, impacts will be reduced through mitigation measures and BMPs described in Section 3.1 of the EA (NPS 2022a, 22-23). This project will incorporate these mitigation measures and BMPs by reference. Wilderness areas within 100 feet of the established project area will be identified and avoided to protect the wilderness areas from damage by heavy machinery and tracked vehicles. Mitigation measures and BMPs incorporated to reduce effects to visual impacts, visitor experience, soundscape, wildlife, and vegetation implemented will also minimize impacts to wilderness. Variations on actions to further minimize impacts to wilderness are described in Alternative 3 of the Wilderness Act Minimum Requirement Analysis (NPS 2022a, Appendix E, 24). In addition, the completed project will result in long-term beneficial impacts because it will restore access to the full extent of the Park Road, including access to opportunities for solitude or primitive and unconfined recreation (NPS 2022a, 49). With the use of the mitigation measures and BMPs, the selected alternative will not result in significant adverse impacts on wilderness.

3.3 EFFECTS ON PUBLIC HEALTH AND SAFETY

For safety reasons, only construction traffic will be allowed in the Pretty Rocks area during most construction activities (NPS 2022a, 17). Road access through the Polychrome area is not anticipated during Phase I because the construction area will be closed to the public; therefore, noise and dust will only be an impact to wildlife, vegetation, soundscape, and wilderness (including a few backcountry users). Visitor traffic will be allowed through the project area during Phase II with delays and temporary restrictions possible (NPS 2022a, 17). General mitigation measures and BMPs that this project will incorporate by reference are described in Section 3.1 of the EA (NPS 2022a, 22). During Phase II, visitors will pass through the area; therefore, dust and noise will impact public visitors (NPS 2022a, 33). However, these impacts are short term and limited to a small period of time and space when visitors are passing through the area during construction. Following construction, users of the Park Road will have safer and reliable access through the Polychrome area. The selected alternative will result in a long-term beneficial impact on public health and safety by reducing

geohazards in the Polychrome Area. With the implementation of mitigation measures and incorporation of BMPs to reduce traffic congestion, slow speed, and dust management, construction activities will not adversely affect public health and safety.

3.4 EFFECTS THAT WOULD VIOLATE FEDERAL, STATE, TRIBAL, OR LOCAL LAW PROTECTING THE ENVIRONMENT

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

4 PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

4.1 CIVIC ENGAGEMENT

Civic engagement was conducted during the fall of 2021 to inform the public about the Polychrome Area Improvements, hear public concerns, answer questions, solicit comments, and request input on the proposed project for preparation of the EA. A press release announcing public meetings and comment period was distributed by DENA on September 29, 2021, which initiated the 30-day public comment period on PEPC. On September 24, 2021, a postcard was mailed to post office box holders in Healy, Denali Park, and Cantwell, Alaska, informing them of the public meetings; flyers were also posted in post offices in the region and stakeholders were informed by press release.

Virtual public meetings were held on October 13 and 14, 2021, due to safety considerations surrounding the COVID-19 pandemic. These meetings included a presentation that described the background of the Pretty Rocks Landslide; geological hazards in the project area; the purpose and need for the project; a description of the two alternatives; and information about the EA process. Meetings concluded with an invitation to the attendees to ask questions to NPS staff and submit comments on the EA process. A total of 108 people attended the public meeting on October 13 and 84 people attended the meeting on October 14. The NPS was also invited to and presented on the project at numerous other meetings (e.g., stakeholder groups, nonprofit organizations, and state and local governments) during the civic engagement period. Substantive comments raised during the civic engagement period were considered by the DENA in the development of the EA.

4.2 EA PUBLIC COMMENT PERIOD

The NPS released the Polychrome Area Improvements Environmental Assessment for public review from January 13, 2022 to February 13, 2022. The public review period was announced via postcard, press release, and advertised on the NPS PEPC website. Virtual public meetings were held on January 18 and 26, 2022. These meetings included a presentation that described the background of the Pretty Rocks Landslide; the purpose and need for the project; a description of the two alternatives; and information about the NEPA process. Meetings concluded with an invitation to the attendees to ask questions to the NPS staff and submit comments on the process. A total of 42 people attended the public meeting on January 18 and 34 people attended on January 26 (attendance numbers include project team members). Twenty-two submittals were received during the public comment period. Seventy-seven percent of the submittals (i.e., 17 submittals) were received from individuals or organizations in Alaska. In addition to the general public, the NPS received comments from the State of Alaska, one ANCSA corporation, businesses, inholders, and nongovernmental organizations. Comments were received on 18 topics, including alternatives, geologic resources, wildlife, subsistence, and socioeconomics. No substantive comments were received that resulted in

changes to the assessment of impacts or increases in the level of adverse impacts acknowledged in the EA.

4.3 AGENCY, TRIBAL, AND ANCSA CORPORATION CONSULTATION

Endangered Species Act, Section 7. In accordance with the Endangered Species Act of 1973, the NPS requested an official list of the federally threatened and endangered species and designated critical habitats that may occur in the Polychrome Area Improvements Project area from USFWS. On October 1, 2021, the USFWS provided a list and the NPS determined that no federally listed species or designated critical habitats occur in the project area. Due to this finding, no informal or formal ESA Section 7 consultation with USFWS is warranted for this project.

Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. Measures will be implemented to avoid disturbance to active nests and all construction activities will comply with the MBTA (16 U.S. Code Sections 703-712) and Executive Order 13186. In addition, the project will be conducted in accordance with the BGEPA (16 U.S. Code Section 668-668c) through the permitting process with USFWS. In March 2020, USFWS authorized a 2-year permit to the NPS for potential loss of productivity and nest loss from increased road maintenance activities at the Pretty Rocks Landslide during the 2020 and 2021 breeding seasons. In March 2022, the NPS received a 1-year extension for the 2022 breeding season, and later in 2022 the NPS will request a new permit for the 2023 and 2024 breeding seasons due to the continuing construction activities in the selected alternative.

National Historic Preservation Act, Section 106. In accordance with Section 106 of the NHPA, the NPS consulted with the SHPO and federally recognized tribes. In November 2021, the SHPO and 24 potential consulting parties received an NHPA Section 106 consultation letter informing them of the NHPA determination that the project will adversely affect historic properties and inviting tribes to comment on the determination as defined in 36 CFR Part 800.2(c)(2). The letter also invited tribes to participate as a consulting party on the agreement document to mitigate adverse effects. In addition, the public had 30 days to review the NHPA determination and submit comments to the NPS through the PEPC website from November 19, 2021 through December 19, 2021. No substantive comments were received; Tanana Chiefs Conference, Doyon Limited, Ahtna Incorporated, the Denali Borough, and the Denali Citizens Council responded with interest in participating in the development of the agreement document. The SHPO concurred with the adverse effect determination on December 9, 2021 and an agreement document was developed to determine mitigation actions, which will include oral history interviews and a video of the book “Snapshots From the Past.” A Memorandum of Agreement was finalized in February 2022 (NPS 2022b). While affects to historic properties are determined to be adverse under NHPA, these effects will be mitigated and are therefore not considered significant.

Tribal and ANCSA Corporation Consultation. The NPS consulted with 16 federally recognized tribes and ANCSA Native corporations, informing them of the proposed project and soliciting comments. Consultation was initiated by letters sent on July 7, 2021, with the exception of Doyon Limited, which was sent on August 10, 2021. The NPS also made follow-up phone calls to these tribes and ANCSA corporations in early August 2021 and during the development of the EA (NPS 2022a, Appendix B).

The NPS met with Doyon Limited on February 23, 2022 and will continue to consult with them throughout project implementation. If any additional information regarding ethnographic resources or traditional uses is provided, the NPS will work with the consulting parties to mitigate potential impacts to cultural resources, ethnographic resources, and traditional uses associated with any element of the project.

5 CONCLUSION

Based on the review of the facts and analyses provided in the EA (NPS 2022a) and associated decision file, the NPS has selected the Pretty Rocks Bridge and Polychrome Road Improvements alternative for implementation. The conclusion of no significant impact is based on the analysis compiled from a combination of scientific data and professional judgment from NPS staff and documented in the EA. The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

6 REFERENCES

- NPS. 2006. Management Policies 2006. U.S. Department of the Interior, National Park Service, Washington, D.C.
- NPS. 2022a. Denali National Park and Preserve, Polychrome Area Improvements Environmental Assessment. 2022. <http://parkplanning.nps.gov/polychrome>
- NPS. 2022b. Memorandum of Agreement Between the National Park Service, Denali National Park and Preserve and the Alaska State Historic Preservation Officer Regarding the Polychrome Area Improvements Project and the East fork Area Improvements and Use Project, Denali National Park, February 18, 2022.
- NPS. 2022c. Statement of Findings for Protection of Wetlands (Executive Order 11990), DENA Polychrome Area Improvements, Denali National Park and Preserve. 19p.
- NPS. 2016. Procedural Manual 77-1: Wetland Protection. U.S. Department of the Interior, Washington D.C.
- USACE. 2007. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0). ERDC/EL TR-07-24, Washington D.C.: Wetlands Regulatory Assistance Program.
- USACE. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, Washington D.C.: Wetlands Research Program.

APPENDIX A ERRATA INDICATING TEXT CHANGES TO THE POLYCHROME AREA IMPROVEMENTS EA

Together with the FONSI and the EA, the following errata and responses to comments describe the NPS's final decision for the Polychrome Area Improvements EA. The errata clarify and amend the EA in response to questions, comments, or concerns raised by the public and/or NPS staff during the development of this project. This new information is not substantial and does not lend the need of a new public comment period. Original text from the EA is included below to provide context and present changes. Removed text is shown in ~~strike-throughs~~ and new text is shown as underlined.

ERRATA

Corrections or revisions to an EA are in response to substantive comments received during the public comment period from January 13 through February 13, 2022. The *National Park Service NEPA Handbook* defines substantive comments as those that: 1) question, with reasonable basis, the accuracy of the information in the NEPA document; 2) question, with reasonable basis, the adequacy of the environmental analysis; 3) present reasonable alternatives other than those presented in the NEPA document; and/or 4) cause changes or revisions in the proposal.

The NPS received 22 pieces of correspondence during public and agency review of the EA. No comments warranted development and detailed analysis of an additional alternative or reconsideration of alternatives that were considered but dismissed. No changes were made in the assessment of environmental consequences that increased the level of adverse impacts.

These errata will be attached to the Polychrome Area Improvements EA (NPS 2022a) published in January 2022 and are intended to correct or clarify statements in the EA other than typographical and minor editorial errors. These modifications did not change the assessment of impacts in the EA.

CHAPTER 2: ALTERNATIVES

Alternatives, Section 2.2 page 12

Alternative 2 is the NPS's preferred action and ~~environmentally~~ preferred alternative.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Approach to Analysis, Section 3.1.1 General Approach, Table 3-1 Proposed Mitigation Measures, page 22

Visitor Use and Experience, Dust management measures will be employed ~~during Phase II~~.

Cultural Resources, Mitigation for adverse effects will include creating a video of the book "Snapshots From the Past" and conducting at least 10 oral history interviews with road users. ~~is included in the amended Denali Park Road Programmatic Agreement.~~

Cultural Resources, Rock bolts will be designed to match surroundings by cutting them flush with the rock and either staining the bolts or grouting over them.

Visitor Use and Experience, Section 3.5.2.1 Environmental Consequences, No Action Alternative, page 33

Under the No Action Alternative, the NPS would close the Park Road at Mile 43 indefinitely due to road failure. The road failure would affect the visitor experience of the roughly 234,000 visitors who access the park's western areas annually. The points of interest and trails in in the first 43 miles of the Park Road may be more heavily used since access beyond that point will be limited.

Clarification of a Section 3.5.2, second paragraph, following second sentence, page 33 and correction of section on page 34

Section 3.5.2.2 Environmental Consequences, Alternative 2: Pretty Rocks Bridge and Polychrome Road Improvements

3.5.2.2 Reasonably Foreseeable Future Actions change to 3.5.2.3 Reasonably Foreseeable Future Actions

Visitor Use and Experience, Section 3.5.2.2 Environmental Consequences, Alternative 2: Pretty Rocks Bridge and Polychrome Road Improvements, page 33

Construction for Alternative 2 is estimated to take place in 2022 through 2024. Under Phase I, the temporary closure of the Park Road to visitor traffic west of Mile 43 would result in impacts similar to those described under the No Action Alternative, but they would persist for only a short duration (approximately 1 to 2 years). The points of interest and trails in in the first 43 miles of the Park Road may be more heavily used since access beyond that point will be limited. The temporary closures are not likely to result in long-term visitor use changes because access would be restored west of Mile 43 once Phase I is complete.

Cultural Resources, Section 3.9.2.2 Environmental Consequences, Alternative 2: Pretty Rocks Bridge and Polychrome Road Improvements, page 46

As determined in consultation with the Alaska State Historic Preservation Officer (SHPO), tribes (as defined by the NHPA), ANCSA Corporations, and other consulting parties, mitigation for the adverse effect(s) would be addressed through the NPS's development of an amendment to the existing Denali Park Road Programmatic Agreement Between the National Park Service, Denali National Park and Preserve and the Alaska State Historic Preservation Officer Regarding Routine Maintenance, Repair, Operations, Bridge and Culvert Replacements, Geohazard Monitoring, and Emergency Maintenance on the Denali Park Road Corridor, executed between the NPS and the SHPO August 2020. A list of those contacted to be Consulting Parties along with example letters sent is provided in Appendix B.

CHAPTER 4: CONSULTATION AND COORDINATION

Tribal Consultation, Section 4.3, page 51 changes to 4.3 Tribal and ANCSA Corporation Consultation

The NPS will continue to consult with the tribes and ANCSA Corporations who have expressed interest in continued consultation throughout the EA process and project implementation.

APPENDIX A: ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT SECTION 810(A) SUBSISTENCE—SUMMARY EVALUATION AND FINDINGS

APPENDIX A, PAGE 3, FOURTH PARAGRAPH

ANILCA authorizes use of some motorized surface transportation methods (e.g., motorboats, snowmachines, and other means of surface transportation traditionally employed for such purposes by local residents) for subsistence activities in DENA ~~only if these methods have been traditionally employed.~~

APPENDIX B RESPONSE TO PUBLIC AND AGENCY COMMENTS

On January 13, 2022, the NPS released the Polychrome Area Improvements EA for public review and comment. The EA was available for public and agency review until February 13, 2022. The NPS accepted comments through the NPS's online PEPC system, verbally at the public meetings, and via email.

A total of 22 submittals were received during the public review period from the public and the State of Alaska, one Native Regional Corporation, businesses, inholders, and nongovernmental organizations. All correspondences will be maintained in the project decision file. The 22 submittals contained 298 comments. A comment is a portion of text within a submittal that addresses a single subject or issue. Comments were received on 18 topics, including alternatives, geologic resources, wildlife, subsistence, and socioeconomics.

Responses to public and agency comments typically address substantive comments that were received during the public review period. The *National Park Service NEPA Handbook* defines substantive comments as those that:

- 1) question, with reasonable basis, the accuracy of the information in the NEPA document;
- 2) question, with reasonable basis, the adequacy of the environmental analysis;
- 3) present reasonable alternatives other than those presented in the NEPA document; or
- 4) cause changes or revisions in the proposal.

Although none of the correspondences were substantive, 21 responses were identified as being of high importance to the public or needing clarification and are summarized below.

1. **Comment Summary:** Several commenters indicated that alternatives to rock scraping/scaling should be considered, including potentially decreasing the frequency of planned rock scraping/scaling activities. They noted that, historically, frequent rock scraping/scaling has not been required at the site and many areas along the Park Road have steep slopes that would also require rock scraping if that is the preferred technique to address rockfall. Commenters also felt that there was not compelling evidence that rock scaling was necessary or successful at the Toklat Bluffs site, which made them doubt the effectiveness of the technique.

Response: Rocks falling onto roadways is hazardous; and is considered hazardous by the NPS and FHWA. Rock scaling is described in the EA (NPS 2022a, 15 and 19). Rock scaling is commonly used by contractors to remove unstable or loose rock above construction areas to protect the safety of workers, especially when blasting is used for excavation as the ground vibrations will cause rockfall. In addition, if left unaddressed during construction, rockfall will impact and damage the bridge. The NPS and the FHWA will consider lessons learned from previous projects about the implementation of scaling when designing future projects.

Options to rock scaling, including rockfall barriers and draped rockfall protection mesh, were considered in the Polychrome Pass Project Delivery Plan (FHWA 2020) and made available to the public with the release of the EA at <https://highways.dot.gov/federal-lands/projects/ak/nps-dena-10-49>). These options were removed during preliminary discussion because they were in conflict with NPS policies for managing the visual landscape of the corridor.

DENA is participating in the Unstable Slope Management Program (USMP), which inventories and assesses the condition of unstable slopes, tracks unstable slope events, assesses risk, and performs benefit-cost analysis on ranked unstable slopes. Of the over 140 unstable slope identified in the USMP survey, the Pretty Rocks Landslide was the site

with the highest score, and therefore represents the highest relative risk/hazard to the Denali Park Road.

2. **Comment Summary:** Several commenters requested that the No Action Alternative should have included analysis of rudimentary bypass of the slide area that could support the minimum traffic necessary for maintenance of the facilities west of the project area. This could include access during construction providing inholder access and potentially allowing professional drivers (buses) to shuttle visitors west of the project area during construction. Commenters also stated that many road projects take longer than planned, which would increase impacts to visitor experiences if no access is permitted during construction.

Response: If no action is taken to restore road access to the west district of the park, further planning would be needed to determine if NPS roads and facilities west of the Polychrome area would be maintained, abandoned, or restored to a natural state. The NPS acknowledges that the Park Road closure will impact annual road maintenance west of the Pretty Rocks Landslide and access to inholdings and is working to restore reliable access to these areas.

During Phase I construction, the existing Park Road across the landslide would be minimally reconstructed for construction use only. For safety reasons, only construction traffic would be allowed in the Pretty Rocks area during most construction activities. Due to the rapid deterioration of the road and the threat posed by geological hazards, the safety of employees, contractors, concessionaires, and travelers cannot be guaranteed until substantial work is done on the road and its surroundings in the Polychrome area.

3. **Comment Summary:** One commenter stated that the true "no-action" alternative would be to maintain the conditions at the site, which would be to continue to import fill to the slide area in an effort to maintain access. They concluded that this should have been analyzed as part of the EA. Another commenter requested that, as a part of the No Action Alternative analysis, the EA include the total budget spent from 2017 to 2022 on hauling fill material to the project area to maintain access, how much of that material is now unrecoverable, and what the projected costs would be to continue to import fill to maintain access.

Response: The purpose and need (NPS 2022a, 3) describes how, as of September 2021, the Pretty Rocks Landslide has accelerated to the point where the NPS is no longer able to safely maintain the road. Information is provided in the purpose and need regarding amounts of material placed during repairs and daily maintenance until this no longer became sustainable in 2021. An analysis of maintaining the conditions at the site and continuing to import fill to the slide area in an effort to maintain access was not conducted because this is no longer a reasonable alternative.

4. **Comment Summary:** Two commenters requested analysis of an additional alternative in the EA that would entail Removing the Upper Landslide at the Pretty Rocks area and realigning the road on solid rock. They stated that the anticipated amount of material to be removed is overestimated and that it may not be necessary to place material as far as the toe of the glacier, that safety concerns regarding dozers below the road level are unwarranted, and that maintenance requirements might be less than the bridge alternative. They also requested that total costs for this alternative (and the preferred alternative in the EA) be included in the EA analysis.

Response: Chapter 2 of the EA (NPS 2022a, 21) describes how the NPS considered that Removing the Upper Landslide would require the excavation of a substantial portion of the mountain (approximately 1.1 million cubic yards) and reaching competent bedrock to permanently reestablish a road is unachievable and presents unreasonable operational and safety challenges (FHWA 2020, Appendix I). The alternative was therefore dismissed and not

carried forward for analysis because it was not feasible and did not fulfill the purpose and need of restoring reliable access.

5. Comment Summary: Several commenters suggested that a reroute might be more feasible, require less maintenance, and have a longer lifespan than the proposed bridge.

Response: Three routes were considered in addition to the mainline alignment: a northern alignment and two southern alignments. These three routes were considered during the development of the alternatives but dismissed and not carried forward for analysis (NPS 2022a, 19 and 20). A Value Analysis (made available to the public with the release of the EA) determined that the mainline alignment, including the bridge, would offer the greatest value to stakeholders when weighing factors such as providing safe visits; protecting natural and cultural resources; improving visitor enjoyment; improving park operations; and providing cost-effective and environmentally responsible development.

6. Comment Summary: One commenter stated that the EA does not consider normal road maintenance west of the project area. While the closed road will not receive vehicle traffic, road maintenance in the Kantishna area will be required at a minimum for inholder activities.

Response: As stated under the No Action Alternative (NPS 2022a, 12), if no action is taken to restore road access to the west district of the park further planning would be needed to determine if NPS roads and facilities west of Polychrome would be maintained, abandoned, or restored to a natural state. The NPS acknowledges that the Park Road closure will impact annual road maintenance west of the Pretty Rocks Landslide and access to inholdings and will address specific issues as they occur. Under the selected alternative, minimal maintenance of the road west of the project area (including Kantishna) will occur as needed and as possible to ensure that the road is in sufficient condition for inholder and administrative use during the road closure, and for general traffic when road access through Polychrome is restored.

7. Comment Summary: Commenters asked for various studies, drawings, or data to be considered or reported in the EA, including the following: engineering studies related to the soundness of the soils to support pile driving; maintenance required to protect the bridge from snow, ice, and earthquakes; weight of ice and snow that the bridge can withstand; ability to withstand earthquakes; amount of upper landslide that will be removed by blasting; rendering of the bench cut; the wildlife monitoring program proposed for construction; locations of eagle nests in the area; specific numbers relating to why the NPS can no longer fill the slump; more detailed information about the eliminated alternatives; plans for the removal of the temporary lane and how the NPS intended to make it match surroundings after the removal; studies of sheep population in the area; data indicating that rockfall has impacted visitor use; dimensions of the bridge approaches; more details (including length) of the piles; how the estimation of the amount of material that would need to be removed for the landslide removal alternative that was eliminated from analysis was calculated; the number of construction workers anticipated and where they would stay; and details of how heavy equipment and construction materials would reach west of the landslide.

Response: The Polychrome Pass Project Delivery Plan (FHWA 2020, Final Report and Appendix A through Appendix L), made available to the public with the release of the EA at <https://highways.dot.gov/federal-lands/projects/ak/nps-dena-10-49>, contains the studies related to the preliminary design considerations addressed in the EA and provides the information requested in many of these comments. The design of the Phase I and Phase II project elements (dimensions of bridge approach, number and length of piles) will continue to be refined throughout the design and construction process. Some elements of the project

may be changed during final design and construction, but all of these changes will keep impacts within the range disclosed in the EA. If during the design process, additional impacts are identified as warranted, The NPS and FHWA will take the proper steps in disclosing these through the NEPA process.

The EA (NPS 2022a, 15 and 16) describes excavation, material placement, road realignment, rockfall risk reductions and bridge construction and where workers would be housed. During construction, the slump at the Pretty Rocks Landslide would be filled to transport heavy equipment to the western part of the landslide. The total number of construction workers will be determined as design considerations progress. Mitigation measures for wildlife (including eagles) during construction are described in the EA (NPS 2022a). Sheep populations are currently monitored in DENA to inform wildlife management decisions.

8. Comment Summary: Several commenters requested that the project be evaluated in the context of geologic hazards along the entirety of the road, suggesting that the cost of this repair may be dwarfed by the costs associated with other high-risk geohazard areas.

Response: DENA has been working closely with the U.S. Geological Survey (USGS), FHWA, academia, contractors, and the NPS regional- and national-level geologists to identify hazards along the length of the Park Road. For example, USGS is cooperating with DENA to create the first ever surficial geology and fault map of the Park Road corridor. Also, DENA is cooperating with FHWA and national-level NPS geologists to refine the USMP, which inventories and assesses the condition of unstable slopes, tracks unstable slope events, assesses risk, and performs benefit-cost analysis on ranked unstable slopes. Through the USMP work, the NPS has identified about 140 other hazards along the road, including the landslides and rockfall areas identified for action in the EA. Academic, contractor, and regional geologist work is ongoing, but also informs the USGS map and USMP. The NPS will participate with the National Landslide Preparedness Act (2021) effort once it becomes more mature. Therefore, a broad team continues to identify and track other risks along the Park Road and believes that addressing the risks as detailed in the EA (NPS 2022a, 12) is the best use of NPS time and funds.

9. Comment Summary: Commenters questioned various elements of the project design and whether their impacts are worth the inclusion including the need for pavement approaches to the bridge; opposition to rock bolting and rock scaling; support for rock ditches in lieu of rock scaling; and opposition to a bench cut. Commenters requested additional information and justification for rock scaling.

Response: The design of the Phase I and Phase II project elements will continue to be refined throughout the design and construction process. The NPS and FHWA maintain that the projects evaluated in the EA capture actions that are necessary to effectively reduce the risk of geohazards in the area and provide reliable access to the western portion of DENA. Some elements of the project may be changed slightly leading up to and during construction, but the NPS and FHWA will work to keep any changes within the range of impacts disclosed in the EA. A description of the purpose and need for the project is provided in Section 1.2 of the EA (NPS 2022a, 3).

10. Comment Summary: Commenters urged stronger NEPA compliance, including a suggestion that the NPS should consider additional alternatives to put the project in line with case law, and that Phase II should adhere to NEPA compliance requirements after more concrete engineering is developed.

Response: Alternatives were carried forward for analysis that met the purpose and need (NPS 2022a, 3 and 12). Consistent with 40 CFR Part 1501.3(b), impacts for each resource are

described in the EA (NPS 2022a, Chapter 3) in terms of the affected area; degree of effect (i.e., extent to which the effect would result in a measurable change to the resource); short-term (generally construction-related) and long-term (operations-related) effects; and beneficial or adverse effects. Impacts are quantified wherever possible, and the analysis considers the timing and duration of the impacts. Final design decisions will be made in the future based on several factors, including on site conditions, but any impacts resulting from the final design will be within the range of impacts disclosed in the EA. If impacts from design alterations could be outside the range of impacts disclosed in the EA, then the NPS and FHWA will consider carrying out a NEPA reevaluation to review changes to the proposed project design or changing conditions.

11. Comment Summary: Some commenters expressed concern over whether the project or its costs are justified and whether the preferred alternative in the EA is an adequate long-term solution in light of the unknowns of climate change.

Response: As stated in the EA (NPS 2022a, 3-4), the NPS is no longer able to safely maintain the road through the Pretty Rocks Landslide and without constructing a bridge that section of road would remain closed indefinitely. The EA acknowledges that the landscape of this area is changing due to climate change, that changing conditions may affect the longevity of the design, and that additional future maintenance projects may be necessary (NPS 2022a, 16).

12. Comment Summary: Some commenters noted that the EA did not include any discussion of or research on specific topics they felt were important including the need for road repairs west of the Polychrome area (specifically the Eielson Bluffs), and whether the bridge could end in a different location to avoid the level of excavation presented in the EA. Some comments related to Appendix I of the FHWA Polychrome Pass Project Delivery Plan (FHWA 2020), which was made available to the public at <https://highways.dot.gov/federal-lands/projects/ak/nps-dena-10-49>, and included questions about the material placement options for Alternative 2 in the EA and material placement estimations.

Response: The length of the bridge is at the maximum for this type; a longer bridge would require additional support and therefore it would not be feasible to put the bridge in a location that would require less excavation.

The NPS is tracking about 140 areas along the Park Road that are at various levels of risk. The USMP (NPS 2016) is the tool being used to identify the highest rated hazards to take action on, including planning for some hazards to reduce risks and source funding.

The excavated material totals provided in the EA (NPS 2022a, 15) are a conservative estimate of the degree of excavation that will be necessary to complete the project. The material placement site was selected with that conservative estimate in mind.

13. Comment Summary: Commenters were concerned about access to the Kantishna area businesses and lands and want the NPS to specifically acknowledge all of the stakeholders and interested parties in the EA and its coordination efforts.

Response: The NPS will continue to inform inholders and the general public on road closures, road maintenance schedules, and transportation planning within DENA. Specific concerns of inholders at Kantishna from meetings and interviews conducted in September and October 2021 are described in the EA (NPS 2022a, Appendix C).

14. Comment Summary: There was pointed concern about the NPS's ability to fulfill the obligations under Title XI of Alaska National Interest Lands Conservation Act (ANILCA) to provide access to inholdings with the closure of the Park Road and whether the Kantishna

Airport provides enough access to these lands, which could also impact planned projects in the Kantishna area.

Response: The obligations under Title XI under ANILCA are being met. The NPS is providing adequate and feasible access to the areas to the west of the Polychrome Area via the Kantishna Airport. The NPS acknowledges the concerns expressed by stakeholders that the Kantishna Airport may not have the capacity to support full tourism activities while the Park Road is closed, and the purpose of the selected alternative is to restore road access.

15. Comment Summary: Some commenters were concerned about access to the Kantishna inholdings and requested that the NPS work with inholders to reduce and mitigate disruption of access, including the suggestion that the NPS build a temporary road for inholders to use during construction. ANILCA 1110(b) requires that the NPS provide inholders with adequate and feasible access during the road closure, and commenters felt that the Kantishna Airport does not provide adequate access for inholders due to the limitations of air travel and unpredictable weather. Commenters stated that these access limitations would cause harm to inholders and delay planned projects in Kantishna.

Response: During Phase I construction, the existing Park Road across the landslide would be minimally reconstructed for construction use only. The NPS acknowledges that the Park Road closure will impact access to inholdings (NPS 2022a, Appendix C) and is working to restore reliable access to these areas. However, due to the rapid deterioration of the Park Road and the threat posed by geological hazards, the safety of travelers cannot be guaranteed until substantial work is done on the road and its surroundings in the Polychrome area. The NPS plans to provide adequate and feasible access to inholders through the improvement projects detailed in the EA.

16. Comment Summary: Commenters asked that the NPS guarantee that the Park Road will be open during Phase II of the project and that all restrictions or lane closures will be coordinated with inholders beforehand.

Response: The NPS anticipates that the Park Road will be open during Phase II of the project (NPS 2022a, 17). The NPS will work with inholders and other road users to notify them of any restrictions or lane closures.

17. Comment Summary: One commenter requested information regarding the test holes that were dug for the 0.5 acre of wetland above the Bear Cave Landslide, and also that this disturbance be compensated for.

Response: This area was determined not to be a wetland (NPS 2022a, 42 and NPS 2022c, 16) and therefore would not require compensation. This area was surveyed during wetland delineation in August and September 2021 using the 1987 USACE Wetlands Delineation Manual (USACE 1987) and 2007 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region Version 2.0 (USACE 2007) as the primary methodology for making wetland determinations in the field, and guidance provided in Director's Order #77-1 (NPS 2016). The area immediately adjacent to the north side of the existing Park Road contains a human-made ditch with minimal vegetation and extensive disturbance. The 6- to 8-foot-deep ditch was excavated above this area in the 1990s and it subsequently severed hydrology to the area below. There is extensive disturbance to hydrology downslope of the trench and shallow permafrost on steep slopes in the Pretty Rocks Landslide and Bear Cave Slump areas, which contains an active layer that may become "soggy" during certain parts of the year. Facultative dominant vegetation was found throughout the entire project area in uplands and wetlands alike and is therefore not the key indicator of wetland status. The presence/absence of hydric soils is the key factor. No sample point was dug in the 0.5 acre

above the Bear Cave Landslide project area because it was unnecessary. Photopoints were used to document the vegetation and soils of the area above the Park Road because it had a similar aerial signature and characteristics to uplands supported by test holes. In conducting a wetland determination of this scale over many miles, strategic test hole sampling is conducted to capture aerial signatures that are the standard for wetland mapping for delineations in Alaska. It is not practical to dig a test hole in every location, which is why photopoints are used to evaluate additional areas that are related back to test holes.

18. **Comment Summary:** Commenters expressed concern about how the project activities—specifically rock scaling and blasting—would impact the views in the area and in the wilderness. Commenters suggested BMPs and changes to the project design that would minimize the appearance of human interference in the area. One commenter requested that the rock knob near the Pretty Rocks Landslide be maintained as a place for visitors to observe animals that may stop there. Commenters also requested that blasting debris be removed as soon as blasting activities are complete.

Response: Rock scaling was chosen as a risk reduction measure because it would have the least amount of visual impact while still providing safe access to the Park Road. Rock scaling would be designed to match existing surroundings and would be conducted by workers on ropes and performed by hand using prybars; no blasting would be necessary (NPS 2022a, 15). As described in the EA, it is necessary to excavate the rock knob to the east of the Pretty Rocks Landslide to provide space for the east abutment of the bridge and to accommodate a temporary staging platform (NPS 2022a, 15).

Excavated material will be placed below the road on the existing landslide debris flow or removed and stored for use in the park (NPS 2022a, 14 and 15).

19. **Comment Summary:** Some commenters expressed support for the proposed project but cautioned the NPS to keep the park’s core wilderness values in mind during further planning and construction of the project, and to limit actions such as rock scaling unless it can be shown that it is in keeping with the Wilderness Act Minimum Requirements. Several commenters mentioned rock scaling specifically as a cause for concern in how it could change the natural setting of the wilderness.

Response: Rock scaling was chosen as a risk reduction measure because it would have the least amount of impact on wilderness while still providing safe access to the Park Road. Rock scaling would be designed to match existing surroundings and would be conducted by workers on ropes and performed by hand using prybars; no blasting would be necessary. Although some rock bolts may impact the untrammeled and undeveloped qualities of wilderness, they would remain in keeping with the Wilderness Act Minimum Requirements (NPS 2022a, Appendix E).

20. **Comment Summary:** Commenters asked about wildlife impacts and requested a deeper analysis of the impacts to various wildlife in the Polychrome area, specifically to Dall’s sheep, birds, and eagles. Commenters felt that the impacts to sheep and caribou were understated.

Response: Anticipated impacts to wildlife—including Dall’s sheep and golden eagles—are discussed in the EA (NPS 2022a, 37-39). The anticipated impacts to golden eagles are being addressed through the mitigation credits as required by the USFWS’s eagle take permit associated with this project.

21. **Comment Summary:** Several commenters suggested mitigation measures and BMPs to reduce impacts to wildlife, including performing a study before and after construction and requiring the NPS to hire independent wildlife monitors for construction.

Response: Comment acknowledged. Proposed mitigation measures for minimizing impacts to wildlife are described in Section 3.1 of the EA (NPS 2022a, 22-23). Interannual variations unrelated to this project influence wildlife presence and abundance, making an analysis of the effects of the project difficult to determine. While there will be local impacts to wildlife, park-wide, the impacts of construction are not anticipated to be adverse to population-level impacts and would be undetectable.

APPENDIX C DETERMINATION OF NONIMPAIRMENT

The NPS Organic Act of 1916 and the General Authorities Act of 1970 prohibit impairment of park resources and values. The NPS Management Policies 2006 uses the terms “resources and values” to mean the full spectrum of tangible and intangible attributes for which the park is established and managed, including the Organic Act’s fundamental purpose and any additional purposes as stated in the park’s establishing legislation (NPS 2006). The impairment of park resources and values may not be allowed unless directly and specifically provided by statute. The primary responsibility of the NPS is to ensure that park resources and values will continue to exist in an unimpaired condition that will enable people to have present and future opportunities to enjoy them.

A determination of impairment is made for each of the resources carried forward and analyzed in the EA. Impairment is an impact that—in the professional judgement 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 those resources or values. An impact will be more likely to constitute impairment to the extent that it affects 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
- 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 cannot be further mitigated .

The Polychrome Area Improvements EA (NPS 2022a) incorporates mitigation measures and BMPs by reference, therefore reducing or eliminating effects to several resources.

IMPAIRMENT DETERMINATION

The NPS has determined that the bridge construction, earthwork, road realignment, retaining wall construction, and geohazard risk reduction measures will not result in impairment of park resources and values. An impairment determination is made for the resource impact topics analyzed for the selected alternative, with the exception of socioeconomics and visitor use and experience. These two resources are not generally considered park resources and therefore do not apply to impairment determinations. Non-resource topics are not assessed for impairment, and this determination applies only to NPS lands and resources, and has been rendered solely by NPS management.

Geology. Geology was not specifically identified as a park purpose in enabling legislation or in the park’s Foundation Statement, apart from protecting the mountain massif. The selected alternative will permanently alter existing rock formations and modify the topography in the project area, resulting in a temporary decrease in the rate of erosion and increase in the rate of deposition. The project will also involve temporarily stabilizing slopes and reducing rockfall, which will prevent or delay the associated geologic processes. However, construction of the bridge over the Pretty Rocks Landslide will enable the landslide to pass underneath and continue unimpeded by infrastructure. Therefore, there will be an overall long-term beneficial impact to geology that will not result in impairment.

Visual Resources. Range features and open views of dynamic alpine landscapes are mentioned as fundamental resources and values for DENA. The short-term adverse impacts to visual resources during Phase I and Phase II construction will be caused by the inconsistency of construction activities in an area where the focus is generally on the natural landscapes rather than human development. The Pretty Rocks bridge and other alterations will be a long-term impact to visual resources, although implementation of mitigation measures will minimize these impacts. In addition, implementation of the selected alternative will restore access and enable visitor enjoyment of the views from the western 47 miles of the Park Road, which will not be feasible for most visitors without completion of the Polychrome Area Improvements. For these reasons, the selected alternative will not result in impairment of visual resources.

Noise and Soundscape. Soundscape was not specifically identified as a park purpose in enabling legislation or in the park's Foundation Statement. However, the park's natural soundscape, and its contribution to visitor enjoyment and wilderness character, was documented in the 2006 Denali National Park and Preserve Backcountry Management Plan. The selected alternative will generate a net increase in noise from heavy equipment and power tools during construction, but the duration of noise generating activities in the project area is expected to be short. Following construction, noise levels in the park generated by use of the improved road are expected to return to conditions prior to the road closure in 2021. Impacts to noise and soundscape will be temporary; measures will be employed to reduce noise impacts where practicable. The level of disturbance from the selected alternative will not result in impairment.

Wildlife. Legislation establishing DENA identified wildlife preservation as a purpose of the park. Subsequently, wildlife and habitat are identified as fundamental resources in the park's Foundation Statement. The selected alternative has the potential to impact a variety of wildlife species in and around the project area. Short-term impacts will include displacement caused by increased human activity, dust, and construction noise (especially from drilling, pile driving, and blasting). Long-term impacts of the project will include localized habitat loss due to excavation and placement of excavated material on vegetation below the road. However, impacts to wildlife are anticipated to affect a few individuals in the project area; there are no anticipated adverse population-level impacts from the selected alternative. Therefore, the level of disturbance from the selected alternative will not result in impairment to wildlife.

Wetlands and Vegetation. Wetlands and vegetation are not identified as a specific purpose in the establishing legislation of the park and are not specifically identified in DENA's general management plan as central to maintaining the park's significance. Wetlands in the project area will be avoided to the greatest extent practicable, but the selected alternative will directly and permanently impact up to 0.60 acre of low- to moderate-functioning wetlands and approximately 1,000 linear feet of low- to moderate-functioning streams. Although the selected alternative will affect wetlands on the toe of the Pretty Rocks Landslide, it will not alter the eventual outcome of permanent wetland disturbance from landslide activity.

Up to 14 acres of vegetation will be directly impacted from excavation and placement of material and sediment. The vegetation in the affected areas is commonly found throughout the park and is not endangered or protected; therefore, loss of this vegetation will not impact the park's ecosystem. By implementing mitigation measures and BMPs, the level of disturbance from the selected alternative will not result in impairment to wetlands and vegetation.

Cultural Resources. Protecting historic and archeological sites was identified as a purpose for establishing DENA. The park's Foundation Statement similarly identifies cultural resources as a fundamental resource. The selected alternative will result in long-term changes to the historic character of the Polychrome section of road, which is considered an adverse effect per the NHPA and its implementing regulations (36 CFR Part 800). However, the impacts will be mitigated through

a Memorandum of Agreement (NPS 2022b) with the Alaska SHPO and monitoring will occur as needed during implementation to ensure cultural resources or items protected by the Native American Graves Protection and Repatriation Act are not impaired.

Wilderness. The selected alternative will have short-term impacts to wilderness during construction, as well as long-term impacts. The selected alternative will degrade the untrammeled, undeveloped, and natural qualities of wilderness character, and temporarily decrease opportunities for solitude; however, impacts will be reduced through mitigation measures (NPS 2022a, 22) and variations described in the Wilderness Act Minimum Requirement Analysis. By implementing these measures, the level of impact from the selected alternative will not result in impairment to wilderness.

SUMMARY

The NPS has determined that the improvements to the Denali Park Road in the Polychrome Area will not constitute an impairment of the resources or values of DENA. As described above, the Pretty Rocks Bridge and Polychrome Road Improvements Project is not anticipated to impair resources or values that are essential to the purposes identified in the enabling legislation of the park, key to the natural or cultural integrity of the park, or identified as significant in the park's relevant planning documents. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, the comments provided by the public and others, and the professional judgment of the decision-maker guided by the NPS Management Policies (NPS 2006).