

**ENVIRONMENTAL ASSESSMENT
FOR CONSTRUCTION OF A NEW MULTI-PURPOSE TRAIL
IN THE ENTRANCE AREA OF DENALI NATIONAL PARK**

Prepared by
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DENALI NATIONAL PARK AND PRESERVE

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I. PURPOSE AND NEED

The National Park Service (NPS) is proposing to construct a multi-purpose trail and a fiber optic line in the entrance area of Denali National Park and Preserve. The new trail would connect users of the Parks Highway (Alaska Highway #3) - and the new pedestrian trail leading from the gateway area one-half mile north of the park entrance - to the new park visitor center (Figures 1&2). The trail would also serve as the utility corridor for a new fiber optic line connection for in-park computer users. A multi-purpose trail between the entrance area and the Alaska Railroad tracks would be approximately 1.3 miles long and would be built 10 feet wide and to Americans with Disabilities Act accessible standards to accommodate pedestrians and bicycle users. This project would be constructed during the summer of 2004.

The purpose of the new trail would be to improve pedestrian safety and circulation between the gateway community outside the park entrance and the new park visitor center and to create a quality visitor facility. The new trail would provide a pedestrian and bicycle user facility, separate from the motor vehicle use on the park road, to connect the park entrance to the new Visitor Center (scheduled to open in 2005). A multi-purpose trail is needed in this area because the existing park entrance area trail system (the roadside path) does not connect to the new access trail constructed this year along the Park Highway. The existing roadside path is also too narrow to accommodate bicycle users, forcing them to use the park road. The fiber optic line would replace and upgrade the existing copper wire line used for park telephone and computer connections.

The Record of Decision for the 1997 *Entrance Area and Road Corridor Development Concept Plan* (DCP/EIS) approved a bicycle trail connecting the entrance area and the Visitor Access Center, but did not address bicycle use further into the park. As part of the "Actions Common to all Alternatives" from the December, 2001 Entrance Area EA, the NPS proposed that: "The existing trail system in the entrance area would be upgraded, accessibility improved and routine maintenance provided." No mention is made of a fiber optic connection.

This Environmental Assessment (EA) analyzes a No Action Alternative, the NPS preferred action and 2 alternatives for the construction of a multi-purpose trail in the entrance area of Denali National Park and Preserve and has been prepared according to the National Environmental Policy Act of 1969 and regulations of the Council of Environmental Quality (40 CFR 1508.9).

Background

The entrance area of Denali National Park and Preserve serves as a staging area for bus tours to the park's interior and as the primary park experience for visitors not taking a shuttle or tour bus or a private bus to a Kantishna lodge. Facilities and services in the park entrance area currently include the Visitor Access Center (VAC), NPS interpretive programs, Riley Creek campground, the railroad depot, the Denali Park Post Office, the airstrip, a network of hiking trails, the sled dog kennels at park headquarters, the Riley Creek Mercantile, and support facilities for the concessionaire including a bus maintenance building, bus parking lot and employee housing.

A new visitor center, food court and bookstore are being constructed on the site of the former Denali Park Station Hotel, which closed in September 2001, and are expected to open in 2005. The new Murie Science and Learning Center (MSLC) had programs in session during 2003, but will be housed in new facilities north of the former hotel by 2004. A winter visitor contact center is being built into the MSLC campus. A new Alaska Railroad train depot is also expected to open in 2004.

Trails in the entrance area (Figure 2) include a Roadside Path that connects the VAC with park headquarters, the Jonesville Bridge pedestrian trail (no bikes) from the entrance of the Riley Creek Campground to the Nenana River bridge at the park boundary, a new multi-purpose trail connecting the Nenana River bridge to the park entrance, and other trails leading to destinations off the park road.

The Roadside Path was constructed in 1989 on top of the main telephone line and adjacent to the newly installed commercial power line that brought electricity from the pole farm to the then-new VAC.

Utility lines and corridors in the entrance area are as follows. The telephone line runs underground from the park entrance along the north side of the road to the VAC, crosses the road and then runs under the roadside path along the south side of the park road to the tracks. It then crosses under the road again and heads into the former hotel area and thence as far west as park headquarters.

The main power line runs on overhead lines along the railroad tracks from the north as far as the pole farm just south of Horseshoe Lake Creek and west of the park road/tracks crossing. The power line then runs underground to the Powerhouse near the new Visitor Center and local facilities. A feeder high voltage line runs underground from the pole farm, crosses under the road west of the tracks, follows underground within 9-15 feet of the south edge of the road pavement to a point across from the VAC, and then crosses under the road to the VAC.

A water line supplying the VAC runs under the roadside path between the Mercantile road entrance and the VAC. A sewer line departs the VAC, crosses under the road, and runs under the roadside path to the Mercantile entrance, where it crosses the road, follows under the northern road edge to the lagoon service road, and then turns into the lagoon area.

Figure 1. Project Location

Legal Context

The 1916 Organic Act directed the Secretary of the Interior and the NPS to manage national parks and monuments to:

“...conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” (16 U.S.C. 1.)

The Organic Act also granted the Secretary the authority to implement “rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments and reservations under the jurisdiction of the National Park Service.” (16 U.S.C. 3.)

In 1917, Congress established Mount McKinley National Park:

“...as a public park for the benefit and enjoyment of the people . . . for recreation purposes by the public and for the preservation of animals, birds, and fish and for the preservation of the natural curiosities and scenic beauties thereof . . . said park shall be, and is hereby established as a game refuge.” (39 Statute 938)

Additions to the park were made in 1922 and 1932 to provide increased protection for park values and, in particular, wildlife. The 1932 addition moved the eastern park boundary from a north-south line near park headquarters to the western bank of the Nenana River, including a right-of-way for the Alaska Railroad. An act in 1940 appropriated funds to provide “for adequate housing, feeding, and transportation of the visiting public and residents of Mount McKinley National Park in Alaska” in the vicinity of the railroad.

1978 amendments to the 1916 NPS Organic Act and 1970 NPS General Authorities Act expressly articulated the role of the national park system in ecosystem protection. The amendments further reinforce the primary mandate of preservation by stating:

“The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided for by Congress.” (16 U.S.C. 1-1a.)

The Alaska National Interest Lands and Conservation Act of 1980 (ANILCA) added approximately 2,426,000 acres of public land to Mt. McKinley National Park and approximately 1,330,000 acres of public land as Denali National Preserve and re-designated the entirety Denali National Park and Preserve. ANILCA directs the NPS to preserve the natural and cultural resources in the park and preserve for the benefit, use, education, and inspiration of present and future generations. The Act further directs the NPS to manage for the continuation of customary and traditional subsistence uses in the park and preserve additions in accordance with provisions in Title VIII.

The NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The 2001 NPS Management Policies 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. 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 a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The evaluation of whether impacts of a proposed action would lead to an impairment of park resources and values is included in this environmental assessment. Impairment is more likely when there are potential impacts to a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or 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.

Issues

Issues and impact topics are identified and form the basis for environmental analysis in this EA. A brief rationale is provided for each issue or topic that is analyzed in the environmental consequences section of this EA. Issues and topics considered but not addressed in this document also are identified.

Vegetation, Wetlands and Soils

Trail construction would remove vegetation and soils in the project area and fill wetlands. Specific concerns include:

- Trail construction and maintenance and placement of the fiber optic line would remove white and black spruce community plants from up to three acres.
- Soils would be removed during construction of the trail and soils exposed because of the project could be susceptible to erosion.
- Up to 1 acre of wetlands would be disturbed or filled during construction.
- Trail construction could facilitate invasion of non-native species.

Wildlife Values and Habitat

Trail construction and visitor use would remove wildlife habitat and affect habitat use. Specific concerns include:

- Moose-calving habitat would be removed and adjacent habitat use would be affected.
- Some small-mammal and bird habitat would be removed.
- The construction activities would temporarily produce noise and activity levels that would disturb wildlife and cause them to disperse from adjacent areas during the construction period.

Air Quality

Exhaust from heavy equipment may degrade the pristine air quality that currently exists within the old park.

Sound Quality

Trail construction could affect the enjoyment of natural sounds by visitors.

Cultural Resources

Trail construction could affect unknown cultural or historic resources.

Visitor Use and Recreation

A new trail would connect entrance area facilities for pedestrians and bicyclists and would make visitor use safer in that area. A new trail could affect the views around the VAC or park road.

Park Management

Trail construction would meet the management goal of providing a continuous multi-purpose pedestrian facility from the park entrance to the main entrance area facilities. Installing a fiber optic connection would improve administration of the area as well as supporting the educational goals of the MSLC.

Local Communities/Socioeconomic Resources

The construction of a new entrance area trail could provide another transportation link between the park and local businesses that would positively affect the socioeconomic resources of the local businesses and communities.

Issues Eliminated from Further Consideration

Effects on Threatened and Endangered Species

The Endangered Species Act requires an analysis of impacts on all federally listed threatened and endangered species, as well as species of special concern. In compliance with Section 7 of the Act, the U.S. Fish and Wildlife Service (USFWS) was consulted. No federally designated threatened or endangered species are known to occur within Denali National Park (pers. comm. Ted Swem, USFWS, Fairbanks, Alaska, June 9, 2000).

Floodplains

No floodplains exist in the project area.

Subsistence Use

Subsistence uses are not allowed in the entrance area or on any of the lands of the former Mt. McKinley National Park, and no adverse affects to subsistence activities would occur. See Appendix A.

Wilderness Resource Values

The proposed trail is not located inside designated wilderness boundaries. The entrance area was found to be not suitable for wilderness designation (General Management Plan, NPS, 1986).

Additionally, noise generated by project activities would not be expected to affect solitude in any adjacent wilderness areas.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project would not result in significant changes in the socioeconomic environment of the area, and therefore is expected to have no direct or indirect impacts to minority or low-income populations or communities.

Permits and Approvals Needed to Complete the Project

A concurrence from the State Historic Preservation Officer will be required for the evaluation of the effects of this project on cultural resources.

A Section 404 permit from the Corps of Engineers for filling wetlands is not required for this project because the site wetlands are not adjacent to tributaries of navigable waters and are therefore not jurisdictional wetlands.

A National Park Service Wetlands Statement of Findings to evaluate wetlands impacts and prescribe mitigation measures and compensation efforts is not required for this project because trail construction with wetlands interpretation components is generally an action excepted from these requirements.

II. DESCRIPTION OF THE ALTERNATIVES

Alternative 1 - Existing Conditions (No Action Alternative)

The existing trail system in the entrance would be maintained (Figure 2). Multi-purpose trails have been or will be constructed as part of the visitor center-depot construction projects, but the multi-purpose part of those trails would end at the AKRR tracks. A five-foot wide graveled pedestrian roadside path follows an underground telephone line from the tracks eastward past the VAC to the entrance to the Riley Creek Mercantile and Riley Creek Campground. Between there and the park entrance there are no maintained trails. Bicycle use from the tracks to the entrance would continue to be on the park road. A new ten-foot wide multi-purpose trail was constructed by Alaska Department of Transportation in September, 2003 to connect the entrance to their new pedestrian bridge, scheduled to open in 2004, crossing the Nenana River and leading to the summer businesses of the park's northern gateway.

Alternative 2 – Widened Existing Roadside Path

Under this alternative the roadside path between the tracks, VAC and Mercantile would be widened to ten feet to accommodate multi-purpose pedestrian and bicycle use and would be crowned to a 2% slope for drainage. The trail would be surfaced with D-1 crushed gravel and compacted to meet standards for accessibility. A park road trail crossing would be designated at the trail coming to the road from the Mercantile, and the trail would continue adjacent to the north side of the road to a point near the entrance sign and parking lot, where it would go behind the entrance feature and connect to the new trail coming from the Jonesville Bridge (Figure 3).

The extra width for the trail would be gained by excavating the vegetation and organics for an average of five feet to the south of the trail between the airstrip access road, past the VAC, and down to the Mercantile trail. From the road crossing a new trail would be constructed along the edge of the area disturbed next to the road for a sewer line and from the lagoon service road a new 10-foot wide trail would be constructed inside the forest to wind behind the entrance feature and connect up with the AKDOT multi-purpose trail. The new construction would require a sixteen-foot wide clearing for the ten-foot wide trail.

A fiber-optic line would be installed by the Matanuska Telephone Association (MTA) under the proposed trail addition. The fiber-optic line would also cross under the road west of the tracks and would then follow within a power line utility corridor leading up to the pole farm. The fiber optic line would be installed by spooling it out from a small bulldozer into a ditch dug by a four-foot long ripper tooth on the back of the machine.

Prior to MTA installing the fiber optic line, the park's trail crew would use a front-end loader to salvage as much in the way of vegetation mats as is possible during the thawing of the organic mat. This would be accomplished in late Spring. In wetland areas, after the fiber line is installed, the trails crew proposes to cover the exposed ground with 8 inches of foam and then 12 inches of gravel. The gravel would be the base for the compacted surface and the foam would help insulate the ground to minimize thawing of suspected permafrost below the trail

Alternative 3 – Northside Separated Multi-purpose Trail

Under this alternative a new multi-purpose trail would be constructed between the park entrance and the AKRR tracks (Figure 4). The trail would be ten-feet wide, would require a sixteen-foot clearing width, and would be crowned to a 2% slope for drainage. The trail would be gravel-surfaced and designed to accessible standards for gradient and compaction. The trail would be put north of the park road and separated from the park road by a thirty-foot buffer of trees. The route would split below the VAC and one path would take the trail around the big parking lot and VAC. Once that path reached the same elevation as the parking lot it would be constructed next to the access road. The other path would be constructed between the VAC and the park road. In order to maintain a 5% grade ascending to the VAC it would be necessary to jog the path going between the VAC and park road further away from the road and then back to it. At a point approximately 250-300 feet east of the tracks, the trail would cross to the south side of the road and connect up with the existing multi-purpose trail coming from the depot area.

A fiber-optic line would be installed by MTA under the proposed trail. The fiber-optic line would cross under the road immediately west of the tracks and would then follow within a power line utility corridor leading from the pole farm. The fiber optic line would be installed by spooling it out from a small bulldozer into a ditch dug by a four-foot long ripper tooth on the back of the machine.

Prior to MTA installing the fiber optic line, the park's trail crew would use a front-end loader to salvage as much in the way of vegetation mats as is possible during the thawing of the organic mat. This would be accomplished in late Spring. In wetland areas, after the fiber line is installed, the trails crew proposes to cover the exposed ground with 8 inches of foam and then 12 inches of gravel. The gravel would be the base for the compacted surface and the foam would help insulate the ground to minimize thawing of suspected permafrost below the trail.

Alternative 4 – Southside Separated Multi-Purpose Trail (Preferred Alternative)

Under this alternative a new multi-purpose trail would be constructed between the park entrance and the AKRR tracks (Figure 5). The trail would be ten-feet wide, be crowned to a 2% slope for drainage, be constructed between 30 and 150 feet from the park road, and would require a sixteen-foot clearing width. The trail would be gravel-surfaced and designed to accessible standards for gradient and compaction. The trail would leave the park entrance area and jog around north and behind the entrance feature to a point approximately 200 feet north of the Jonesville Trail where it would cross the park road to join the existing southside roadside path up to the VAC. That eastern part of the trail would be placed between 30-50 feet from the edge of the road disturbance. Starting across from the VAC a new ten-foot wide trail would be constructed between 30 and 150 feet south of the existing southside utility corridor/roadside path up to the railroad tracks where it would connect up with the existing multi-purpose trail coming from the depot area. The roadside trail between the Mercantile entrance road and the VAC would be maintained as is and retained as a power line utility corridor. All of the trail except the section between the VAC and Mercantile would be separated from the park road by at least a 30 foot buffer of trees.

A fiber-optic line would be installed by MTA under the proposed trail, except that it would follow the disturbed area north of and adjacent to the road between the Mercantile entrance and the VAC. The fiber-optic line would also cross under the road immediately west of the tracks and would then follow within a power line utility corridor leading up to the pole farm and existing power/telephone utility corridor in the MSLC area. The fiber optic line would be installed by spooling it out from a small bulldozer into a ditch dug by a four-foot long ripper tooth on the back of the machine.

Prior to MTA installing the fiber optic line, the park's trail crew would use a front-end loader to salvage as much of the vegetation mats as is possible during the thawing of the organic mat. This would be accomplished in late Spring. In wetland areas, after the fiber line is installed, the trails crew proposes to cover the exposed ground with 8 inches of solid foam and then 12 inches of gravel. The gravel would be the base for the compacted surface and the foam would help insulate the ground to minimize thawing of suspected permafrost below the trail.

Alternatives Considered and Eliminated from Further Evaluation

Add a Bicycle Lane to the North Side of the Park Road in the Entrance Area. This alternative would require adding about four feet of pavement and underlying road prism from the tracks to the park entrance to construct a safe bike lane. Most of the slower bicycle travel would be inbound (uphill) to the park and a bike lane would get more use on the north side. Downhill bicycle traffic would flow more smoothly with motor vehicles at the posted speed limit of 35 mph. The fiber optic line would either get buried in the roadside ditch, under the new bike lane, or under the existing roadside path. Bicyclists would have to cross the park road near the airstrip to avoid a steep drop near the tracks on the north side and to get onto the existing multi-purpose trail leading to the depot and visitor center area.

This alternative would not provide for adequate separation for pedestrians or bicyclists from motor vehicles and would not provide a park-like setting for those pedestrians and bicyclists traveling between destinations in the entrance area of the park. A roadside path already exists on the south side of the park road, which is why Alternative 2 is being considered.

Convert the Jonesville Pedestrian Trail to multipurpose use.

The trail is too steep for safe bicycle use and too steep to meet ADA standards.

Environmentally Preferred Alternative

Alternative 1 (No Action) is identified as the Environmentally Preferred Alternative because it affects the least wildlife habitat and vegetation acreage.

Mitigation and Monitoring

Mitigation measures are specific actions that when implemented reduce impacts, protect park resources, and protect visitors. The following mitigation would be implemented under each action alternative and are assumed in the analysis of effects.

Vegetation. Vegetation mats that need to be moved from the project area will be saved and moved to areas around the visitor center site that need revegetation. Plywood and other materials would be used to cushion large vehicles that may access the trail site while crossing areas not in the project. Areas disturbed but not part of the finished trail would be restored with native vegetation. Periodic surveys will be conducted to determine the presence of exotic plants.

Water Resources and Wetlands. Silt fences would be erected along the project area between the VAC and airstrip to protect wetlands in the area not directly affected by construction. At least one rest site along the trail would be devoted to interpreting wetland values of the area.

Wildlife and Habitat. The NPS and contractors would follow established guidelines in the park's bear-human conflict management plan. The plan requires operators to use bear-proof containers for food and refuse and sets up guidelines for temporary closures.

Cultural Resources. Surveys for cultural resources have taken place in the entrance area over the past two decades. If previously unknown cultural resources were located during construction, the project would be halted in the discovery area until cultural resource staff could determine the significance of the finding.

Visitor Use and Recreation. Visitors in the area could use the park road or free bus system until new facilities are opened.

Safety. Some use of heavy equipment would be required during the vegetation salvage operations; flaggers would be required. Work activities that might impact park operations, such as utility shutdowns, would be scheduled during the off hours or during periods of low visitation. The park superintendent or authorized delegate may authorize scheduling changes.

Figure 2. Alternative 1 – Existing Conditions (No Action Alternative)

Figure 3. Alternative 1 – Widen Existing Roadside Trail

Figure 4. Alternative 3 – Northside Separated Multi-Purpose Trail

Figure 5. Alternative 4 – Southside Separated Multi-Purpose Trail (Preferred Alternative)

Table 1. Comparison of the Alternatives

Type of Use	<u>Alt. 1 (No action)</u>	<u>Alt. 2 Widen Exist.</u>	<u>Alt. 3 Northside Separated</u>	<u>Alt. 4 Southside Separated</u>
<u>Pedestrian Use</u>	On existing roadside path from RR tracks to Mercantile. On road shoulder from Mercantile to entrance.	On widened existing roadside path from RR tracks to Mercantile. A new multi-purpose trail on the north side of the road from the Mercantile to the entrance, mostly near the park road shoulder.	On new multi-purpose path in forest extending from RR tracks to park entrance at a short distance from and north of the park road.	On new multi-purpose trail in forest from RR tracks to VAC, separated a short distance from and south of the road. On widened existing trail from VAC to Mercantile. On new trail from Mercantile to entrance, separated from and north of the park road.
<u>Bicyclist Use</u>	On Park Road.	On widened existing and new path.	On new northside separated trail.	On new southside separated trail.
<u>Fiber Optic Path</u>	Unknown	Under new and widened path.	Under new northside separated trail.	Under disturbed north road edge from entrance to VAC. Under new multi-purpose trail from VAC to RR tracks.

Table 2. Summary Impacts of the Alternatives

IMPACT TOPIC	Alt. 1 – No Action	Alt. 2 – Widened Existing Trail	Alt. 3 – New Northside Trail	Alt. 4 – New Southside Trail
Vegetation, Soils and Wetlands	No impact.	0.5 acres of spruce forest removed. 1/3 acre of palustrine wetlands removed. Soils affected would be used in off-site reclamation.	3 acres of spruce forest removed. 1 acre of palustrine wetlands removed. Soils affected would be used in off-site reclamation	1.9 acres of spruce forest removed. 1 acre of palustrine wetlands removed. Soils affected would be used in off-site reclamation
Wildlife and Habitat	Continued localized avoidance.	½ acre of habitat removed, with negligible effect. Local avoidance during construction and use.	3 acres of habitat removed, with minor adverse impact to moose calving habitat. Local avoidance during construction and use.	1.9 acres of habitat removed. Minor adverse impact to moose calving habitat. Local avoidance during construction and use.
Air Quality	No impact	Slight impact during construction. A long-term improvement through increased bicycle use.	Slight impact during construction. A long-term improvement through increased bicycle use.	Slight impact during construction. A long-term improvement through increased bicycle use.
Sound Quality	No impact	Minor impact during construction.	Minor impact during construction. Minor benefit to trail users.	Minor impact during construction. Minor benefit to trail users.
Cultural Resources	No impact	Likely no impact.	Likely no impact.	Likely no impact.
Visitor Use and Recreation	A moderate adverse effect because the existing trail does not reach the park entrance, does not allow bicyclists to get off the road and is affected by being too close to the park road.	Moderate benefits to visitors from an improved pedestrian and bicycle facility.	Moderate benefits to visitors from a new pedestrian and bicycle facility. Separation from road would enhance visitor safety.	Moderate benefits to visitors from a new pedestrian and bicycle facility. Separation from road would enhance visitor safety.
Park Management	Fails to meet the goal of providing complete and safe facilities.	Would increase safety and provide a complete facility. Fiber optic line would increase research connections to and from park.	Would increase safety and provide a complete facility. Fiber optic line would increase research connections to and from park.	Would increase safety and provide a complete facility. Fiber optic line would increase research connections to and from park.

Local Communities/ Socioeconomic Resources	No direct effect.	Minor to moderate benefits from providing a complete pedestrian and bicycle link to nearby businesses.	Minor to moderate benefits from providing a complete pedestrian and bicycle link to nearby businesses.	Minor to moderate benefits from providing a complete pedestrian and bicycle link to nearby businesses.

III. AFFECTED ENVIRONMENT

Detailed descriptions of the environment in the entrance area may be found in the 1986 GMP and the 1996 DCP/EIS. This section summarizes the natural and human environment that may be affected by the proposal and alternatives under consideration.

The project is located in T. 14 S., R. 7 W. in Denali National Park and Preserve. It is between mile 0 and mile 1.3 of the Denali Park Road. The area is located in the Denali front country, an area with high visitor use during the summer season.

Vegetation, Wetlands and Soils

Historically vegetation in the entrance area has seen change. In the 1920s, a number of fires burned over the area. By 1939, when the Park Hotel opened, mostly low shrubs and immature aspen and spruce trees dominated the area. Now taiga forest plant associations occur with mature white spruce and aspen dominating the vegetation. A variety of plant species comprise the understory, including alder, willows, Labrador tea, blueberry shrubs, and Alaska rose.

Two generic soil types occur in the project area. One soils type underlies forested areas and is gravelly or bouldery, silty soil with humus layers supporting mosses and lichens. The second soil type occurs in black spruce wetland areas, and it consists mostly of poorly drained silts and clays above thick gravel layers.

Hybrids of black and white spruce dominate wetlands located in the proposed project area. These wetlands are classified in the Cowardin Classification System (Cowardin et. al. 1979) as palustrine forested, needle-leaved evergreen, seasonally flooded wetlands (PF04B). The wetlands dominated by spruce form about 0.9 acres of wetlands. The wetland areas are on both sides of the park road between the VAC and the park airstrip. See Figure 3 for the general location of the wetlands.

Wildlife Values and Habitat

The most common wildlife species in the project area are red fox, snowshoe hares, red squirrels, and various birds such as chickadees, ravens, magpies, and numerous migratory species. The area also provides moose habitat, including willow browse along drainages and the perimeter of built-up areas, and including potential cover for calving areas. Cover is especially important

during the first weeks of a moose calf's life as a place near food sources where a cow and her calf can go when resting. The growing season starts a little earlier at lower elevations such as in the entrance area, and this area provides cover during late May to complement the more nutritious food sources. Grizzly bears are attracted to the area during moose calving season. Wetland areas can provide important foraging areas for moose and habitat for small mammals, migratory and resident birds.

Air Quality

Denali National Park and Preserve is a Federal Class 1 Air Quality Area under the Clean Air Act of 1977. Air quality is monitored near park headquarters through national networks: National Atmospheric Deposition Program (NADP for acid rain), Interagency Monitoring of protected Visual Environments (IMPROVE for haze and particulate monitoring), and the NPS ozone monitoring network. Denali documents some of the nation's best air quality.

Sound Quality

The sound quality along the park road in the entrance area includes an urban element, with vehicle noise from the daily passage of over 300 NPS buses, over 500 visitor and administrative automobiles and small trucks, over 200 other commercial vehicles from local businesses, 4 passenger trains, numerous freight trains, hourly helicopter takeoffs and landings and numerous airplane takeoffs and landings. The sound quality between 11pm and 5am often has few urban elements. No measurements of sound quality have been taken along this section of road.

Cultural Resources

Cultural resources in the park entrance area include archeological sites and historic buildings and structures. Approximately 25 cultural sites and features are located in the entrance area. Historic sites associated with the McKinley Park Station community are located near the park airstrip and Riley Creek. These include cabin foundations, fox pens, and other cultural remains.

All of the known sites in the entrance area are outside the footprint of the proposed developments.

Visitor Use and Recreation

Around 400,000 people visit Denali's entrance area annually. About 280,000 people take a bus trip beyond the Savage River check station into the park interior and the remaining visitors remain in the front country area, seeing this section of the park by the Savage Shuttle, private car, by bicycle, or on foot. Park bus use has declined eight percent since 1999, but visitation of all types is expected to increase over the next 10-15 years. The new visitor center and Denali Science and Learning Center should both enhance visits and recreational and educational opportunities.

During the summer months there is a continual stream of traffic, both vehicular and pedestrian, going back and forth to the park's entrance area facilities and between those facilities and the

businesses north of the Jonesville Bridge. In addition to the bus systems that provide access to the interior of the park, the NPS runs a bus every 20 minutes that runs a loop through the area, connecting the depot, VAC and Riley Creek Campground, and soon the system will connect to the new Visitor Center and Science and Learning Center. Many of the local businesses also run a bus or van either on a schedule or at least regularly into the entrance area. Pedestrians frequently walk the trails connecting entrance area facilities, especially on the Roadside Path. Bicycle use comes from visitors who arrive by bicycle, from local business employees going to the post office, VAC, depot, or other destinations, park employees off duty, and a few visitors who might be able to rent a bike locally.

Businesses in the Canyon provide about 1100 visitor rooms and up to 50 RV sites. The Riley Creek Campground has 145 campsites.

Park Management

The NPS has a contract with a concessionaire to provide public services including transportation, bus and campground reservations, food services, gift sales, camper merchandise and showers. Concession facilities in the area include the shuttle bus parking and maintenance facility, dormitories and apartments for seasonal employees, and laundry facilities. The NPS provides interpretive programs at the campgrounds, at the VAC theater, and at various other sites in the entrance area for guided walks. The NPS operates a power plant as a back-up for the entrance area commercial power. One loop of the Riley Creek Campground is kept open during winter without running water. This loop and park administrative headquarters are the only current visitor services available in the park during winter. A Winter Visitor Contact Station is scheduled to open at the MSLC in Fall, 2004. (see also Background, p. 1)

IV. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Assumptions for Impact Analysis

This section contains an evaluation of the direct and indirect environmental impacts of three action alternatives and the no action alternative. The analysis assumes that the mitigation identified in the *Mitigation and Monitoring* section (page 10) of this environmental assessment would be implemented under any of the action alternatives.

Cumulative impacts were analyzed to add up the incremental impacts to the environment resulting from adding the alternatives to other past, present, and reasonably foreseeable future actions. The cumulative impacts relate primarily to: (1) the continued implementation of the visitor and educational facility improvements proposed in the Entrance Area EA of December, 2001, (2) the implementation of a hazardous fuels management plan to reduce vegetation around all park buildings to reduce the chance that wildland fires would endanger park structures, and (3) use of existing facilities, including the new AKDOT pedestrian bridge over the Nenana River and the new multi-purpose trail connecting that bridge to the junction of the park road with the George Parks Highway.

Alternative 1 – Existing Conditions (No Action)

Vegetation, Wetlands and Soils

No vegetation, soils or wetlands would be removed or disturbed to preserve the status quo.

Wildlife Values and Habitat

No additional habitat would be lost for small mammals, birds, and moose. Continued visitor and employee use of the existing trails would result in continued local avoidance of those corridors by moose, lynx, bears and other wary animals.

Air Quality

Air quality would not be affected by this alternative.

Sound Quality

The existing sound quality would not be affected by this alternative.

Cultural Resources

No known cultural resources would be affected under this alternative.

Visitor Use and Recreation

Construction of the roadside path between the tracks and the VAC took advantage of a utility corridor adjacent to the park road, but the roadside path is not suitable for bicycle use, which forces bicyclists to use the park road. For most of its length the roadside path borders the park road drainage ditch, which is not a quality environment for a stroll in a park. Because there is no trail between the Mercantile and the entrance and the new multi-purpose trail connecting to the hotel and business area in the Canyon, all pedestrians and bicyclists are forced to use the park road. All of these items have a moderate adverse effect on park visitor use.

Park Management

This alternative would fail to meet the management goal of providing safe facilities for the types of uses that are occurring. Continued bicycle use along the park road increases the chance of accidents involving motor vehicles and bicycles. The lack of a trail between the entrance and the Mercantile area is confusing to visitors and is an unnecessary break in visitor facilities.

Local Communities/Socioeconomic Resources

This alternative would not directly affect local community resources. Visitors walking or bicycling from the gateway community would continue to use the park road for access to park entrance destinations.

Cumulative Effects: The impacts of this alternative to natural and cultural resources such as vegetation and wildlife habitat would be minimal to non-existent and there would not be a contribution to any impacts from other local or regional projects.

Conclusion: Existing trails would be maintained under this alternative. Visitor opportunities to either hike this area with a quality trail experience or to bicycle this area with a maximum of safety would remain limited.

In summary, this alternative would not impair park resources, but it also would not achieve the objectives to provide a quality experience for pedestrians or bicyclists visiting park destinations in the entrance area.

Alternative 2 – Widened Existing Roadside Path

Vegetation, Wetlands and Soils

Under this alternative approximately 0.3 acre of hybrid black spruce-white spruce forest community would be removed for the construction of the multi-purpose trail. An additional 0.2 acres of white spruce-mixed forest community would be removed for trail construction and another 0.4 acres of recently disturbed ground with seral shrubs on it would be affected by trail construction in previously disturbed areas adjacent to the park road. The limited vegetation removal from this alternative would not have a significant impact on the thousands of acres of taiga forest and other vegetation resources near the park entrance area.

One-third acre of palustrine forested, needle-leaved evergreen, seasonally flooded wetlands would be removed during trail construction. These wetlands were determined by the U.S Army Corps of Engineers to *not* be jurisdictional wetlands requiring a Clean Water Act, Section 404 fill permit because these wetlands are not directly connected to any navigable waters of the USA (Don Rice, personal communication). This type of wetland is common locally and regionally and the filling of one acre would not affect the flood retention, habitat or other values received from wetlands. The alternative would not add any blockage to the water flowing through the trail to the wetlands downhill.

A few inches of organic soil attached to the vegetation would be removed from the length of the trail. The soil type in the wetlands and uplands are common under black spruce and white spruce

forests. The soils would be saved for use in the reclamation of nearby lands reclaimed at the site of the old park hotel.

Cumulative Effects: Commercial and private development as well as the growth of transportation and utility systems in and near the Denali frontcountry have resulted and would continue to result in the loss of several hundred acres of spruce forest, especially in the Nenana River corridor outside the park boundary. Additional commercial and private development along the Nenana River corridor is expected to result in the disturbance of hundreds of acres of vegetation and soils during the foreseeable future. Minor loss of and disturbance to vegetation and soil in the park entrance area and along the park road corridor has occurred because of previous development, primarily visitor facilities and construction and maintenance of roads and trails. The total disturbance in the park development zone between the Nenana River and new Visitor Center is about 84 acres. This includes acres of cleared vegetation for the George Parks Highway, Denali Park Road, VAC, Visitor Center, MSLC, Riley Creek Campground, Riley Creek Mercantile, sewer treatment plant, airstrip, railroad, Morino Campground, bus maintenance facilities, concession housing, and area trails. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact to vegetation and soils in the entrance area from implementation of this trail project would be less than 1% of the total disturbance in the park entrance area. These incremental impacts would not result in significant cumulative impacts on vegetation and soils.

About 4.1 acres of wetlands have been impacted by previous road, trail, and building construction in the park entrance area. The entrance area of the park between the new Visitor Center and the Nenana River contains about 25 acres of similar non-jurisdictional wetlands. This project would further impact 0.3 acres of wetlands in the entrance area for a total displacement of 4.4 acres out of about 25 acres of wetlands in the immediate entrance area, or about 18%. Because the area of wetlands adversely impacted would be small and the relative wetlands value is low, there would be only a minor loss of wetlands or wetlands function in the park.

Conclusion: Under this alternative less than 1/3rd acre of hybrid black spruce-white spruce forest community would be removed for the construction of the multi-purpose trail. An additional 0.2 acres of white spruce-mixed forest community would also be removed. The clearing of trees, shrubs, other vegetation, and the disturbance to soil on one-half acre would result in a limited adverse impact to vegetation and soil. The clearing of 0.3 acres of palustrine forested wetlands for the trail construction would result in a minor net loss of wetlands and wetlands functions in the park entrance area. These impacts would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wildlife and Habitat

Wildlife habitat for large mammals, small mammals, and birds would be reduced by approximately 0.5 acres, including 0.3 acres of wetland wildlife habitat. There would be a negligible increase in impacts to local moose calving habitat during late May because the proposal would only widen an existing trail in an area frequently used by moose. The trail would not remove habitat critical as cover for calves. During the construction period noise and human activity would disturb wildlife

and cause them to be temporarily displaced from the affected and adjacent areas. There are no known raptor nests along the proposed alignment. Both small mammals and birds would find extensive acreage of similar habitat adjacent to the trail acreage lost.

Cumulative Effects: Approximately 84 acres of wildlife habitat has been disturbed in the entrance area between park headquarters and the Parks Highway. This includes acres of cleared vegetation for the VAC, Riley Creek Campground, Riley Creek Mercantile, water treatment plant, airstrip, railroad depot, park road, Visitor Center complex, and MSLC. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact to wildlife and habitat in the entrance area would add less than 1% to the total existing disturbed area near the park entrance. Because thousands of acres of similar habitat exist in the vicinity, there exists a moderate cumulative impact on wildlife and habitat in the park entrance area and this alternative would be a minor contributor to that impact.

Conclusion: The clearing of trees, shrubs, and other vegetation comprising one-half acre of wildlife habitat would result in minor adverse impacts on wildlife and habitat. The impact to wildlife and habitat would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Air Quality

Local air quality would be temporarily reduced by the limited use of heavy machinery during construction activities. Long-term air quality in the park would benefit slightly from the increased use of bicycles for in-park transportation. An incremental improvement is expected from a reduction in vehicle emissions from the use of bicycles.

Cumulative Effects: Air quality in Denali National Park's entrance area is affected by emissions from the Healy coal-fired power plant (about 8 miles north), the AKRR diesel engines, bus and vehicular traffic in the entrance area and along the George Parks Highway, and the park power plants and heating units. A park emissions inventory has not yet been conducted, but the temporary incremental increase in emissions from construction equipment would be negligible.

Conclusion: The reduction in air quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in intensity. It is possible that more use of an improved bicycle trail would reduce the use of motor vehicles and improve air quality. The net effect would be small compared to the potential air quality effects from outside sources. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Sound Quality

Park sound quality would decrease during the period of construction of the trail and installation of the fiber-optic line, especially during periods when heavy equipment is being used. This impact would be minor because the road corridor sounds are already impacted from vehicular traffic on the park road. It is possible that more use of improved bicycle trails would reduce the use of motor vehicles and improve sound quality. Individuals using the trail after construction

would not have a better natural sounds experience because they would be no further away from the road than presently.

Cumulative Effects: Sound quality in Denali National Park's entrance area is affected by bus and vehicular traffic in the entrance area and along the George Parks Highway, the AKRR diesel engines, and airplanes. The temporary incremental increase in noise from construction equipment on the trail would be negligible.

Conclusion: The temporary reduction in sound quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in area affected. Though an incremental improvement is expected from a reduction in vehicle noise by the use of bicycles, the net effect would be small compared to the potential sound quality effects from continuing vehicular traffic. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park.

Cultural Resources

No cultural resources are known from the areas that the proposed trail would pass through. Should presently unidentified cultural resources be discovered during the project, the superintendent and cultural resources manager would immediately be notified.

Cumulative Effects: The proposed project would not impact known cultural resources. Historic sites that have been affected by modern activities, mainly accidental fire, include the Morino Roadhouse and Kennedy site. All known significant archeological and historic sites in the entrance area would remain intact and undisturbed.

Conclusion: The project would not result in an impairment of park cultural resources that fulfill specific purposes identified in legislation establishing the park and effects would be consistent with the mandates of the NHPA.

Visitor Use and Recreation

Recreational opportunities for entrance area visitors would be temporarily affected by the construction of the new trail. Noise and visual impacts in the construction area entrance area would temporarily inconvenience park visitors, especially during construction near the VAC. Visitor safety would be enhanced by providing a facility separate from the park road for bicycle users and pedestrians. Visitor use opportunities in the developed area would benefit by providing a trail that connects the visitor center/depot with the gateway community. Construction of the trail would not significantly affect the landscape view from either the park road or from the trail. Visitor enjoyment would be enhanced by the inclusion of waysides that interpret wetland functions, among other natural and cultural features.

This alternative would not create a trail separated from the road and thus would fall short on creating a quality recreational facility. It is likely that more visitors would use a trail that provides higher visibility, and therefore more likely that a higher percentage of pedestrians and bicyclists would use a widened roadside path over the other alternatives.

Cumulative Effects: Additional projects to enhance recreational opportunities in the eastern end of the park are being proposed or are under construction. They would include a new Visitor Center, Murie Science and Learning Center, new hiking trails, a skiing trail in the Headquarters area, rehabilitated and new campsites at the Riley Creek Campground, and the railroad depot reconfiguration. All of these projects, including the proposed multi-purpose trail, are considered to benefit park visitor experiences and recreational opportunities.

Conclusion: This alternative would enhance visitor safety in Denali's entrance area and would provide visitors with a trail that could be used for point-to-point movement or for a recreational experience.

Park Management

The proposed completion of a multi-purpose trail in the entrance area would support the goals in the DCP/EIS to provide more opportunities for recreation and education in the entrance area. This alternative would create safer facilities for both the vehicle operators on the park road as well as for the pedestrians and bicyclists making use of the trail. The installation of a fiber optic line would benefit park administration and researchers by creating a solid high-speed information link to the outside world.

Cumulative Effects: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer for motor vehicles and make a facility that accommodates safe bicycle use.

Conclusion: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer for motor vehicles and use of the trails more pleasant for pedestrians and bicyclists.

Local Communities/Socioeconomic Resources

The new trail would improve local community resources by providing another transportation link between the gateway community and the destinations within the park entrance area. There would likely be an increase of pedestrian and bicycle use on the roadside trail under construction in the gateway community as well as on trails leading to destinations within the park entrance area.

Cumulative Effects: Bicycle and pedestrian connections between the gateway community and the park entrance area will be used for the first time in 2004. Future multi-purpose connections are being planned to connect the McKinley Village area to the park entrance. Additional pedestrian and bicycle traffic in both directions would likely have positive economic spinoffs, because the range of activities would thus expand, creating interest in visitors to stay longer or to have a return visit.

Conclusion: The proposed trail would complement the new pedestrian trails and bridge being constructed outside the park and would likely create more opportunities for visitors to the gateway community and would increase the satisfaction with a visit, which should stimulate the local economy.

Alternative 3 – Construct New Northside Multi-Purpose Trail in Entrance Area

Vegetation, Wetlands and Soils

Under this alternative approximately 1.1 acre of hybrid black spruce-white spruce forest community would be removed for the construction of the multi-purpose trail. An additional 1.9 acres of white spruce-mixed forest community would be removed for trail construction. The limited vegetation removal from this alternative would not have a significant impact on the thousands of acres of taiga forest and other vegetation resources near the park entrance area.

A little over one acre of palustrine forested, needle-leaved evergreen, seasonally flooded wetlands would be removed during trail construction. These wetlands were determined by the U.S Army Corps of Engineers to *not* be jurisdictional wetlands requiring a Clean Water Act, Section 404 fill permit because these wetlands are not directly connected to any navigable waters of the USA (Don Rice, personal communication). This type of wetland is common locally and regionally and the filling of one acre would not affect the flood retention, habitat or other values received from wetlands. The trail would be close enough to the uphill park road that the trail would add little incremental blockage to the water flowing through the organic layer in the wetlands downhill of the trail. However, any potential channeling effect below the trail would be mitigated by placing culverts every 100 feet so under the trail. Though wetlands can provide important wildlife habitat and buffer surrounding areas from flooding, the small area that would be impacted and adequate drainage under the trail would reduce these impacts to a minor effect.

A few inches of organic soil attached to the vegetation would be removed from the length of the trail. The soil type in the wetlands and uplands are common under black spruce and white spruce forests. The soils would be saved for use in the reclamation of nearby lands reclaimed at the site of the old park hotel.

Cumulative Effects: Commercial and private development as well as the growth of transportation and utility systems in and near the Denali frontcountry have resulted and would continue to result in the loss of several hundred acres of spruce forest, especially in the Nenana River corridor outside the park boundary. Additional commercial and private development along the Nenana River corridor is expected to result in the disturbance of hundreds of acres of vegetation and soils during the foreseeable future. Minor loss of and disturbance to vegetation and soil in the park entrance area and along the park road corridor has occurred because of previous development, primarily visitor facilities and construction and maintenance of roads and trails. The total disturbance in the park development zone between the Nenana River and new Visitor Center is about 84 acres. This includes acres of cleared vegetation for the George Parks Highway, Denali Park Road, VAC, Visitor Center, MSLC, Riley Creek Campground, Riley Creek Mercantile, sewer treatment plant, airstrip, railroad, Morino Campground, bus maintenance facilities, concession housing, and area trails. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact to vegetation and soils in the entrance area from implementation of this trail project would be about 3% of the total disturbance in the park entrance area. These incremental impacts would not result in significant cumulative impacts on vegetation and soils.

About 4.1 acres of wetlands have been impacted by previous road, trail, and building construction in the park entrance area. The entrance area of the park between the new Visitor Center and the Nenana River contains about 25 acres of similar non-jurisdictional wetlands. This project would further impact 1.1 acres of wetlands in the entrance area for a total displacement of 5.2 acres out of about 25 acres of wetlands in the immediate entrance area, or about 21%. Because the area of wetlands adversely impacted would be small and the relative wetlands value is low, there would be no net loss of wetlands or wetlands function in the park.

Conclusion: Under this alternative approximately 1 acre of hybrid black spruce-white spruce forest community would be removed for the construction of the multi-purpose trail. An additional 1.9 acres of white spruce-mixed forest community would also be removed. The clearing of trees, shrubs, other vegetation, and the disturbance to soil on 3 acres would result in a limited adverse impact to vegetation and soil. The clearing of 1.1 acres of palustrine forested wetlands for the trail construction would result in a minor net loss of wetlands and wetlands functions in the park entrance area. These impacts would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wildlife and Habitat

Wildlife habitat for large mammals, small mammals, and birds would be reduced by approximately 3.0 acres. There would be a minor increase in impacts to local moose calving habitat during late May because the proposed trail realignment would bring a popular facility farther into an area frequently used by moose. The trail would generally be within 30 feet of the road edge, however, and would not remove habitat critical as cover for calves. During the construction period noise and human activity would disturb wildlife and cause them to be temporarily displaced from the affected and adjacent areas. There are no known raptor nests along the proposed alignment. Both small mammals and birds would find extensive acreage of similar habitat adjacent to the trail acreage lost.

Cumulative Effects: Approximately 84 acres of wildlife habitat has been disturbed in the entrance area between park headquarters and the Parks Highway. This includes acres of cleared vegetation for the VAC, Riley Creek Campground, Riley Creek Mercantile, water treatment plant, airstrip, railroad depot, park road, Visitor Center complex, and MSLC. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact to wildlife and habitat in the entrance area would add about 3 % to the total existing disturbed area near the park entrance. Because thousands of acres of similar habitat exist in the vicinity, there exists a moderate cumulative impact on wildlife and habitat in the park entrance area and this alternative would be a minor contributor to that impact.

Conclusion: The clearing of trees, shrubs, and other vegetation comprising 3 acres of wildlife habitat would result in minor adverse impacts on wildlife and habitat. The impact to wildlife and habitat would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Air Quality

Local air quality would be temporarily reduced by the limited use of heavy machinery during construction activities. Long-term air quality in the park would benefit slightly from the increased use of bicycles for in-park transportation.

Cumulative Effects: Air quality in Denali National Park's entrance area is affected by emissions from the Healy coal-fired power plant (about 8 miles north), the AKRR diesel engines, bus and vehicular traffic in the entrance area and along the George Parks Highway, and the park power plants and heating units. A park emissions inventory has not yet been conducted, but the temporary incremental increase in emissions from construction equipment would be negligible.

Conclusion: The reduction in air quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in intensity. It is possible that more use of improved bicycle trails would reduce the use of motor vehicles and improve air quality. Though an incremental improvement is expected from a reduction in vehicle emissions from the use of bicycles, the net effect would be small compared to the potential air quality effects from outside sources. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Sound Quality

Park sound quality would decrease during the period of construction of the trail and installation of the fiber-optic line, especially during periods when heavy equipment is being used. This impact would be minor because the road corridor sounds are already impacted from vehicular traffic on the park road. Individuals using the trail after construction would have a marginally better natural sounds experience by being on a trail further away from the road than the one currently in use.

Cumulative Effects: Sound quality in Denali National Park's entrance area is affected by bus and vehicular traffic in the entrance area and along the George Parks Highway, the AKRR diesel engines, and airplanes. The temporary incremental increase in noise from construction equipment on the trail would be negligible.

Conclusion: The temporary reduction in sound quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in area affected. It is possible that more use of improved bicycle trails would reduce the use of motor vehicles and improve sound quality. Though an incremental improvement is expected from a reduction in vehicle noise by the use of bicycles, the net effect would be small compared to the potential sound quality effects from continuing vehicular traffic. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park.

Cultural Resources

No cultural resources are known from the areas that the proposed trail would pass through. Should presently unidentified cultural resources be discovered during the project, the superintendent and cultural resources manager would be immediately notified.

Cumulative Effects: The proposed project would not impact known cultural resources. Significant sites in the entrance area would remain intact and undisturbed. Historic sites that have been affected by modern activities, mainly accidental fire, include the Morino Roadhouse and Kennedy site. All known significant archeological and historic sites in the entrance area would remain intact and undisturbed.

Conclusion: The project would not result in an impairment of park cultural resources that fulfill specific purposes identified in legislation establishing the park and effects would be consistent with the mandates of the NHPA.

Visitor Use and Recreation

Recreational opportunities for entrance area visitors would be temporarily affected by the construction of the new trail. Noise and visual impacts in the construction area entrance area would temporarily inconvenience park visitors, especially during construction near the VAC. Visitor safety would be enhanced by providing a facility separate from the park road for bicycle users and pedestrians. Visitor use opportunities in the developed area would benefit by providing a trail that connects the visitor center/depot with the gateway community. Visitor enjoyment would be enhanced by the inclusion of waysides that interpret wetland functions, among other natural and cultural features.

Construction of the trail would remove a significant part of the vegetative buffer that surrounds the VAC and keeps the forest as the main component of the view from the VAC and from the park road, as well as limiting the view of the VAC from the Nenana Canyon. The view from the VAC and the park would include a focus on the landscape of commercial facilities in the Nenana Canyon, rather than on park landscapes.

Cumulative Effects: Additional projects to enhance recreational opportunities in the eastern end of the park are being proposed or are under construction. They would include a new Visitor Center, Murie Science and Learning Center, new hiking trails, a skiing trail in the Headquarters area, rehabilitated and new campsites at the Riley Creek Campground, and the railroad depot reconfiguration. All of these projects, including the proposed multi-purpose trail, are considered to benefit park visitor experiences and recreational opportunities.

Conclusion: This alternative would enhance visitor safety in Denali's entrance area and would provide visitors with a quality trail experience that could be used for point-to-point movement or for a recreational experience. There would be a moderate adverse effect on significant views from the VAC and from the park road by removing part of the forest buffer that shields the views of the businesses in the canyon.

Park Management

The proposed completion of a separated multi-purpose trail in the entrance area would support the goals in the DCP/EIS to provide more opportunities for recreation and education in the entrance area. This alternative would create safer facilities for both the vehicle operators on the park road as well as for the pedestrians and bicyclists making use of the trail. The installation of a fiber optic line would benefit park administration and researchers by creating a solid high-speed information link to the outside world. The trail route would benefit the fiber optic line installation by removing it geographically from future road improvement projects.

Cumulative Effects: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer for motor vehicles and make a facility that accommodates safe bicycle use.

Conclusion: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer and use of the trails more pleasant.

Local Communities/Socioeconomic Resources

The new trail would improve local community resources by providing another transportation link between the gateway community and the destinations within the park entrance area.

Cumulative Effects: Bicycle and pedestrian connections between the gateway community and the park entrance area will be used for the first time in 2004. Future multi-purpose connections are being planned to connect the McKinley Village area to the park entrance. Additional pedestrian and bicycle traffic in both directions would likely have positive economic spinoffs, because the range of activities would thus expand, creating interest in visitors to stay longer or to have a return visit.

Conclusion: The proposed trail would complement the new pedestrian trails and bridge being constructed outside the park and would likely create more opportunities for visitors to the gateway community and would increase the satisfaction with a visit, which should stimulate the local economy.

Alternative 4 – Construct New Southside Multi-Purpose Trail in Entrance Area (NPS Preferred Alternative)

Vegetation, Wetlands and Soils

Under this alternative approximately 0.9 acre of hybrid black spruce-white spruce forest community would be removed for the construction of the multi-purpose trail. An additional one acre of white spruce-mixed forest community would be removed for trail construction and another 0.4 acres of recently disturbed ground with seral shrubs on it would be affected by fiber optic installation in previously disturbed areas adjacent to the park road. The limited vegetation removal from this alternative would not have a significant impact on the thousands of acres of taiga forest and other vegetation resources near the park entrance area.

Approximately one acre of palustrine forested, needle-leaved evergreen, seasonally flooded wetlands would be removed during trail construction. These wetlands were determined by the U.S Army Corps of Engineers to *not* be jurisdictional wetlands requiring a Clean Water Act, Section 404 fill permit because these wetlands are not directly connected to any navigable waters of the USA (Don Rice, personal communication). This type of wetland is common locally and regionally and the filling of one acre would not affect the flood retention, habitat or other values received from wetlands. Though wetlands can provide important wildlife habitat and buffer surrounding areas from flooding, the small area that would be impacted and adequate drainage under the trail would reduce these impacts to a minor effect. Up to 6 acres of wetland between the proposed trail and the existing roadside trail between the VAC and the railroad tracks could be indirectly affected by the trail, due to the channeling of water under the trail through culverts; some of the wetland might not have as much of a water supply as it would without the channeling effects of the culverts. This potential effect would be mitigated by placing culverts every 100 feet so under the trail so that the drainage fans below the culverts would connect very closely to the northside of the trail.

A few inches of organic soil attached to the vegetation would be removed from the length of the trail. The soil type in the wetlands and uplands are common under black spruce and white spruce forests. The soils would be used in the reclamation of nearby lands reclaimed at the site of the old park hotel.

Cumulative Effects: Commercial and private development as well as the growth of transportation and utility systems in and near the Denali frontcountry have resulted and would continue to result in the loss of several hundred acres of spruce forest, especially in the Nenana River corridor outside the park boundary. Additional commercial and private development along the Nenana River corridor is expected to result in the disturbance of hundreds of acres of vegetation and soils during the foreseeable future. Minor loss of and disturbance to vegetation and soil in the park entrance area and along the park road corridor has occurred because of previous development, primarily visitor facilities and construction and maintenance of roads and trails. The total disturbance in the park development zone between the Nenana River and new Visitor Center is about 84 acres. This includes acres of cleared vegetation for the George Parks Highway, Denali Park Road, VAC, Visitor Center, MSLC, Riley Creek Campground, Riley Creek Mercantile, sewer treatment plant, airstrip, railroad, former Morino Campground, bus maintenance facilities, concession housing, and area trails. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact to vegetation and soils in the entrance area from implementation of this trail project would be about 2% of the total disturbance in the park entrance area. These incremental impacts would not result in significant cumulative impacts on vegetation and soils.

About 4.1 acres of wetlands have been impacted by previous road, trail, and building construction in the park entrance area. The entrance area of the park between the new Visitor Center and the Nenana River contains about 25 acres of similar non-jurisdictional wetlands. This project would further impact 0.9 acres of wetlands in the entrance area for a total displacement of 5 acres out of about 25 acres of wetlands in the immediate entrance area, or about 20%. Because

the area of wetlands adversely impacted would be small and the relative wetlands value is low, there would be no net loss of wetlands or wetlands function in the park.

Conclusion: The clearing of trees, shrubs, other vegetation, and the disturbance to soil on 2 acres would result in a limited adverse impact to vegetation and soil. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

The clearing of 0.9 acres of palustrine forested wetlands for the trail construction would result in a minor net loss of wetlands and wetlands functions in the park entrance area. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wildlife and Habitat

Wildlife habitat for large mammals, small mammals, and birds would be reduced by approximately 1.9 acres. There would be a minor increase in impacts to local moose calving habitat during late May because the proposed trail realignment would bring a popular facility within the perimeter of an area of relatively high quality cover. During the construction period noise and human activity would disturb wildlife and cause them to be temporarily displaced from the affected and adjacent areas. There are no known raptor nests along the proposed alignment. Both small mammals and birds would find extensive acreage of similar habitat adjacent to the trail acreage lost.

Cumulative Effects: Approximately 84 acres of wildlife habitat has been disturbed in the entrance area between park headquarters and the Parks Highway. This includes acres of cleared vegetation for the VAC, Riley Creek Campground, Riley Creek Mercantile, water treatment plant, airstrip, railroad depot, park road, Visitor Center complex, and science center complex. No other construction projects are anticipated along this part of the road corridor. An additional 15 acres of vegetation clearing is expected under the hazardous fuels management plan to remove hazardous fuel around park buildings. The incremental impact from this project to wildlife and habitat in the entrance area would add about 2 % to the total existing disturbed area near the park entrance. Because thousands of acres of similar habitat exist in the vicinity, there exists a moderate cumulative impact on wildlife and habitat in the park entrance area and this alternative would be a minor contributor to that impact.

Conclusion: The clearing of trees, shrubs, and other vegetation comprising 2 acres of wildlife habitat would result in minor adverse impacts on wildlife and habitat. The impact to wildlife and habitat would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Air Quality

Local air quality would be temporarily reduced by the limited use of heavy machinery during construction activities. Long-term air quality in the park would benefit slightly from the increased use of bicycles for in-park transportation.

Cumulative Effects: Air quality in Denali National Park's entrance area is affected by emissions from the Healy coal-fired power plant (about 8 miles north), the AKRR diesel engines, bus and

vehicular traffic in the entrance area and along the George Parks Highway, and the park power plants and heating units. A park emissions inventory has not yet been conducted, but the temporary incremental increase in emissions from construction equipment would be negligible.

Conclusion: The reduction in air quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in intensity. It is possible that more use of improved bicycle trails would reduce the use of motor vehicles and improve air quality. Though an incremental improvement is expected from a reduction in vehicle emissions from the use of bicycles, the net effect would be small compared to the potential air quality effects from outside sources. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Sound Quality

Park sound quality would decrease during the period of construction of the trail and installation of the fiber-optic line, especially during periods when heavy equipment is being used. This impact would be minor because the road corridor sounds are already impacted from vehicular traffic on the park road. Individuals using the trail after construction would have a marginally better natural sounds experience by being on a trail further away from the road than the one currently in use.

Cumulative Effects: Sound quality in Denali National Park's entrance area is affected by bus and vehicular traffic in the entrance area and along the George Parks Highway, the AKRR diesel engines, and airplanes. The temporary incremental increase in noise from construction equipment on the trail would be negligible.

Conclusion: The temporary reduction in sound quality due to the use of heavy equipment to construct the trail and install the fiber optic line would be temporary and limited in area affected. It is possible that more use of improved bicycle trails would reduce the use of motor vehicles and improve sound quality. Though an incremental improvement is expected from a reduction in vehicle noise by the use of bicycles, the net effect would be small compared to the potential sound quality effects from continuing vehicular traffic. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park.

Cultural Resources

No cultural resources are known from the areas that the proposed trail would pass through. Should presently unidentified cultural resources be discovered during the project, the superintendent and cultural resources manager would be immediately notified.

Cumulative Effects: The proposed project would not impact known cultural resources. Significant sites in the entrance area would remain intact and undisturbed. Historic sites that have been affected by modern activities, mainly accidental fire, include the Morino Roadhouse and Kennedy site. All known significant archeological and historic sites in the entrance area would remain intact and undisturbed.

Conclusion: The project would not result in an impairment of park cultural resources that fulfill specific purposes identified in legislation establishing the park and effects would be consistent with the mandates of the NHPA.

Visitor Use and Recreation

Recreational opportunities for entrance area visitors would be temporarily affected by the construction of the new trail. Noise and visual impacts in the construction area entrance area would temporarily inconvenience park visitors, especially during construction near the VAC. Visitor safety would be enhanced by providing a facility separate from the park road for bicycle users and pedestrians. Visitor use opportunities in the developed area would benefit by providing a trail that connects the visitor center/depot with the gateway community. Construction of the trail would not significantly affect the landscape view from either the park road or from the trail. Visitor enjoyment would be enhanced by the inclusion of waysides that interpret wetland functions, among other natural and cultural features.

Cumulative Effects: Additional projects to enhance recreational opportunities in the eastern end of the park are being proposed or are under construction. They would include a new Visitor Center, Murie Science and Learning Center, new hiking trails, a skiing trail in the Headquarters area, rehabilitated and new campsites at the Riley Creek Campground, and the railroad depot reconfiguration. All of these projects, including the proposed multi-purpose trail, are considered to benefit park visitor experiences and recreational opportunities.

Conclusion: The preferred alternative would enhance visitor safety in Denali's entrance area and would provide visitors with a quality trail experience that could be used for point-to-point movement or for a recreational experience.

Park Management

The proposed completion of a separated multi-purpose trail in the entrance area would create safer facilities for both the vehicle operators on the park road as well as for the pedestrians and bicyclists making use of the trail. The installation of a fiber optic line would benefit park administration and researchers by creating a solid high-speed information link to the outside world. The trail route would benefit the fiber optic line installation by removing it geographically from future road improvement projects.

Cumulative Effects: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer and use of the trails more pleasant.

Conclusion: The proposed trail project would provide a continuous link between the major visitor destinations in the park entrance area with the gateway community for pedestrians and bicyclists. This facility would make use of the park road safer and use of the trails more pleasant.

Local Communities/Socioeconomic Resources

The new trail would improve local community resources by providing another transportation link between the gateway community and the destinations within the park entrance area.

Cumulative Effects: There would likely be an increase of pedestrian and bicycle use on the roadside trail under construction in the gateway community as well as on trails leading to destinations within the park entrance area. Additional traffic in both directions would likely have positive economic spinoffs.

Conclusion: The proposed trail would complement the new pedestrian trails and bridge being constructed outside the park and would likely create more opportunities for visitors to the gateway community and would increase the satisfaction with a visit, which should stimulate the local economy.

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APPENDIX A
SUBSISTENCE - SECTION 810(a) OF ANILCA
SUMMARY EVALUATION AND FINDINGS

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluation of potential restrictions to subsistence activities that could result from the construction of a new multi-purpose in the entrance area of Denali National Park and Preserve.

II. THE EVALUATION PROCESS

Section 810(a) of ANILCA states:

"In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands . . . the head of the federal agency . . . over such lands . . . shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency -

(1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805;

(2) gives notice of, and holds, a hearing in the vicinity of the area involved; and

(3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions."

ANILCA created new units and additions to existing units of the National Park System in Alaska. Denali National Park and Preserve was created by ANILCA Section 202(3)(a):

"The park additions and preserve shall be managed for the following purposes, among others: To protect and interpret the entire mountain massif, and additional scenic mountain peaks and formations; and to protect habitat for, and populations of, fish and wildlife, including, but not limited to, brown/grizzly bears, moose, caribou, Dall sheep, wolves, swans and other waterfowl; and to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities."

Title I of ANILCA established national parks for the following purposes:

". . . to preserve unrivaled scenic and geological values associated with natural landscapes; to provide for the maintenance of sound populations of, and habitat for, wildlife species of inestimable value to the citizens of Alaska and the Nation, including those species dependent on vast relatively undeveloped areas; to preserve in their natural state extensive unaltered arctic tundra, boreal forest, and coastal rainforest ecosystems to protect the resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers, and lands, and to preserve wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting, within large arctic and subarctic wildlands and on free-flowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems.

". . . consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for which each conservation system unit is established, designated, or expanded by or pursuant to this Act, to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so."

The potential for significant restriction must be evaluated for the proposed action's effect upon ". . . subsistence uses and needs, the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate the use. . . ." (Section 810(a))

III. PROPOSED ACTION ON FEDERAL LANDS

Alternatives 1 through 4 are described in detail in the environmental assessment. Customary and traditional subsistence use on NPS lands will continue as authorized by federal law under all alternatives. Federal regulations implement a subsistence priority for rural residents of Alaska under Title VIII of ANILCA.

The NPS proposes to create a 1.3 mile long multi-purpose trail within the entrance area of Denali National Park and Preserve. The site is in the former Mount McKinley National Park wherein subsistence activities are not allowed.

IV. AFFECTED ENVIRONMENT

Subsistence uses within Denali National Park and Preserve are permitted in accordance with Titles II and VIII of ANILCA. Section 202(3)(a) of ANILCA authorizes subsistence uses, where traditional, in the northwestern and southwestern preserves of Denali National Preserve. Lands within former Mount McKinley National Park are closed to subsistence uses.

A regional population of approximately 300 eligible local rural residents qualifies for subsistence use of park resources. Resident zone communities for Denali National Park and Preserve are Cantwell, Minchumina, Nikolai, and Telida. By virtue of their residence, local rural residents of

these communities are eligible to pursue subsistence activities in the new park additions. Local rural residents who do not live in the designated resident zone communities, but who have customarily and traditionally engaged in subsistence activities within the park additions, may continue to do so pursuant to a subsistence permit issued by the Park Superintendent in accordance with state law and regulations.

The NPS realizes that Denali National Park and Preserve may be especially important to certain communities and households in the area for subsistence purposes. The resident zone communities of Minchumina (population 22) and Telida (population 11) use park and preserve lands for trapping and occasional moose hunting along area rivers. Nikolai (population 122) is a growing community and has used park resources in the past. Cantwell (population 147) is the largest resident zone community for Denali National Park and Preserve, and local residents hunt moose and caribou, trap, and harvest firewood and other subsistence resources in the new park area.

The main subsistence species, by edible weight, are moose, caribou, furbearers, and fish. Varieties of subsistence fish include coho, king, pink and sockeye salmon. Burbot, dolly varden, grayling, lake trout, northern pike, rainbow trout and whitefish are also among the variety of fish used by local people. Beaver, coyote, land otter, weasel, lynx, marten, mink, muskrat, red fox, wolf and wolverine are important furbearer resources. Rock and willow ptarmigan, grouse, ducks and geese complete the park/preserve subsistence small game list.

The NPS recognizes that patterns of subsistence use vary from time to time and from place to place depending on the availability of wildlife and other renewable natural resources. A subsistence harvest in any given year may vary considerably from previous years because of such factors as weather, migration patterns and natural population cycles. However, the pattern is assumed to be generally applicable to harvests in recent years with variations of reasonable magnitude.

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources that could be impacted.

The evaluation criteria are:

- the potential to reduce important subsistence fish and wildlife populations by (a) reductions in numbers; (b) redistribution of subsistence resources; or (c) habitat losses;
- the affect the action might have on subsistence fishing or hunting access; and
- the potential to increase fishing or hunting competition for subsistence resources.

The potential to reduce populations:

Construction and use of a new multi-purpose trail in the entrance area would have a long-term but minor impact on wildlife habitat and populations. The use of the trail would supplant existing use by pedestrians on the Roadside Path and by some bicyclists on the park road.

The alternatives would not adversely affect the distribution or migration patterns of subsistence resources. Therefore, no change in the availability of subsistence resources is anticipated as a result of the implementation of this proposed action.

Restriction of Access:

All rights of access for subsistence harvests on NPS lands are granted by Section 811 of ANILCA. Denali National Park and Preserve is managed according to legislative mandates, NPS management policies and the park's General Management Plan. No actions under the alternatives described in the environmental assessment should affect the access of subsistence users to natural resources in the park and preserve.

Increase in Competition:

The alternatives should not produce any increase in competition for resources to subsistence users.

If, and when, it is necessary to restrict taking, subsistence uses are the priority consumptive users on public lands of Alaska and will be given preference on such lands over other consumptive uses (ANILCA, Section 802(2)).

Continued implementation of provisions of ANILCA should mitigate any increased competition, however significant, from resource users other than subsistence users. Therefore, the proposed action would not adversely affect resource competition.

VI. AVAILABILITY OF OTHER LANDS

Choosing a different alternative would not decrease the impacts to park resources for subsistence. The preferred alternative is consistent with the mandates of ANILCA, including Title VIII, and the NPS Organic Act.

VII. ALTERNATIVES CONSIDERED

The alternatives considered for this project were limited to the lands in the entrance area to the park. The alternatives are: 1) continue the existing conditions (No Action) which includes use of the Roadside Path by pedestrians and use of the park road by bicyclists; 2) widening the Roadside Path to 10 feet to accommodate bicycles, 3) create a new 10-foot wide multi-purpose trail in the forest near the northside of the park road all the way from the entrance to the railroad tracks, and: (4) create a new 10-foot wide multi-purpose trail in the forest near the southside of the park road all the way from the entrance to the railroad tracks.

VIII. FINDINGS

This analysis concludes that the preferred alternative would not result in a significant restriction of subsistence uses.

