

National Park Service
U.S. Department of the Interior

Denali National Park and Preserve
Alaska



Finding of No Significant Impact

Rehabilitation of the Denali Park Road in the Sanctuary Saddle and Mile 4.5 Areas

July 2012

Recommended:

Paul R. Anderson
Superintendent, Denali National Park and Preserve

7/31/12
Date

Approved:

[Signature] for Sue Morier
Regional Director, Alaska

8/7/2012
Date

FINDING OF NO SIGNIFICANT IMPACT

Rehabilitation of the Denali Park Road in the Sanctuary Saddle and Mile 4.5 Areas

Denali National Park and Preserve, Alaska
July 2012

The National Park Service (NPS) prepared an environmental assessment (EA) to evaluate the impacts of rehabilitating the Sanctuary Saddle and Mile 4.5 sections of the Denali Park Road in Denali National Park.

The NPS has selected Alternative 2 (the preferred alternative), *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*, with added mitigation measures. The Federal Highways Administration has designed the project. Under this alternative, backslope work begun in 2008 will continue on the remaining cut slopes at Mile 4.5 by installing 1,256 linear feet of riprap blanket. They will also work on a 2,300 foot long section of road at Mile 24 by installing 1,365 linear feet of riprap with underdrains on the road backslope, performing ditch reconditioning, replacing culverts, cleaning drainage windows, providing some short grade raises, placing an 8 inch lift of surface wear material, and adjusting the road width to meet standards. All affected backslope areas will be covered with 6 inches of topsoil and will be replanted with native vegetation. Site reclamation mitigation measures in the EA have been modified as shown in Appendix A, the Errata.

ALTERNATIVES

Three alternatives were evaluated in the EA.

Alternative 1, *No Action*

Under Alternative 1, the NPS and FHWA would not complete the proposed road rehabilitation project in the MP 4.5 or Sanctuary Saddle areas. Existing use and maintenance of the road would continue. Annual maintenance activities of adding crushed gravel or screened pit run material to maintain a safe driving surface would continue, as would blading the ditches and maintaining culverts. Brush crews would continue to clear brush alongside the road according to the directions in the Denali Road Maintenance Standards. Current structural issues such as slumping backslopes, water in the ditches and plugged culverts would remain.

Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)* (Preferred Alternative)(Selected Alternative)

At MP 4.5 under Alternative 2, the NPS and FHWA propose to continue backslope work begun in 2008 by installing 1,256 linear feet of 12 inch thick riprap blanket on the remaining cut slopes from 2008 in the MP 4.5 project area (approximately 55,000 square feet or 1.3 acres previously disturbed). The riprap blanket sections and fill slopes will be covered with conserved topsoil from earlier nearby excavations. Disturbed sites within the project area would be replanted with native vegetation, following the Native Plant Revegetation Manual for Denali National Park.

Repair work in the Sanctuary Saddle area will include installing 1,060 linear feet of 18 inch thick slope blanket with underdrains and 305 linear feet of 30 inch thick rock buttress with underdrains sections above the road, performing ditch reconditioning, replacing culverts, cleaning drainage windows, providing some short grade raises, placing an 8 inch lift of surface wear material, reshaping the crown or superelevations, and adjusting the road width to meet standards. These repairs will affect about 38,000 square feet (0.9 acres) above the existing ditch and backslope. Subexcavation of the road prism is planned to remove one heaved area and other soft base material. The road width will be set at 26 feet for the project area.

Approximately 1,700 cubic yards (cy) of surfacing material (D-1 gravel) will be needed for the Sanctuary Saddle project, as will about 950 cy of select borrow (sub-base) and 1,300 cy of Class 2 rock, although these quantities may change somewhat with further refinements in design. Approximately 2,750 cy of Class 2 rock will be required for the backslope work at Mile 4.5. All of material will be trucked to the project site from outside the park sources. Around 2,200 cy of topsoil will be trucked from the Teklanika Pit at Mile 27 to the two sites to cover the riprap and the 2008 riprap with a 6 inch layer.

Reusable material removed from the roadbed will be hauled to the MP 27 Teklanika Pit for recycling and possible use as select borrow, surfacing binder additive, or topsoil for reclamation. Material determined as unusable will be backhauled out of the park by trucks delivering rock or gravel to the project site. Some reject material may be used in pit rehab work at the Teklanika Pit.

The road work is scheduled for the summer of 2013. The estimated cost of the project is \$1.4 million.

Alternative 3, Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0) (Environmentally Preferable Alternative)

At MP 4.5 under Alternative 3, backslope work would conclude by applying a 6 inch layer of clean topsoil to the 1044 linear feet of riprap blanket installed in 2008. Native seed would be applied by park staff to the new topsoil. Other bare slopes within the 2008 project area would be replanted with native vegetation, as necessary, following the Native Plant Revegetation Manual for Denali National Park. Material that has slumped into the ditch at two areas would be removed by heavy equipment, as would any future slump.

Repair work in the Sanctuary Saddle area would include installing 2,290 linear feet of standard underdrains under the uphill ditch. An 8 inch diameter perforated pipe would extend throughout the length of the underdrain sections and would empty into 8 inch diameter outlet pipes every 150 to 300 feet. Installing the underdrain would require reconditioning and shaping and then maintaining the ditch above the underdrain so that water keeps flowing to the next culvert, rather than forming pools in the ditch. Sanctuary Saddle work would also include performing ditch reconditioning, replacing culverts and adding 3 new ones, cleaning drainage windows, providing some short grade raises, placing an 8 inch lift of surface wear material, reshaping the crown or superelevation, and adjusting the road width to meet standards. The road width would be set at 26 feet for the project area.

Approximately 1,700 cubic yards (cy) of surfacing material (D-1 gravel) would be needed for the Sanctuary Saddle project, as would about 950 cy of select borrow (subbase) and 750 cy of drain rock, although these quantities may change somewhat with further refinements in design. All of the material would be trucked to the project site from outside the park sources. Around 1,000 cy of topsoil would be trucked from the Teklanika Pit at Mile 27 to the MP 4.5 site to cover the riprap from the 2008 project with a 6 inch layer.

The road work and associated gravel processing is scheduled for the summer of 2013. The estimated cost of the project is \$0.3 million.

PUBLIC INVOLVEMENT

The EA was issued for public review and comment from June 22, 2012 to July 23, 2012. Paper copies of the EA, or notices of the EA's availability, were sent by mail or email to over 200 government agencies, interest groups, and individuals. The EA was posted on the NPS Planning, Environment, and Public Comment (PEPC) website and on the park's webpage. The park issued a press release announcing the availability of the EA and the open comment period on June 22, 2012. No written comments were received.

DECISION

The NPS decision is to select a modified Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*, along with the mitigating measures. Modifications are described in the Errata in Attachment A.

Mitigating Measures

Mitigation measures are specific actions that when implemented reduce impacts, protect park resources, and protect visitors. Best management practices and mitigation measures will be used to prevent or minimize potential adverse effects associated with rehabilitation of the park road. Mitigation measures undertaken during project implementation of the selected Alternative 2, *Intensive Rehabilitation of the Park Road in*

the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0): will include, but will not be limited to those listed below:

Vegetation. *Construction limits will be marked at all work areas to help ensure that vegetation outside the areas to be rehabilitated does not get trampled or torn up during the work. Disturbed areas will be monitored for any exotic plants. Silt fences or sediment wattles will be installed to diminish erosion and turbidity below the road where backslope or underdrain work is happening. Gravel or riprap will come from outside park borrow sources determined to be weed free. Contractor equipment must be pressure washed or certified to be weed free prior to entering the park.*

Vegetation at the Sanctuary Saddle will be cut between August 1 and April 1. For reclamation purposes and if practical, the vegetative mat at the Sanctuary Saddle area will be removed in the fall or spring and stored off-site, to be used to cover the riprap blankets when they are installed on the backslope. The full excavation of the backslopes and placement of the riprap will be done between August 15 and June 15, in the spring when the ground is frozen or during the fall. If saving the vegetative map is impractical, the riprap blankets will be covered with a 6-inch layer of topsoil and reseeded with seeds gathered locally. All of the area above the road ditch disturbed for this project will end up reseeded or with a cover of vegetation. If topsoil is used, annual mowing in the proposed project area, up to approximately 16 feet off the road, will keep spruce and shrubs from growing above knee high. All of the riprap from this project at Mile 4.5 and also from the 2008 project will be covered by 6 inches of topsoil and reseeded in accordance with the Native Plant Revegetation Manual for Denali National Park and Preserve.

Air Quality. *Dust will be produced by the additional truck and construction traffic on the gravel park road. These impacts will be partially mitigated by use of a water truck during construction activities to keep the dust down.*

Wildlife and Habitat. *The NPS will follow established guidelines in the park's bear-human conflict management plan. The plan requires contractors and staff to use bear-proof containers for food and refuse and sets up guidelines for temporary closures. Vegetation clearing will be done outside of the April 1 to August 1 migratory bird nesting season so as to not impact nesting or fledging. Any occupied nests discovered will be protected at all times. Shrubs within 5 meters of the road edge are subject to road maintenance activities and are available for removal at any time under an agreement with the U.S. Fish and Wildlife Service.*

Cultural Resources. *Several archaeological sites exist near the Sanctuary Saddle area, and the park road has been determined eligible for listing on the National Register of Historic Places. If previously unknown cultural resources are located during construction, the project will be halted in the discovery area until cultural resource staff could determine the significance of the finding. Further archeological surveys may be needed in areas where ground disturbance will occur. The project manager will work closely with the park archeologist regarding project timing of implementation to ensure*

cultural resources are identified, avoided and protected. If previously unknown cultural resources are located during construction, the project will be halted in the discovery area until cultural resource staff could determine the significance of the finding.

Visitor Use and Recreation. Visitors, Kantishna lodge owners, and bus drivers will be advised in park announcements, programs, and publications that there will be temporary inconveniences from construction work on the road. Culvert replacement or other work that will close the road for hours will be scheduled to be done at night.

In all cases traffic control and safety shall be maintained. The Contractor shall include proposed daytime work protocols in its Quality Control Plan and its Safety Plan to show how their monitoring and controls will be implemented.

Rationale for the Decision

The selected action (Alternative 2) will satisfy the purpose and need of the project better than other alternatives. Alternative 2 is designed to control the slumping backslope at both road sections, a design which will protect the road structure at the Sanctuary Saddle area and protect the constructed ditch at Mile 4.5 that is supposed to retain ice during the winter. The greater vegetation and visual impacts from Alternative 2 will be mitigated by covering the riprap-covered backslopes with topsoil and a seed bank. This disturbance is required for the slope under drains and rip rap which are intended to dewater and stabilize the backslope above the road section at Sanctuary Saddle. Dewatering and stabilizing the backslope will further reduce the potential for saturation of the road base and loss of the road ditch and culvert investments made with this project.

Alternative 1, *No Action*, would not accomplish the purpose and need of the project. Existing use and maintenance of the road would continue according to the directions in the Denali Road Maintenance Standards (NPS 2006). Current structural issues such as slumping backslopes, water in the ditches and plugged culverts would remain.

Alternative 3, *Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*, would accomplish the purpose and need of the project by finishing the project at Mile 4.5 begun in 2008 and addressing some of the drainage issues at the Sanctuary Saddle. However, the backslope above the road at the Sanctuary Saddle would continue to present a maintenance problem, in that the hillside slumps often enough to plug culverts and create water pockets in the ditch that can saturate the roadbed. It can be very difficult to re-open a plugged culvert once material has packed and solidified within it. The requirement of maintenance staff to get rid of the mud by overboarding would be common during rain events. This alternative does not address the downslope movement of the hillside above the road.

Significance Criteria

The selected alternative [Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*] will not have a significant effect

on the human environment. This conclusion is based on the following examination of the significance criteria defined in 40 CFR Section 1508.27.

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

The EA evaluated the effects of Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*, on vegetation, wetlands and soils, wildlife and habitat, cultural resources, visitor use and recreation, and park management. As documented in the EA, Alternative 2 will have a minor adverse impact on cultural resources by removing some of the rustic nature of the park road, and a moderate effect on the area's vegetation and soils and wetlands, wildlife and habitat by removing wetlands above the road at the Sanctuary Saddle, while having a moderate beneficial effect on park operations by protecting ditches in the two road sections. There will be no restriction of subsistence uses.

(2) The degree to which the proposed action affects public health or safety.

The selected alternative will improve visitor safety by re-establishing the road ditch, eliminating the vertical curve in the road alignment and reducing the soft spots in the roadway caused by saturated soils.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetland, wild and scenic rivers, or ecologically critical areas.

The facility rehabilitation will be located in a national park. The existing sections to be repaired are part of the Historic Register-eligible Denali Park Road, but the State Historic Preservation Officer has concurred in the decision that the project will not adversely affect that historic property. The wetland acreage affected is not unique in thousands of acres of similar wetlands cover the lower slopes of the Outer Range in the eastern section of the park.

(4) The degree to which effects on the quality of the human environment are likely to be highly controversial.

The effects on the quality of the human environment will not be controversial. The NPS sent the EA to over 200 agencies, organizations, and individuals for public review. No comment letters were received. The environmental analysis concluded that the proposed facility rehabilitation will have no more than minor to moderate adverse impacts on park resources.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The environmental effects of the selected alternative [Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*], do not involve unique or unknown risks. Similar rehabilitation work has been undertaken along the park road and at the Kennels parking area, with positive results. The mitigations and best management practices included with this decision will minimize risks to the public or wildlife populations.

(6) The degree to which the action may establish a precedent of future actions with significant effects or represents a decision in principle about a future consideration.

Each section of the park road has unique issues, based on construction history, parent geology, soil types and saturation, permafrost and other factors. Any rehabilitation work will integrate past experience, improvements in engineering, Road Design Standards, and historic property preservation.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The EA evaluated rehabilitation of two short sections along the park road. The Denali Park Road is a facility built many years ago on a dynamic landscape for less traffic than uses it today. Many sections of the road continue to have structural or drainage issues that will be addressed by future projects. The conceptual outline for this work was evaluated and approved in the *1997 Record of Decision for the Entrance Area and Road Corridor Development Concept Plan/Environmental Impact Statement* and will follow the Denali National Park 2007 Road Design Standards.

(8) Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The State Historic Preservation Officer (SHPO) concurred with the park's assessment of **no historic properties adversely affected** for the park road rehabilitation project.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The selected alternative will not adversely affect an endangered or threatened species or its critical habitat.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The selected alternative [Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*] will not violate any Federal, State, or local law.

FINDINGS

The levels of adverse impacts to park resources from the selected alternative will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the natural or cultural integrity of the park.

The selected alternative complies with the NPS Organic Act, ANILCA, the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990 (wetlands). There will be no restriction of subsistence activities as documented by the ANILCA, Section 810(a) Summary Evaluation and Findings.

The NPS has determined that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

ATTACHMENT A

ERRATA

In the EA for Rehabilitation of the Denali Park Road in the Sanctuary Saddle and Mile 4.5 Areas of Denali National Park

This errata section provides clarifications, modifications or additional information to the EA and to the selected alternative, Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*. This modification does not significantly change the analysis of the EA and, therefore a new or revised EA is not needed and will not be produced.

1. Correction. Replace this sentence on page 17:

“The estimated cost of the project is \$1.1 million.”

with this sentence:

“The estimated cost of the project is \$1.4 million.”

2. Modification. Add this paragraph in the Vegetation part of the Mitigation Section on page 22:

“Vegetation at the Sanctuary Saddle will be cut between August 1 and April 1. For reclamation purposes and if practical, the vegetative mat at the Sanctuary Saddle area will be removed in the fall or spring and stored off-site, to be used to cover the riprap blankets when they are installed on the backslope. The full excavation of the backslopes and placement of the riprap will be done between August 15 and June 15, in the spring when the ground is frozen or during the fall. If saving the vegetative map is impractical, the riprap blankets will be covered with a 6-inch layer of topsoil and reseeded with seeds gathered locally. All of the area above the road ditch disturbed for this project will end up reseeded or with a cover of vegetation. If topsoil is used, annual mowing in the proposed project area, up to approximately 16 feet off the road, will keep spruce and shrubs from growing above knee high. All of the riprap from this project at Mile 4.5 and also from the 2008 project will be covered by 6 inches of topsoil and reseeded in accordance with the Native Plant Revegetation Manual for Denali National Park and Preserve.”

ATTACHMENT B

NON-IMPAIRMENT DETERMINATION

Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0) in Denali National Park

The NPS Organic Act of 1916 and the General Authorities Act of 1970 prohibit impairment of park resources and values. The 2006 NPS Management Policies use 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. 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 allow people to have present and future opportunities for enjoyment of them.

A determination of impairment is made for each of the resource impact topics carried forward and analyzed in the *Rehabilitation of the Denali Park Road in the Sanctuary Saddle and Mile 4.5 Areas* environmental assessment for the preferred alternative [Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*]. The description of park significance in Chapter 1 was used as a basis for determining if a resource is:

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

Impairment determinations are not provided for visitor opportunity, park management, or socioeconomic resources because impairment determinations relate back to park resources and values. These impact areas are not considered to be park resources or values subject to the non-impairment standard.

Vegetation, Wetlands and Soils

Alternative 2 will disturb up to 2.2 acres of backslope at MP 4.5 and Sanctuary Saddle to install riprap above the road. At the Mile 4.5 area, vegetation and upper soil layers were removed in 2008 from 1.3 acres slated for riprap blanket treatment in this project. This was a woodland mix of white spruce with white spruce-black spruce hybrids and a dense understory of willow, dwarf birch and blueberry. Vegetation at the Sanctuary Saddle will be cut between August 1 and April 1 and the excavation of the backslopes and placement of the riprap could be done in the Spring when the ground is frozen or during the fall. Due to active revegetation, not all of the impacts to vegetation associated with riprap blanket installation will be permanent. The riprap blankets will be covered with a 6-inch layer of topsoil and reseeded with seeds gathered locally. All of the area disturbed for this project will end up with a low cover of vegetation. Annual mowing in the proposed project area, approximately 16 feet off the road, will keep spruce and shrubs from growing above knee high.

All of the 0.9 acres of vegetation to be removed to install the slope blanket and riprap blanket above the road in the Sanctuary Saddle area are also PFO4/SS1B wetlands. This type of wetland is common locally and regionally and filling 0.9 acres will have a minor effect on the flood retention, habitat and other values received from wetlands in the area. In compliance with NPS wetland protection policies, wetland losses will be compensated for, on a minimum 2:1 basis, in the Kantishna Hills region of the park.

The clearing of shrubs and other vegetation on 0.9 acres, and the disturbance to soil on 2.2 acres, will result in a moderate adverse impact to vegetation, soils and wetlands. The filling of 0.9 acres of palustrine forested/scrub shrub wetlands for backslope stabilization will result in a moderate net loss of wetlands and wetlands functions in the project area. These impacts will not degrade the quality of area-wide biological resources and will not result in impairment

Wildlife and Habitat

Wildlife habitat for large mammals, small mammals, and birds will be reduced by 0.9 acres of forest and shrub vegetation at the Sanctuary Saddle section of this project. The vegetation at the Mile 4.5 site was removed as part of the 2008 road project. During the construction period noise and human activity will disturb wildlife and cause them to be temporarily displaced from the affected and adjacent areas.

No bird nests will be disturbed during the fledging season. Any trees or shrubs above 3 feet in height needed to be removed will be removed between August 1 and May 1, or generally after nesting and fledging has occurred. Shrubs within 5 meters of the road edge are subject to road maintenance activities and are available for removal at any time under an agreement with the U.S. Fish and Wildlife Service. Large mammals, small mammals and birds will find extensive acreage of similar habitat adjacent to the roadside acreage lost for at least one-half mile to the south and for one-half mile to the north in the MP 4.5 area and for ½ mile to the north in the Sanctuary Saddle area.

The clearing of shrubs, other vegetation, and the disturbance to soil on 2.2 acres will result in a moderate adverse impact to wildlife habitat. These impacts will not degrade the quality of area-wide biological resources and will not result in impairment

Cultural Resources

The State Historic Preservation Officer has concurred in the park's assessment of **no historic properties adversely affected** for this park road rehabilitation project. The park road in the Sanctuary Saddle area retains some of the flavor of a rustic road, though the work to prepare it for widening in the 1960s took it from a one lane road with pullouts to a two lane road. The improvements proposed in this alternative will retain the existing width, or even narrow some of the sections that exceed maximum width standards, in the project. Routine grading after the project is completed will help make the surface look of the road appear similar to the look of the past twenty years. Almost all of the culverts will be resized to fit standards. The riprap installed above the road will keep the slope from falling into the ditch. There will, however, be a permanent minor adverse effect to the historic park road from upgrades to the visible road structure, such as smoothing the vertical alignment.

The MP 4.5 project area is along a paved section of the road, and engineered structures are normal to improve drainage and to protect the road. The additional riprap sections will detract from any rustic nature left in this section of the road until covered by soil and revegetation. The riprap slopes will need to be mowed so that tree roots do not have a chance to either disrupt the fabric under the riprap or grow but produce trees unstable in such a thin soil layer. The mowing may impact the natural look of the vegetation that is located in the project area.

The park road will be the only cultural resource that will be impacted by the project. There should be a beneficial impact to the rustic nature of the park road by improving drainage features and narrowing the road in sections of the Sanctuary Saddle where it exceeds width standards. Short changes to vertical alignment (cutting heave in the road) will restore the original alignment of the road while maintaining the rustic nature of the road, this action will not result in impairment.

SUMMARY

The level of impacts to vegetation, wetlands and soils, wildlife and habitat, and cultural resources from implementing Alternative 2, *Intensive Rehabilitation of the Park Road in the MP 4.5 and Sanctuary Saddle Areas, (Mile 24.3 – 25.0)*, will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the integrity of the park.

APPENDIX C:

**STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)**

**SANCTUARY SADDLE AND MP4.5
DENALI NATIONAL PARK AND PRESERVE, ALASKA**

July 2012

Recommended:

Paul R. Anderson

Superintendent, Denali National Park and Preserve

7/31/12

Date

Certified for Technical Accuracy and Servicewide Consistency:

Gregory W. Rosenbil

Chief, Water Resources Division, Washington Office

08/01/12

Date

PURPOSE AND NEED FOR ACTION

The National Park Service (NPS) has prepared and made available for public review an environmental assessment (EA) to evaluate the impacts of road rehabilitation at MP 4.5 and MP 24 (Sanctuary Saddle) of the Denali National Park Road (park road) in Denali National Park and Preserve (the park).

The NPS is proposing to:

- Install 1256 linear feet of riprap blanket above the road in the MP 4.5 area to prevent the backslope from slumping into the ditch above the road constructed to hold winter ice
- Install 1444 linear feet of riprap blanket above the road to prevent the backslope from sliding into the roadside ditch, adding an 8 inch wear layer to 2,300 feet of park road, replace all culverts, and reshape the road in the Sanctuary Saddle area.

The proposed project is consistent with similar projects and management plans outlined in both the 1986 General Management Plan and the 1997 Development Concept Plan/Environmental Impact Statement, which was an amendment to the 1986 plan. Executive Order (E.O.) 11990, Protection of Wetlands, requires the NPS, and other federal agencies, to evaluate the likely impacts of actions in wetlands. The E.O. requires that short- and long-term adverse impacts associated with occupancy, modification or destruction of wetlands be avoided whenever possible. Indirect support of development and new construction in such areas should also be avoided wherever there is a practicable alternative.

To comply with these orders, the NPS has developed a set of agency policies and procedures which can be found in Director's Order (DO) 77-1, Wetland Protection, and Procedural Manual 77-1, Wetland Protection. The policies and procedures related to wetlands emphasize: exploring all practical alternatives to building on, or otherwise affecting, wetlands; reducing impacts to wetlands whenever possible; and providing direct compensation for any unavoidable wetland impact by restoring degraded or destroyed wetlands on other NPS properties.

The purpose of this Statement of Findings (SOF) is to present the NPS rationale for its proposed road rehabilitation at MP 4.5 and Sanctuary Saddle in the wetland area. This SOF also documents the anticipated effects on these resources.

WETLANDS WITHIN THE PROJECT AREA

Wetland boundaries were identified in the field by NPS personnel in August 2006, transcribed onto air photos, and converted to a geographic information system (GIS) layer to determine wetland acreage. Of the approximately 2.2 acres that would be disturbed by the proposed action, 1.5 acres is classified as wetlands under the "Classification of Wetlands and Deepwater Habitats of the United States," the Cowardin Classification System (Cowardin et al. 1979), and are therefore subject to NPS wetlands compliance procedures. However, the MP 4.5 project consists of work to place additional

riprap blankets on 0.6 acres of wetlands (and 0.7 acres of upland) where the vegetation and upper soil layers were removed in 2008 as part of an approved project to create a larger ditch for holding ice during the winter. The loss of those wetlands areas resulted in a compensation project in the Glen Creek area of the Kantishna Hills in the western part of the park. The new disturbance for this project would be the 0.9 acres of wetlands above the park road in the Sanctuary Saddle area.

The 0.9 acres of wetlands newly disturbed for this project are classified as palustrine forested/scrub-shrub, needle-leaved evergreen, saturated wetlands (PFO4/SS1B). Vegetation in palustrine forested/scrub-shrub wetlands is typically dominated by black spruce/white spruce hybrids (Vioreck et al. 1992). The understory shrub layer can vary slightly, but typically consists of both low and tall shrubs of willow (including *Salix planifolia*), Labrador tea (*Ledum* spp.), lowbush cranberry (*Vaccinium vitis-idaea*), and bog blueberry (*Vaccinium uliginosum*). Common ground cover includes peat mosses (*Sphagnum* spp.) and herbaceous species like field horsetail (*Equisetum arvense*) and few flowered sedge (*Carex pauciflora*) and a variety of forbs (Vioreck et al. 1992; Reed 1996).

These affected wetlands function to attenuate snow melt surface flow during spring break-up, when the ground is still frozen. They also function to slow water movement during heavy rainfall events and limit erosion of soils during those events and help protect the park road from flood events. The wetlands involved here also include ground water discharge points (springs) that help keep the lower slopes saturated; however, they contribute to lubricating the soils enough in the Sanctuary Saddle area that the slopes commonly drop into or weep into and fill the ditch. These wetlands also provide habitat for wildlife, such as red squirrels, snowshoe hares, porcupine, and common bird species such as gray jays, thrushes, sparrows, and warblers. Less common raptors such as hawk-owls use wetland trees for nesting. Moose frequent the area for forage. No threatened or endangered animal or plant species are found in the area and no research or reference sites have been developed in the project area.

There are no water wells located near the project area. Flooding at this site has not been documented, as forests and open wetlands cover most of the adjacent land and gravelly subsurface soils absorb the rainfall.

THE PROPOSAL IN RELATION TO WETLANDS

The proposal and alternatives are described in detail in the project EA.

The road rehabilitation at MP 4.5 and the Sanctuary Saddle would newly impact a maximum of 0.9 acre of palustrine forested/scrub-shrub (PFO4/SS1B). The extent of disturbance is shown on Figures 2, 3 and 4 of this EA. The majority of the wetland disturbance would be caused by placing riprap blankets as backslope to keep the ditches from clogging or getting blocked by slumping soil.

Palustrine forested/scrub-shrub, needle-leaved evergreen/broad-leaved deciduous, saturated wetlands (PFO4/SS1B), as described above, are common throughout the eastern areas of the park. The wetlands located at the proposed project site are a relatively small part of the park's wetlands and are locally common: over 1,000 acres of palustrine forested/scrub-shrub wetlands are present above the road in the Sanctuary Saddle area. Therefore, the approximately 0.9 acre of palustrine forested/scrub-shrub wetlands that would be lost by the proposed action equates to less than 0.1 percent of the total palustrine forested/scrub shrub wetland acreage in just these areas of the park. Removal of this amount of wetlands would have a moderate impact on overall wetland functions and values, such as surface water quality (including sediment control and water purification), floodwater attenuation, and animal habitat.

The primary purposes of this project are to protect improvements made to the road at MP 4.5 in 2008 that greatly reduced the winter aufeis accumulation on the park road. The 2008 project was designed to provide sufficient ditch capacity to retain winter ice in the upgradient ditch so that park personnel would not have to dig up the ice and dispose of it to the downgradient side of the road; an act which crushes vegetation. The MP 4.5 project would continue that work to stabilize the backslope and protect the ice-holding capacity of the ditch. The work at the Sanctuary Saddle would utilize similar backslope stabilization structures to try to keep mud and soil/vegetation clumps from sliding into the ditch and blocking road drainage. Also, activities associated with the proposed project (ditch reconditioning, drainage window cleaning, underdrain installation, and replacement of culverts) would result in the beneficial impact of increased hydrological connectivity between vegetation upgradient and downgradient from the road in the Sanctuary Saddle. The rock blankets to be installed above the road would allow water flow to the road ditch, but would prevent soil slumping.

The proposed project area wetland soils include up to 60 inches of organic peat soils over gravelly glacial till. The installation of culverts and ditch, and related road improvements would be accomplished by removing the organic soils and replacing them with a 12-30 inch thick riprap blankets, some on which would have 4 inches of foam underneath to lessen warming of the permafrost below.

Discharge of dredged or fill material into jurisdictional wetlands is regulated by the U.S. Army Corps of Engineers (USACE) under section (§) 404 of the Clean Water Act. The project would need a §404 permit from USACE for the placing of 1.5 acres of riprap into wetlands.

MITIGATION PROPOSED

Federal and NPS policy is to avoid locating projects in wetlands whenever possible. If circumstances make it impracticable to avoid wetlands, then mitigation of unavoidable impacts must be planned. An NPS wetlands no-net-loss policy requires that wetland losses be compensated for by restoration of wetlands, preferably of comparable wetland type and function and in the same watershed if possible.

Of the 2.2 acres potentially affected by the proposed action, 0.9 acres is classified as wetlands. This SOF commits to full 2:1 compensation for the 0.9 acre of disturbed wetlands.

On-Site Rehabilitation

As much as possible, disturbance of wetlands in and around the project area would be avoided. Silt fences would be set up to define construction impact limits. Any areas disturbed by construction activities would be restored to as near natural conditions as possible. Fugitive dust from construction activities would be mitigated through the use of dust abatement practices (i.e., watering). Prior to the start of construction activities, the NPS would salvage as much topsoil, organic matter, and vegetation as necessary for later use in site revegetation or for use in revegetating other local sites. Salvaged material would be stockpiled separately and would be placed in the disturbed areas following construction.

Off-Site Compensation (Wetland Restoration)

Compensation, by restoration of previously disturbed degraded wetlands, is required under the NPS no-net-loss policy for projects involving disturbance or loss of wetlands. Compensation will occur for the loss of 0.9 acres of palustrine wetland. Two-for-one compensation would be completed within the park, rather than 1:1, because the work at the compensation site would restore some, but not all of the natural functioning of the riparian wetlands previously lost at the site. Stabilizing the channel and floodplain would allow processes such as natural revegetation, soil deposition from spring breakup events, and pool and riffle initiation to begin with a much smaller chance of channel blowout during flooding and resultant loss of functioning.

A Federal Highways Administration funded project to remove gravel from former placer mined areas in Kantishna is scheduled for 2013-2015. Three acres within the park's Eldorado Creek floodplain has been selected for restoration within the scope of this mitigation. The project site and the Kantishna compensation site (see Figure B-1) are separated by up to 65 miles but are both within Denali National Park. The affected area and the proposed compensation site have some different wetland functions and values. The compensation area wetlands are classified as Riverine Upper Perennial Unconsolidated Shore with Intermittent Flooding (R3USJ), and Palustrine Unconsolidated Shore Cobble Gravel Seasonally Flooded/Well-Drained (PUS1D). Restoration plans include removing and disposing of debris; stabilizing the channel and floodplain; stabilizing the access road; and revegetating the stripped areas. Preliminary work includes water and soil sampling, and engineering surveys of the existing stream channel, floodplains, and upland topography. Discharge measurements will be collected to aid in stream channel design. Soil sampling will assess the geo-chemistry of the upper watershed, and determine the soil's potential for revegetation efforts. Surveys, both cross-sectional and topographical, will be conducted to supplement site data on the NPS topographic maps. This information will be used to locate and estimate material amounts for use in recontouring the site and reconstructing the stream channel and floodplain.

Cost estimates for this project are approximately \$25,000 per acre, based on an unpublished report, "Cost Estimation for Reclamation, National Park Service, Alaska Regional Office, January 1994." This report reviewed three separate mining reclamation projects that were conducted on abandoned claims in Denali National Park and Preserve. The cost associated with compensation for the proposed road project would be about \$50,000. The park cannot use funds specifically earmarked for natural resources management (e.g., Natural Resources Preservation Program funding, Water Resources Division-Competitive, etc.) to compensate for construction impacts.

Stream channel and floodplain restoration will be based on the techniques of the Glen Creek restoration project at Denali. Project design requirements will include a channel capacity for a 1.5-year (bankfull) discharge and a floodplain capacity for up to a 100-year discharge. The project design will include the use of bio-revetment, located on meanders, to encourage channel stabilization using natural methods. Brush bars, located in areas of little or no fines, will be employed to dissipate floodwater energy and encourage sediment deposition. Riparian areas will be revegetated with willow cuttings and other appropriate vegetation. Depending on the results from the soils nutrient analysis, fertilizer will be used to ensure a quick start for new vegetation.

Monitoring of the stream channel and riparian areas will occur to determine the success of the reclamation efforts. Vegetation plots and permanently mounted cross-sections will be surveyed and measured again after the first year. Additional seeding and revegetation will occur on areas not vegetated during the first year. It is anticipated that the site will be a functional wetland within 3-5 years, and will be fully-functioning within 15 years.

Figure B-1 Wetlands Compensation Site



**Wetlands Compensation Area Location -
Eldorado Creek, Kantishna, Denali
National Park and Preserve. 1.3 acres**

Image Date: August 2011



Denali NP and Preserve



0 250 500 Feet

ALTERNATIVES CONSIDERED

Alternative 1 describes the No Action Alternative; under this alternative, the NPS and Federal Highways Administration would not complete the proposed road rehabilitation. Existing use and maintenance of the road at MP 4.5 and at the Sanctuary Saddle would continue. Refer to Chapter 2 of the EA for a more detailed explanation of Alternative 1.

Alternative 2 is the NPS Preferred Alternative to install additional backslope riprap blankets at MP 4.5 and at the Sanctuary Saddle. The 2008 project at MP 4.5 included seven areas of riprap blanket and this alternative would fill in all the areas between these sections with additional riprap blanket so that none of the slope above the ditch designed for significant winter ice-holding capacity gets filled by slumping material. The project at the Sanctuary Saddle would include installing slope blanket and rock buttress sections above the road, constructing standard underdrains, performing ditch reconditioning, replacing culverts, cleaning drainage windows, providing some short grade raises, placing an 8 inch lift of surface wear material, and adjusting the road width to meet standards. The riprap work there would be an attempt to keep the hillside from incrementally sliding into the road ditch. Under this alternative about 0.9 acres of wetlands would be removed.

Alternative 3, is the Environmentally Preferred Alternative and would finish the 2008 project at MP 4.5 by adding 6 inches of topsoil, insuring native vegetation starts on the whole area backslope, and cleaning out area that have slumped since 2008. The project at the Sanctuary Saddle would include constructing a standard underdrain the full length of the 2,300 foot long project, performing ditch reconditioning, replacing culverts, cleaning drainage windows, providing some short grade raises, placing an 8 inch lift of surface wear material, and adjusting the road width to meet standards. No new wetlands would be impacted under this alternative.

Alternative 1, the No Action Alternative, would not accomplish the purpose or relieve the need for the project. This alternative allows the continuation of unvegetated slopes above the road at MP 4.5 and possible additional slumping of the backslope into the ditch. The alternative does not improve drainage conditions at the Sanctuary Saddle.

The reason for selecting Alternative 2, with a greater wetland impact, is that it is a proactive approach to potentially serious maintenance conditions. Slumping of the backslope at MP 4.5 can cause the ditch to hold less ice, which would put more ice on the road and would require more time to remove the ice during Spring road opening. Slumping of the backslope in the Sanctuary Saddle tends to fill the ditch with mud, which can cause water to continually stand in the ditch and saturate the road prism. The ditch mud can also clog culverts or completely block the ditch, cause water to run across the gravel road, putting the road at risk.

Alternative 3 would make limited improvements to the backslope at MP 4.5, with over half of the area remaining without riprap blankets classified as uplands before the 2008 backslope work and therefore less prone to slumping. This alternative would also make

limited improvements to the road at the Sanctuary Saddle. The underdrain would help to drain away subsurface water and additional culverts would intercept additional surface water in the ditch. The park would probably need to spend more time on maintenance of the ditch, including reshaping the ditch during slumping events so that surface water continues to run toward the culverts.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES ASSOCIATED WITH THE PROPOSED ACTION

The potential environmental consequences of the proposed action and alternatives are fully described in the EA.

CONCLUSION

The NPS concludes that the best alternative for long-term protection of the road function and structure would include disturbing about 0.9 acre of wetlands while installing riprap blankets above the road for road and roadside ditch protection. Wetlands would be avoided to the maximum extent practicable. The wetland impacts that could not be avoided would be minimized. The NPS acknowledges that some natural localized wetlands, and their accompanying processes, would be lost by the road rehabilitation project. Impacts on the 0.9 acre of wetlands would be compensated for, on a minimum 2:1 acreage basis, by restoring riverine and palustrine wetland habitat in the Kantishna Hills region of the park (formerly a placer-mined stream and riparian habitat along Eldorado Creek). The NPS finds that this project is consistent with the Procedural Manual #77-1, Wetland Protection and with NPS DO #77-1, Wetland Protection, including the NPS no-net-loss of wetlands policy. The NPS finds that this project is in compliance with E.O. 11990, Protection of Wetlands.

REFERENCES:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. <http://www.npwrc.usgs.gov/resource/1998/classwet/classwet.htm> (Version 04DEC98).

Reed, P.B., Jr. 1996. National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary. Available online.

Viereck, L.A., et al. (1992). The Alaska Vegetation Classification. General Technical Report PNW-GTR-286. USDA Forest Service, Pacific Northwest Research Station. Portland, OR.