

National Park Service
U.S. Department of the Interior

Denali National Park and Preserve
Alaska



Savage River Area Rest Stop

Environmental Assessment

February 2006

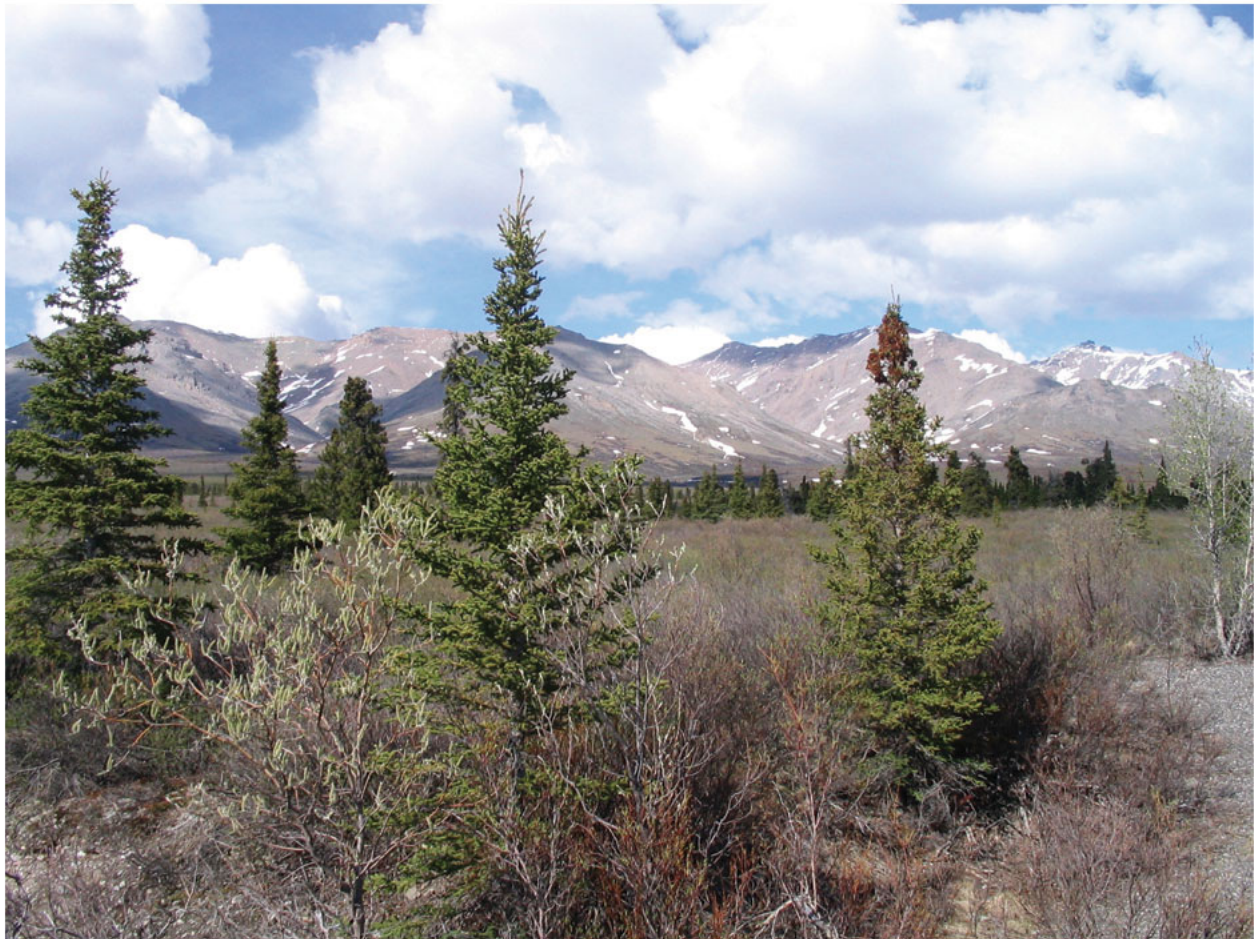


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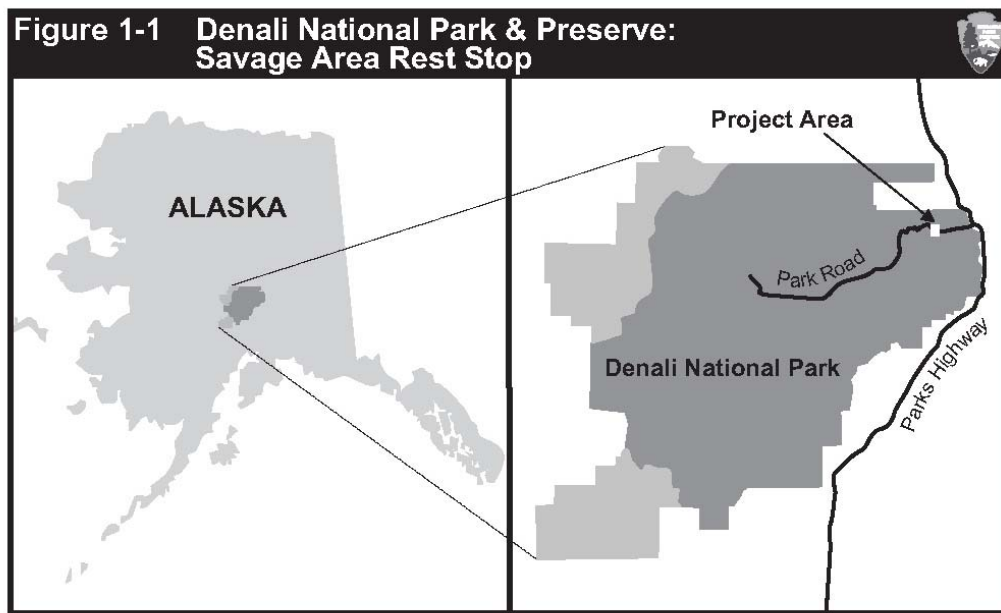
ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ANILCA	Alaska National Interest Lands and Conservation Act of 1980
APE	Area of Potential Effect
BMPs	Best Management Practices
CAA	Clean Air Act of 1977
CFR	Code of Federal Regulations
DCED	Department of Commerce, Community and Economic Development
DCP/EIS	Development Concept Plan and Environmental Impact Statement
DENA	Denali National Park and Preserve
DNHT	Denali Natural History Tour
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
Frontcountry	Park Entrance Area and Road Corridor
GMP	General Management Plan
MBTA	Migratory Bird Treaty Act
MP	Milepost
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
NPS	National Park Service
PMIS	Project Management Information System
PV	Photovoltaic
ROD	Record of Decision
RV	Recreational Vehicle
SHPO	State Historic Preservation Office
SOF	Statement of Findings
SST	Sweet Smelling Toilet
USACE	U.S. Army Corp of Engineers
USFWS	U.S. Fish and Wildlife Service

1.0 PURPOSE AND NEED FOR ACTION

1.1 Purpose of and Need for Action

The National Park Service (NPS) is considering the construction of a rest stop near the Savage Campground in Denali National Park and Preserve (DNA) (Figure 1-1). The project was identified and approved in the DNA Entrance Area and Road Corridor Development Concept Plan and Environmental Impact Statement (DCP/EIS) (NPS 1996; NPS 1997). This frontcountry rest stop would include auto, RV and bus parking, a bus stop, interpretive exhibits, a covered



deck and vault toilets (Sweet Smelling Toilets [SSTs]). The rest stop would offer possible future trailheads for the Savage Alpine Trail and a short interpretive loop trail. The project construction would be scheduled for the summer of 2008. Complete descriptions of the proposal and alternatives are in Chapter 2.

The project is needed to provide for increased visitor use and enjoyment in the park's entrance area and road corridor (frontcountry). The DCP/EIS identified increases in visitor use in the park and the associated need for certain frontcountry visitor facilities. This project was mentioned in the DCP/EIS as one of several ways to provide for increased visitor use and enjoyment. The existing rest stops do not meet the visitor needs. The new rest stop would enhance visitors' experiences in the park by providing opportunities to experience nature and gain a greater understanding of the park's values.

Drivers frequently stop in the roadway to view wildlife and scenery. The new rest stop would provide additional parking areas for visitors to view wildlife and scenery, and for leisurely day use activities.

This environmental assessment (EA) analyzes the proposed action and alternatives and their impacts on the environment. The EA has been prepared in accordance with the National

Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1508.9).

1.2 Background

1.2.1 History of the Site

The first 15 miles of the Denali Park Road were developed for wagons in 1922. The Alaska Road Commission, acting as the NPS contractor, began construction of a graded road in 1923, finishing the 92-mile road to Kantishna in 1938. The first 15 miles of the park road, to the Savage River Bridge, was paved in 1967-1968.

Park visitors may travel this unrestricted section by shuttle bus, tour bus, private vehicle, bicycle or foot. Beyond the Savage River Bridge, private vehicles are restricted. There are numerous pullouts between the park entrance and the bridge. Most of these pullouts are small, with room for three to six cars. In 2005 the east pullout at the Savage River Bridge was improved with SST-type vault toilets, interpretive exhibits, picnic area, a trailhead and the roadbed was leveled. The pullout at mile 11.5 has an interpretive wayside exhibit about the view of Mount McKinley. The 29-site Savage Campground, located near mile 12.4, provides water and rest rooms for campers, but it is generally not used by other park visitors.

The old Savage Camp, southeast of the existing Savage Campground, operated as a tourist camp from 1922 to about 1939. The camp provided tent-based lodging, food, and guided tours further into the park. Once the Park Station Hotel opened in 1939, the old Savage Camp buildings fell into disrepair and the site was demolished in the early 1950s. Evidence of a gravel road and airstrip remain today. There is no specific access to the historic site, other than an unmarked trail from the nearby campground.

The Savage Cabin was built in 1925. It served as an Alaska Road Commission cook house and later as a park patrol cabin. It was moved to its present location in 1940 where it continues to serve as a winter patrol cabin and a summer historic interpretive exhibit. A pullout near the historic cabin provides bus and car parking, temporary chemical toilets, and a short interpretive loop trail to the cabin. The parking area has room for four tour or shuttle buses and eight cars. The Denali Natural History Tour (DNHT) makes a scheduled stop there.

1.2.2 Park Purpose and Significance

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.

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, approximately 1,330,000 acres of public land as Denali National Preserve, and re-designated the entirety as Denali National Park and Preserve. ANILCA directs the NPS to preserve the natural and cultural

resources in DENA for the benefit, use, education, and inspiration of present and future generations.

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. (United States Code 1980)

The park's General Management Plan (GMP) (NPS 1986) notes that park purposes are identified in the enabling legislation (1917) as well as in ANILCA. In addition, the GMP recognizes the national and international significance of DENA; the park is also designated as a biosphere reserve.

1.2.3 Laws, Regulations, and Policies

The 1916 NPS 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 NPS 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). Amendments to the NPS Organic Act in the National Park System General Authorities Act of 1970 and in Redwoods National Park Expansion Act of 1978 expressly articulated the role of the national park system in ecosystem protection. The 1978 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-a1.)

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 EA. 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 GMP or other relevant NPS planning documents.

1.2.4 Relationship of the Proposal to Other Planning Projects

Many plans have been developed for DENA, including the GMP and the DCP/EIS. The GMP is a broad planning document, setting general management direction for the park. The DCP/EIS covers the entrance area and road corridor or the frontcountry of DENA. The DCP/EIS amended the GMP.

This EA is a project-specific analysis tiered to the approved DCP/EIS and GMP. Tiering refers to a process of multiple levels of planning, from broad plans to site-specific plans. The specific plans implement the broad directions and general concepts identified in prior plans. This EA is an implementation plan for the DCP/EIS and GMP.

With DENA’s well-known reputation for outstanding features and relative ease of access, the GMP forecasts that visitation will continue to increase. The plan’s focus is on managing the visitor use to ensure access to a high quality wilderness experience for visitors of all ages and abilities while ensuring that the natural and cultural values are not degraded.

The DCP/EIS provides direction for road management and facility development to meet a wide range of visitor needs and interests in DENA’s frontcountry. As part of the overall program for managing visitor use and resource protection, the DCP/EIS identifies management subzones, amending the park development zone set forth in the GMP.

This EA notes and corrects errors in map detail for subzones in the Savage Campground area. It does not amend the GMP or the DCP/EIS. The DCP/EIS, on page 45, has a map titled “Management Subzones: Savage Campground to Primrose Rest Area.” That map erroneously included a portion of the Development Subzone (D-2) overlapping the Wilderness Zone in the area of the Savage Cabin and access trail. The maps in this EA correct this error by removing the Development Subzone from the Wilderness Zone. The DCP/EIS map includes a single dash utility symbol, indicating a water line from a well near the Savage Cabin to the Savage Campground. The well, in wilderness, was decommissioned in 2005, and the water line is no longer in use. This EA has more detailed maps in which the utility notation has been dropped. The location of the Wilderness Zone is shown in this EA to more accurately approximate the legal boundary description.

The projected duration of the DCP/EIS is 15-20 years. Changes in the frontcountry are focused on actions in which the NPS has traditionally specialized, such as interpretive centers, environmental education opportunities, trails, campgrounds, and resource protection programs. Specific to the action proposed in this EA, the Record of Decision (ROD) for the DCP/EIS includes the following actions:

- A new permanent rest area to be constructed at Savage River, with interpretive exhibits and short loop trails.

- New trails to be constructed in the Savage River area. The Savage River trail system will provide a range of different length hikes for visitors ranging from tour bus passengers with limited time to visitors seeking an all-day experience.
- Expand interpretive opportunities in DENA interior by adding programs at the Savage Cabin and installing exhibits at new rest areas.

1.3 Issues

To focus the EA, the NPS selected specific issues for further analysis and eliminated others from evaluation. Issues brought forward for analysis in this EA were determined through scoping meetings and conversations with park staff, and through comments obtained during the public meeting held on June 23, 2005 at DENA.

1.3.1 Issues Selected for Detailed Analysis

Vegetation and Soils

Low and tall shrub vegetation and mixed white spruce and hardwood forest vegetation, would be removed or disturbed during the construction of a rest stop in the project area. Invasive plants could colonize bare soils that are exposed during the construction process.

No threatened or endangered plants are known to occur in DENA. However, one plant species, the pink dandelion (*Taraxacum carneocoloratum*), is considered a federal species of concern (former Candidate 2 species) and is found on alpine slopes and other coarse, well-drained substrates (NPS 2005). Therefore, it could possibly occur in the project area.

Existing soil strata would be altered or removed, and land contours could be changed, as a result of construction of the proposed Savage River Area Rest Stop.

Wetlands

Wetlands could be filled or disturbed by the proposed action. NPS guidelines require a 1:1 compensation for impacts to wetlands, and a Wetlands Statement of Findings (SOF) is attached as Appendix A.

Wildlife and Habitat

Development of a new rest stop could reduce habitat for wildlife. Sheep, bear, caribou, moose, and wolves in particular, utilize the area in the vicinity of the project area; therefore, they could be affected by new development. Construction activities associated with the proposed development would temporarily produce noise and activity levels that could disturb wildlife.

Although currently no Endangered Species Act (ESA)-listed bird species occur in DENA, one federal species of concern, the olive-sided flycatcher, could be within the project area, nesting in open coniferous forests with bog ponds and marshy streams, and in woodland/dwarf forests. These birds' nests are typically built in black spruce trees located near drainages (NPS 2005, p.124).

The State of Alaska maintains a "species of special concern" list. Species on this list that occur within DENA include the American peregrine falcon, olive-sided flycatcher, gray-cheeked thrush, and blackpoll warbler. These species could potentially occur in the project area, although little is known about population abundance or distribution (ADF&G 1996).

Wilderness

No structures or fill areas would encroach upon designated wilderness areas. All of the proposed alternatives would be built in the road corridor and/or the Savage Campground wilderness exclusion zone. The road corridor is excluded from wilderness designation. The non-wilderness zone extends 150 feet from the centerline of the existing road, or 150 feet from the edge of pullouts existing as of 1980. Other areas are also excluded from wilderness designation, such as around the Savage Campground (see Figure 2-1).

New rest stop facilities may be seen from designated wilderness. Associated activities may be heard from points in the wilderness area. Activities associated with the proposed development could also include hiking on or off of trails; there could be additional trampling and increased visitor use in designated wilderness areas.

Cultural Resources

Historic resources are documented at the old Savage Camp and Savage Cabin areas. Cultural resources would not likely be directly impacted by the construction of a rest stop in the vicinity of either location. However, proposed development and concentrated visitor use in the area could change the character of the sites. Unknown subsurface cultural resources could be disturbed by construction activities.

Visitor Use and Recreation

Recreation and education opportunities for park visitors would increase with the construction of a new rest stop without increasing use on the restricted portion of the Denali Park Road. Opportunities for longer stays in DENA for the independent traveler would be enhanced as would opportunities for an additional DNHT or shuttle bus stop between the entrance area and Savage River.

Recreation opportunities could be temporarily affected by the construction of the new rest stop as certain pullouts or areas could be unusable during the construction period. In addition, noise and dust associated with construction could impact the visitor experience.

Drivers frequently stop in the roadway to view wildlife and scenery. The new rest stop would provide additional parking areas for visitors to view mountain scenery and wildlife, and for leisurely day use activities.

The scale of proposed development could alter visitor experiences. While the proposed project would be within the road corridor in the park's frontcountry, such developments could reduce the primitive character of the area, changing it to a more developed character.

Visual Resources

The visual resources within the planning area could be altered by the new rest stop. There would be increased traffic and dust during the construction phase of the project, impacting the viewshed from the road. A rest stop constructed in a location that is currently undeveloped could diminish opportunities for unobstructed views, or diminish the integrity of historic viewpoints from the road. However, a new rest stop facility could also provide increased opportunities for access to new or different vantage points from which to experience the park.

Local Communities/Socioeconomic Resources

The new rest stop could encourage visitors to spend more time in the park and vicinity. Longer stays in DENA and vicinity could provide stimuli to the local economy. Spending on construction could provide a short-term, temporary stimulus to the local economy.

1.3.2 Issues Dismissed from Detailed Analysis

The following issues (impact topics) have been considered but dismissed from detailed analysis. Issues dismissed from detailed analysis will not be addressed further in this EA.

Threatened and Endangered Species

The ESA 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 ESA, the U.S. Fish and Wildlife Service (USFWS) has been consulted. No federally designated threatened or endangered species are known to occur within DENA (Swem 2000), and none are anticipated to be affected by the proposed project. No species proposed for listing occur in DENA, and no critical habitat occurs in the park.

Air Quality

Both the Clean Air Act of 1977 (CAA) and NPS (NPS 2000) require the NPS to consider air quality impacts from their projects. DENA is a Federal Class 1 Air Quality Area under the CAA. Air quality is monitored near park headquarters and no exceedances of National Ambient Air Quality Standards have been documented within the park (Blakesley 2005). Construction within the park associated with this project would include, for example, generation of fugitive dust, and exhaust from dump trucks, chain saws and generators. Construction would result in short-term, localized impacts that are unlikely to exceed the National Ambient Air Quality Standard. Therefore, air quality was dismissed from detailed analysis in this EA.

Water Resources

None of the proposed action alternatives are located directly adjacent to surface water bodies (streams or lakes). Therefore there would be no direct impacts on water resources.

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 plan 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.

Floodplains

NPS 1993 Guidelines on Floodplain Management, which implement Executive Order 11988, state that both picnic facilities and associated day-time parking facilities in non-high hazard areas are excepted actions from further compliance with the guidelines. None of the proposed alternatives lie in high-hazard areas. The project area is on a slope formed as an alluvial fan. The fan has been long stabilized and is vegetated with forest trees and understory shrubs. Active flooding on the forested part of the alluvial fan stopped prior to the earliest development in the area, the park road, as evidenced by the 6 inches or so of soil development. The exposed gravel

along the side of the unnamed creek bed to the east may have been an active floodplain prior to 1925 when the first road improvements started keeping the creek waters in the main channel.

Subsistence

Subsistence activities are not allowed in the project area. An ANILCA §810 evaluation is attached in Appendix B.

1.4 Permits and Approvals Needed to Implement Project

1.4.1 Wetlands Fill

Discharge of fill material into wetlands could require a permit from the U.S. Army Corp of Engineers (USACE) under Section 404 of The Clean Water Act. However, according to a recent determination by USACE (Don Rice, pers. comm.), the project would not affect wetlands under its jurisdiction. Wetlands impacts would, however, need an NPS Statement of Findings (see Appendix B) as well as mitigation by rehabilitating damaged wetlands in another area.

1.4.2 Septic System

The new vault toilets (SSTs) would need a Permit to Construct and a Permit to Operate, both of which are issued by the Alaska Department of Environmental Conservation (ADEC).

2.0 ALTERNATIVES

2.1 Introduction

This section describes the range of reasonable alternatives, including the two action alternatives and a no action alternative. Also discussed are any alternatives and actions that have been considered but dismissed from further analysis.

The proposed work for this project includes the construction of a new rest stop facility. The scope of facilities was generally guided by the DCP/EIS and includes:

- Parking for 18 automobiles, 8 RVs and 4 buses
- Designated stop for Savage Shuttle
- Covered viewing deck(s)
- Wayside Exhibits
- Trailhead for Savage Alpine Trail
- Vault-type SST rest room facilities (8 toilets)
- Replacement of the temporary chemical toilets near the Savage Cabin pullout with permanent rest room facilities.

Table 2-1 summarizes the components and attributes of each alternative. Table 2-2 summarizes the predicted impacts for each alternative on the issues of concern.

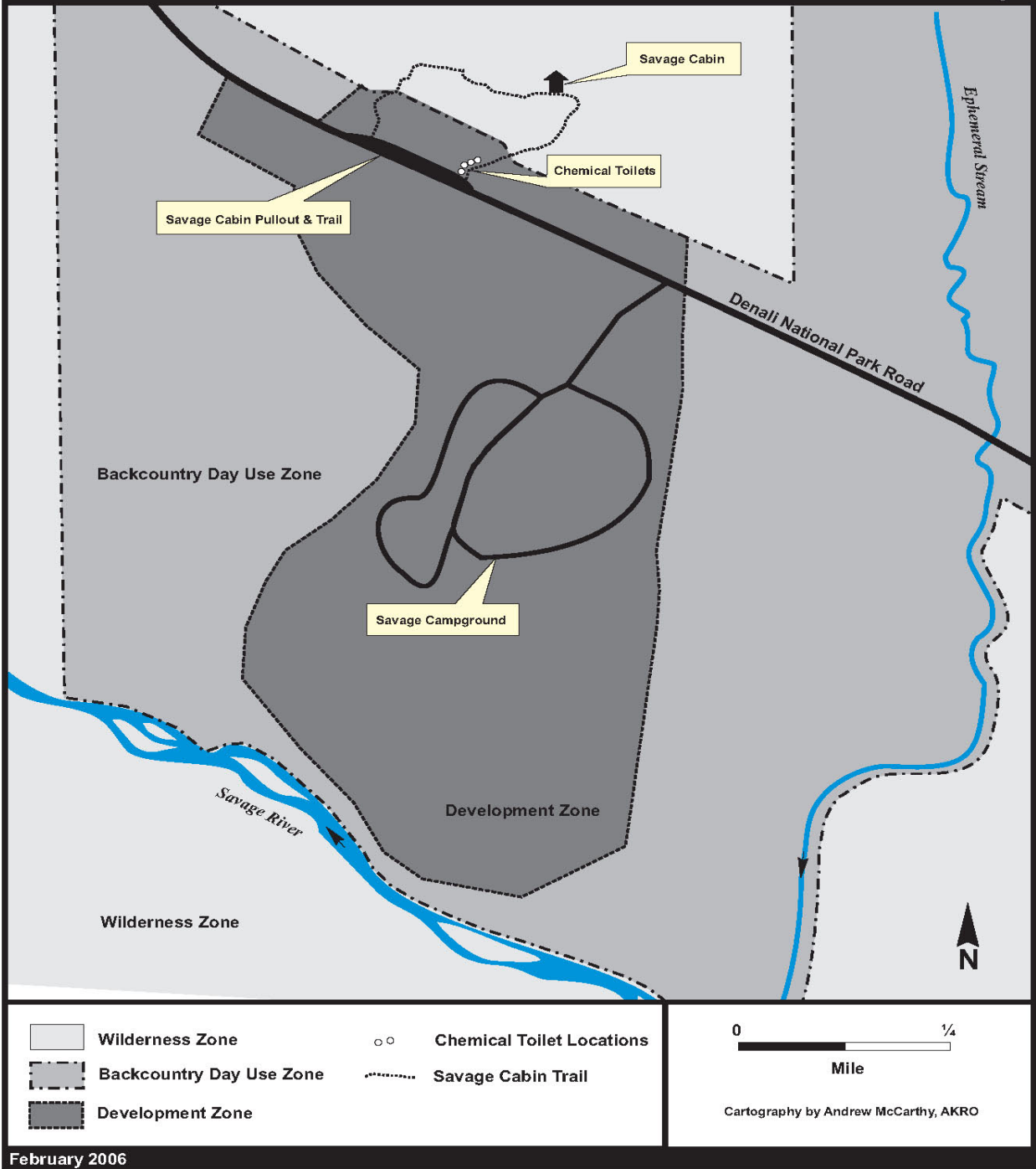
2.2 Alternative 1: No Action

Under Alternative 1, No Action, new construction would not take place and management practices would not change (Figure 2-1). Independent travelers would be able to drive the Denali Park Road to the Savage River Bridge checkpoint at mile 14.8. Visitors would have the option of stopping at any of the several small pullouts along the road for viewing wildlife and scenery. Some of the pullouts have a view of Mt. McKinley to the southwest. Beyond the park headquarters, public rest room facilities would be available at the Savage River Bridge West rest area (chemical toilets, scheduled to be replaced with SSTs in 2006), the Savage River Bridge East rest area (SSTs built in 2005), and the Savage Cabin pullout (six chemical toilets). Visitors could view wayside interpretive exhibits at the Savage River Bridge East rest stop, the Savage Cabin interpretive loop trail, and at the roadside pullout at mile 11.5. This no action alternative represents a continuation of the existing situation and provides a baseline for evaluating the changes and impacts of the action alternatives.

2.3 Alternative 2: NPS Preferred Alternative – East of Campground

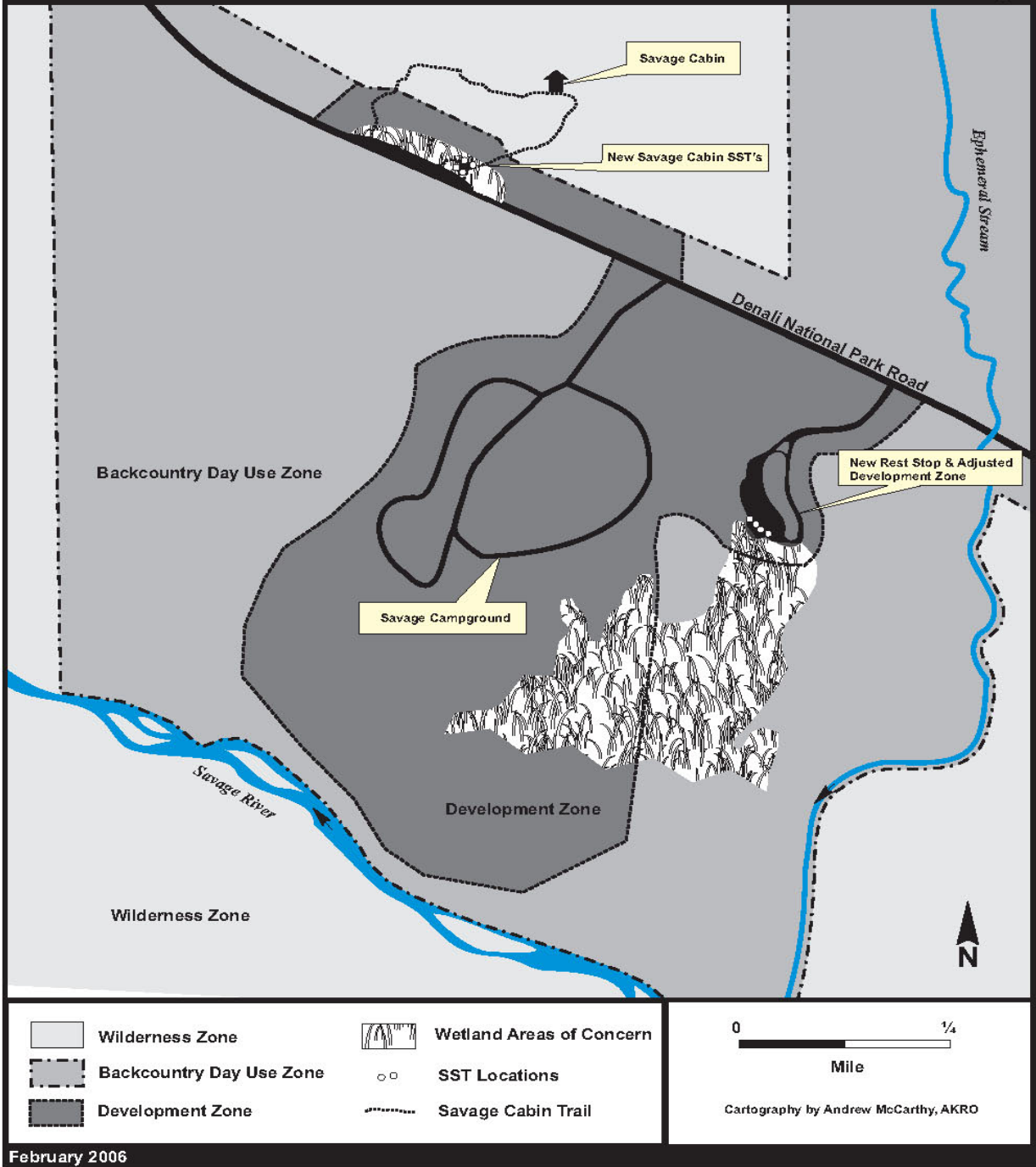
A single rest stop would be constructed east of the Savage Campground, near mile 12.3 (Figure 2-2). The rest stop would be well separated from the Denali Park Road. It would be built as a destination for the independent traveler and include 18 automobile parking spaces and 12 oversized parking spaces (8 for RVs and 4 for buses). Both mountain and wildlife viewing opportunities exist at this location.

Figure 2-1 Savage Area Rest Stop: No Action Alternative



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Figure 2-2 Savage Area Rest Stop: NPS Preferred Alternative



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The site is located outside the Wilderness Zone, in the Level 2 Development Zone and the Backcountry Day Use Zone identified in the DCP/EIS. If Alternative 2 were implemented, the subzone acreages would remain the same, but the shape of the zones would shift. The area to the west of the campground would be reclassified as Backcountry Day Use Zone, and the project area would be reclassified as Level 2 Development Zone (Figure 2-2).

This alternative would include a 300 ft long, two-way paved access road connecting to a one-way loop road leading to the paved parking area. Rest room facilities would consist of annually pumped vault toilets (SSTs). Gravel or paved paths would lead to covered vista points and interpretive wayside exhibits.

The development would cover about 2.1 acres. The area of potential effect (APE) would be about 2.4 acres and includes 15% for areas disturbed by clearing, equipment maneuvering, drainage, culverts, road shoulders and design refinement details.

In addition to this development east of the Savage Campground, four new double SSTs would be built across the road near the Savage Cabin pullout. The six existing chemical toilets would be removed and replaced with these SSTs, which would be located behind (to the NW of) the existing toilets, and accessed via a new 10-foot wide path that connects to the existing pullout and trail. The APE for the SST development at the Savage Cabin pullout would be about 0.1 acres. Therefore the total APE for Alternative 2 would be about 2.5 acres.

Geotechnical investigations would be conducted to test soil conditions. A Nodwell-mounted drill rig would be used to take approximately 16 borings in the area proposed for the rest stop, parking lot, access road and Savage Cabin pullout SSTs.

The restroom facilities would not include flush toilets, but would utilize an SST design seen elsewhere in the park. The SSTs would be suitable for winter use. The use of annually pumped vault SST facilities rather than water-based toilets would save water, lower the development footprint (no need for a water line from the campground), and lower the costs of construction, operation and maintenance. No site electricity would be provided, although supplemental lighting may be provided from photovoltaic (PV) panels on the structures.

2.4 Alternative 3: DCP Alternative – Northwest of Campground

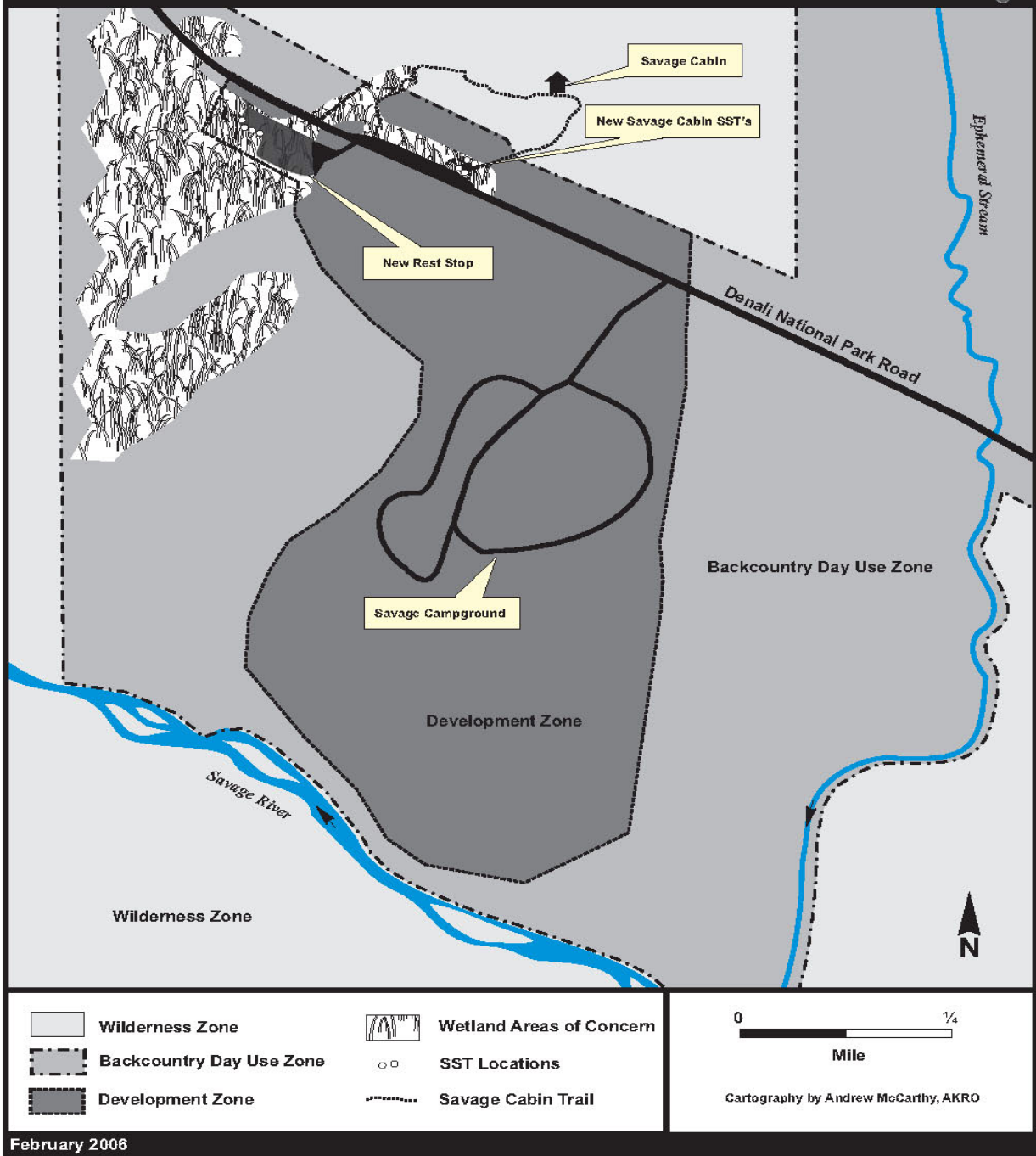
A single rest stop would be constructed near mile 12.5, northwest of the Savage Campground (Figure 2-3). The location is near to that conceptually identified in the DCP/EIS (page 31). The site would be within the existing Development Zone. The rest stop would be set near the Denali Park Road, employing a short access road (approximately 50 ft). The design of the parking area, SSTs and interpretive areas would be similar to that described for Alternative 2. This alternative would be waterless and would utilize the SST design seen elsewhere in the park. No site electricity would be provided although supplemental lighting may be provided from PV panels on the structures. The footprint for the rest stop would be similar to that described for Alternative 2, but with a shorter access road.

A common action to Alternatives 2 and 3 is the upgrade to the chemical toilets at the Savage Cabin pullout area. The six existing chemical toilets would be removed and replaced with four double vault SSTs, which will be located behind (to the NW) of the existing toilets, and accessed via a new 10-foot wide path that connects to the existing trail. The SSTs would be suitable for winter use.

The rest stop development would cover about 2.0 acres. The APE for the rest stop would be about 2.3 acres and includes 15% for areas disturbed by clearing, equipment maneuvering, drainage, culverts, road shoulders and design refinement details. The new SSTs near the Savage Cabin pullout would add about 0.1 acres. The total APE for Alternative 3 would be about 2.4 acres.

Geotechnical investigations would be conducted to test soil conditions. A Nodwell-mounted drill rig would be used to take approximately 16 borings in the area proposed for the rest stop, parking lot, access road and Savage Cabin pullout SSTs.

Figure 2-3 Savage Area Rest Stop: DCP Alternative



2.5 Mitigation and Monitoring

Mitigation measures are specific actions that, when implemented, reduce impacts, protect park resources or protect visitors. The following mitigation measures would be implemented under either action Alternative 2 or 3. They are considered part of the alternative proposals and they are assumed in the analysis of impacts.

2.5.1 Vegetation and Soils: Mitigations

Backslopes and fill slopes would be covered with coarse materials to discourage colonization by invasive plants. Off-road construction equipment would be pressure-washed prior to entering the park. Park staff would identify and list invasive species of concern. Imported gravel and fill dirt would come from materials sites that are free from these target invasive species, or the materials would be heated (run through a dryer). Park staff would verify that the material sites were free of target invasive species prior to their use. Disturbed soil areas would be revegetated as necessary, with native vegetation, following Roseanne Densmore's Interior Alaska Revegetation Plan (USGS 1994). Park staff would monitor the project site in subsequent years for the presence of invasive plants and, if discovered, would expand the park's existing exotic plant eradication program to include the project location.

Vista clearing may necessary in future years to maintain mountain views from the new viewpoints. This would be done as the forest continues to grow up around the new rest stop. The need for such vista clearing should be evaluated at least every five years and carried out as appropriate. It is preferable to remove the trees when they are small and shrub-sized rather than wait for them to block the view, because 1) vistas would be maintained and 2) removal of small trees has less impact to the environment (less biomass, less bird nesting opportunity, less habitat).

The geotechnical investigation would be conducted while the ground is frozen and with adequate snow cover in order to minimize impacts to the soils. A small, tracked, Nodwell-type mounted drill rig would be used because it exerts low ground pressure and can turn sharply around obstacles. Use of this type of vehicle would allow for fewer trees to be removed. The cross-country access route for the drill rig would be flagged to minimize the crushing of vegetation and the removal of trees. For Alternative 2, access for the drill rig to the rest stop site would probably be from the south of the project area, via the campground road and the former roads of the old Savage Camp. This route would take advantage of the more open areas to the south of the project site and minimize tree clearing, especially along the Denali Park road edge. The access route would be over the proposed development footprint, so that any necessary tree removal for the geotechnical investigation would later be in the area cleared of vegetation for the project (assuming the site footprint did not shift as a result of the geotechnical information). A drill site at the road shoulder would be accessed from the Denali Park Road. Drill sites for the SSTs at the Savage Cabin pullout would be accessed directly from the pullout and existing trail.

2.5.2 Wetlands: Mitigations

Best Management Practices (BMP) technologies would be used. Silt fences would be placed below the construction site to control and filter runoff to protect any adjacent wetlands. Impacts of the geotechnical investigations, including drilling and overland vehicle access, would stay on the planned disturbance area as much as possible and would be conducted while the ground is

frozen and snow covered. Mitigation by rehabilitating wetlands in another area of the park would be accomplished. As much as possible, disturbance of wetlands in and around the project area would be avoided. Any areas disturbed by construction activities would be restored to as near natural conditions as possible. Prior to the start of construction activities, the NPS would salvage as much topsoil, organic matter, and vegetation as necessary for later use in site revegetation. Salvaged material would be stockpiled separately and would be returned to the disturbed areas following construction. Approximately 0.5 acres of disturbed lands (mostly not wetlands) would be revegetated with native plants after the completion of the construction activities. The DENA's Resource Preservation and Research Division would perform all revegetation activities.

2.5.3 Wildlife and Habitat: Mitigations

During project construction, the guidelines in the park's Bear-Human Conflict Management Plan would be followed. Food would be stored in vehicles or other hard-sided structures. Household waste and food garbage would be removed daily from the park. Bear-proof containers would be used for food and refuse. Project activities would respect wildlife closures that may occur in the vicinity of the project area.

Under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703), it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" includes, by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof. The MBTA does not distinguish between intentional and unintentional take. Vegetation clearing, site preparation, or other construction activities that would result in the destruction of active bird nests or nestlings would violate MBTA. In order to avoid violations of the MBTA, bird habitat (vegetation) would not be removed during the early nesting season, April 1 through April 30, unless the site was pre-approved by a park wildlife biologist (pers. comm., Carol McIntyre). There would be no bird habitat removal May 1 through July 15 (USFWS 2005). After removing vegetation for the project, there would be no seasonal restriction for construction activities, even during the following nesting seasons. If an active nest were encountered at any time, it would be protected from destruction. "Active" is indicated by intact eggs, live chicks, or presence of an adult on the nest. Eggs, chicks, or adults of wild birds would not be destroyed (Zelenak 2005).

2.5.4 Wilderness: Mitigations

The proposed facilities would be designed to fit with the natural surroundings. The design elements proposed to mitigate visual concerns would also mitigate visual concerns for views from wilderness. Design elements could also consider screening or buffers for sound and wilderness access (trails).

2.5.5 Cultural Resources: Mitigations

Project excavations would be monitored by cultural resource staff. If previously unknown cultural resources are located during construction, the project would be stopped in the discovery area until cultural resource staff could determine the significance of the finding and appropriate courses of action.

2.5.6 Visitor Use and Recreation: Mitigations

Construction activities would be conducted in a manner to minimize impact on visitor use and recreation. Barricades would be placed around the construction site to prevent visitor entry. The

proposed facilities would be designed to fit in with the natural surroundings. The hours and time of year for construction activities would be adjusted to avoid disruption of the campground experience.

2.5.7 Visual Resources: Mitigations

The rest area would be designed to fit with the natural surroundings and sited to reduce its visibility from off-site. The design would take advantage of topography and existing vegetation to provide natural screening. Construction materials would be selected to complement the natural environment in color and texture.

2.5.8 Local Communities/Socioeconomic Resources: Mitigations

No mitigation measures were developed for local communities and socioeconomic resources because the project impacts to these resources included small-scale stimuli to the local economy, consistent with historic limits and trends.

2.6 Environmentally Preferred Alternative

As stated in Section 2.7 (D) of the NPS DO-12 Handbook, “The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in NEPA (Section 101(b)).” The environmentally preferred alternative is the alternative that not only results in the least damage to the biological and physical environment, but that also best protects, preserves, and enhances historic, cultural, and natural resources. Alternative 1 is the environmentally preferred alternative because no action would have the least environmental impact on the APE.

NEPA Section 101 Goal Statement:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain wherever possible, an environment which supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(NEPA, 42 USC 4321-4347)

2.7 Alternatives Considered but Eliminated from Detailed Study

Several alternatives were developed and considered during the public and agency scoping process. However, these alternatives were eliminated from further evaluation. This section describes the alternatives that were considered and provides justification for their elimination.

2.7.1 Dispersed Rest Stops at or Near Pullouts

An alternative was considered to construct a series of rest stop facilities along the Denali Park Road between milepost mile 9 and mile 14. It would have included the full scope of new

facilities disperse among several locations. This alternative would have expanded a number of existing pullouts and possibly developed a few pullouts in new locations.

This alternative was removed from further consideration because it was not well suited to provide additional visitor facilities in the front country, including additional parking, trailheads, new view points and additional rest rooms. It would not provide a single destination-type rest area where visitors would be likely to spend the day in the area. The wilderness boundary is generally 150 feet from the road centerline, except in the area near Savage Campground, so there is limited space to locate more substantial rest stops, parking areas and viewpoints, especially is separation from the Denali Park Road is sought to screen the facilities from view, for pedestrian safety, or provide an experience of more quiet or solitude.

2.7.2 Savage Cabin Rest Stop

An alternative was considered to construct a single rest stop located at the site of the existing Savage Cabin pullout. The design for this alternative would have expanded upon the existing site, providing additional parking for RVs, cars, and buses and additional comfort facilities. It would not have provided new visitor opportunities in the frontcountry area. There are limited mountain views at this site, due to topography and vegetative screening.

The constraints of the nearby wilderness boundary (150 ft non-wilderness zone), inability to screen or physically separate the parking area from the road, and lack of good wildlife viewing opportunities were considered in the decision to remove this alternative. In addition, conflicts with the DNHT use of the area were identified, including crowding at the cabin during the DNHT presentation.

While significant expansion of this pullout will not be considered further, the 2 action Alternatives brought forward do include removing the chemical toilets at this site and replacing them with four, double SST units.

2.7.3 Other Site Concept Designs

Enlargement of the Savage River East rest stop was removed from consideration as an alternative due to limited availability of suitable land – avoiding the river edge, the Denali Park Road, the wilderness zone and the steep rocky hillsides. In addition, any potential sites beyond the Savage River checkpoint were not considered because private vehicle access is limited beyond that point.

Table 2-1 Summary of Alternatives

	Alternative 1 No Action	Alternative 2 NPS Preferred Alternative – East of Savage Campground	Alternative 3 DCP Alternative – Northwest of Savage Campground
Description	No new actions; continue existing management.	Construct a new rest stop east of the Savage Campground.	Construct a new rest stop northwest of the Savage Campground.
Attributes	No new development; Continue existing management actions; Maintain 6 temporary chemical toilets at the Savage Cabin pullout.	New parking for 18 automobiles, 8 RVs and 4 buses; Designated stop for Savage Shuttle Bus; Covered viewing decks; Wayside Exhibits; Trailhead for Savage Alpine Trail (if possible); Trailhead for short interpretive loop trail (if possible); 4 double vault SSTs at the rest stop and 4 additional double SSTs at the Cabin pullout; Longer (about 300 ft) two-way access road leading to one-way loop road; Significant separation from the Denali Park Road.	New parking for 18 automobiles, 8 RVs and 4 buses; Designated stop for Savage Shuttle Bus; Covered viewing decks; Wayside Exhibits; Trailhead for Savage Alpine Trail (if possible); Trailhead for short interpretive loop trail (if possible); 4 double vault SSTs at the rest stop and 4 additional double SSTs at the Cabin pullout; Short (about 50 ft) two-way access road leading to a parking area; Near to the Denali Park Road.
Area of Potential Effect (APE)	No new construction.	2.4 acres for the rest stop; 0.1 acre for the SSTs near the Cabin pullout; Total APE of 2.5 acres.	2.3 acres for the rest stop; 0.1 acre for the SSTs near the Cabin pullout; Total APE of 2.4 acres.
Wetland APE	None	0.1 acre for the rest stop; 0.1 acre for the SSTs near the Cabin pullout; Total wetland APE of 0.2 acres.	2.0 acre for the rest stop; 0.1 acre for the SSTs near the Cabin pullout; Total wetland APE of 2.1 acres.
Views	None	Good mountain views available with little need for vista clearing; site not likely to be visible from road or Primrose Rest Stop.	Limited mountain views due to topography and vegetation; vista clearing would be needed; potential viewshed impacts when viewed from Primrose Rest Stop.
Approximate Construction Costs	\$0	\$1,837,000	\$1,562,000
Approximate Annual Life Cycle Costs	\$5,000 to service and maintain chemical toilets at the Savage Cabin pullout.	\$29,000	\$27,000

Table 2-2

Summary of Impacts

Impact Issue	Alternative 1 No Action	Alternative 2 NPS Preferred Alternative – East of Savage Campground	Alternative 3 DCP Alternative – Northwest of Savage Campground
Vegetation and Soils	The no action alternative <u>would not affect</u> vegetation and soils.	The developments proposed for Alternative 2 would impact about 2.4 acres of vegetation and soils, plus an additional 0.1 acres for the new SSTs at the Savage Cabin pullout. The impact on vegetation and soils from these developments and from recreational activities associated with these developments would be <u>minor</u> due to the small area of impact and the common vegetation types in the area.	The developments proposed for Alternative 3 would impact about 2.3 acres of vegetation and soils, plus an additional 0.1 acres for the new SSTs at the Savage Cabin pullout. The impact on vegetation and soils from these developments and from recreational activities associated with these developments would be <u>minor</u> due to the small area of impact and the common vegetation types in the area.
Wetlands	The no action alternative <u>would not affect</u> wetlands.	Approximately 0.2 acres of wetlands would be filled. The impact of this loss of these wetland functions and values under Alternative 2 would be <u>minor</u> .	Approximately 2.1 acres of wetlands would be filled. The impact of this loss of these wetland functions and values under Alternative 3 would be <u>moderate</u> .
Wildlife	The no action alternative <u>would not affect</u> wildlife.	The developments proposed for Alternative 2 would impact about 2.4 acres of wildlife habitat in the vicinity of the Savage Campground, plus an additional 0.1 acres for the new SSTs at the Savage Cabin pullout. The impact on wildlife and habitat in the project area from these developments and from recreational activities associated with these developments would be <u>minor</u> .	The developments proposed for Alternative 3 would impact about 2.3 acres of wildlife habitat in the vicinity of the Savage Campground, plus an additional 0.1 acres for the new SSTs at the Savage Cabin pullout. Brushy vegetation at the site could increase the possibility of human-wildlife interactions. The impact on wildlife and habitat in the project area from these developments and from recreational activities associated with these developments would be <u>minor</u> .
Wilderness	The no action alternative <u>would not affect</u> wilderness.	There would be no physical impacts to wilderness due to construction; all construction would be located outside of wilderness zone areas. There could be an increase in social trails in nearby wilderness. There could be long-term impacts to social characteristics of nearby wilderness, including an increase in sound intrusion (decrease in solitude) and change in the area as seen from the wilderness (decrease in remoteness). These impacts would be <u>minor</u> .	Alternative 3's impacts to wilderness would be the similar to those of Alternative 2 – <u>minor</u> .
Cultural Resources	The no action alternative <u>would not affect</u> cultural resources.	No direct impacts to cultural resources are anticipated. There would be increased visitor access to the old Savage Camp. Impacts would be <u>negligible</u> .	No direct impacts to cultural resources are anticipated. Impacts would be <u>negligible</u> .

Impact Issue	Alternative 1 No Action	Alternative 2 NPS Preferred Alternative – East of Savage Campground	Alternative 3 DCP Alternative – Northwest of Savage Campground
Visitor Use and Recreation	Continued the use of the temporary chemical toilets would be a <u>minor</u> negative impact to visitor use and recreation.	During construction, dust and noise could temporarily impact visitor use and recreation. During operation, the facilities would provide long-term beneficial services for visitors and new recreation opportunities. Zoning classifications would geographically shift but would not increase the development zone. The rest stop would contribute to noise and foot traffic at the Savage Campground. There would be a <u>minor</u> negative impact to visitor use and recreation.	During construction, dust and noise would impact visitor use and recreation. During operation, the facilities would provide long-term beneficial services for visitors and new recreation opportunities. The proposed facilities are compatible with the existing zoning. Additional parking and visitor use near the Savage Cabin would contribute to congestion at the Savage Cabin interpretive site. Traffic safety impacts would occur due to pedestrians crossing the Denali Park Road between the new rest stop and the Savage Cabin pullout. The rest stop would contribute to noise and foot traffic at the Savage Campground. There would be a <u>minor</u> negative impact to visitor use and recreation.
Visual Resources	The no action alternative <u>would not affect</u> visual resources.	During construction, dust and equipment could temporarily impact visual resources. During operation, the facilities would provide new vantage points for viewing scenic landscapes. The facility would be designed to reduce visual impact of the facilities as seen from other areas. This would be a <u>minor</u> negative impact.	Alternative 3's impacts to visual resources would be similar to Alternative 2, but facilities would be closer to the road, with less opportunity to screen the development from view of the road, more brush so poorer mountain and wildlife views. This would be a <u>minor</u> negative impact.
Local Communities and Socioeconomic Resources	The no action alternative <u>would not affect</u> local communities and socioeconomic resources.	Construction activities would cause a temporary minor stimulus to the local economy. During operations, visitors would spend more time in DENA and the surrounding communities and contribute to the local economy. This would be a <u>minor</u> negative impact.	Alternative 3's impacts to local communities and socioeconomic resources would be the similar as for Alternative 2. This would be a <u>minor</u> negative impact.

3.0 AFFECTED ENVIRONMENT

3.1 Project Area

DENA encompasses 9,419 square miles with the main entrance on the George Parks Highway approximately 240 miles north of Anchorage and 12 miles south of Healy. Mount McKinley, at an elevation of 20,320 feet, bisects and is the focal point of the park. The project area lies near the Savage Campground, near mile 12.3 on the Denali Park Road, between elevations of approximately 2,400 and 2,700 feet. The park road corridor lies north of the Alaska Range and crosses the southern margins of the Outer Range foothills.

3.2 Vegetation and Soils

The project area lies within the taiga or northern boreal forest biome, which is dominated by closed, open and woodland needle leaf evergreen forests of white spruce (*Picea glauca*) and black spruce (*Picea mariana*), with extensive areas of broadleaf (deciduous) forests of paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*) and balsamifera (*Populus balsamifera*) (Vioreck et al. 1992). Within the taiga are widespread areas of shrubs consisting of mostly alder (*Alnus crispa.*), dwarf birch (*Betula glandulosa*) and willow (*Salix* spp.). Wetlands vegetation and soils are discussed separately in Section 3.3 below.

No threatened or endangered plants are known to occur in DENA. However, one plant species, the pink dandelion (*Taraxacum carneocoloratum*), is considered a federal species of concern (former Candidate 2 species) and is found on alpine slopes and other coarse, well-drained substrates (NPS 2005).

3.2.1 Forest Communities

The majority of the forests within the project area are classified as open (25-60 % canopy cover) and consist of either needle leaf (coniferous species) or mixed (needle leaf and broadleaf trees) (Vioreck et al. 1992). Needle leaf forests in the area are dominated by white spruce with understories of alder, birch and willow. Mixed forests in the area are dominated by mature white spruce, quaking aspen and paper birch and tend to occupy well-drained areas. The understory generally includes shrubby cinquefoil (*Potentilla fruiticosa*), dwarf birch, willows (including *S. arbusculoides*, *S. glauca*, and *S. planifolia ssp. pulchra*), Labrador tea (*Ledum groenlandica*), prickly rose (*Rosa acicularis*), blueberry (*Vaccinium uliginosum*), high-bush cranberry (*Viburnum edule*), and thin feather mosses, likely *Hylocomium* sp. (NPS 2005).

3.2.2 Scrub Communities

The scrub habitats include both tall shrub communities (over 5 ft high) and low shrub communities (8 in-5 ft high), and can be either open or closed (60-100% canopy cover). Tall closed shrub communities are the most common scrub habitats found within the project area. Vegetation within the shrub communities is comprised of dwarf birch, Labrador tea, willow and blueberry.

In low shrub communities, dominant species include birch (*B. glandulosa* and *B. nana*), cranberry (*V. vitis-idaea*), bog blueberry (*V. uliginosum*), Labrador tea, bearberry (*Arctostaphylos alpina* and *A. rubra*), and crowberry (*Empetrum nigrum*). Often scattered throughout these shrub communities are tall willows, white spruce, and black spruce. These low open communities are generally found on moist slopes (Vioreck et al. 1992).

Riparian low shrub communities of willow (*Salix* spp.) are found along the stream banks of a tributary to the Savage River just east of the Savage Campground, around mile 11.8. The soils in these communities are usually well-drained and covered with a thin organic layer (Viereck et al. 1992). Herbaceous species in these communities generally include bluejoint reedgrass (*Calamagrostis canadensis*), horsetail (*Equisetum* spp.), and burnet (*Sanguisorba stipulata*) (Viereck et al. 1992).

3.2.3 Soils

Soils within the project area vary according to parent material, topography and vegetation coverage. One of the major soil orders in the project area is inceptisols. These soils have undergone relatively minor modification of the soil parent material by soil-forming processes and are found on both well-drained upland areas and in wet lowland areas associated with permafrost. A majority of soil subgroups within the project area are classified as pergelic cryaquepts, which are characterized as being poorly drained gravely soils that occupy high ridges, valleys, and foot slopes of steep north facing slopes (Reiger et al. 1979). Within the project area, these soils are located atop alluvial plains and glacial moraines. These soils generally have permafrost at shallow depths, although permafrost in the project area has not been studied (NPS 2004). The other minor soil type found within the project area include histosols, which are comprised of primarily organic material and are found in wet conditions in depressions or other low areas. Another soil classification included in the project area is rough mountainous land, which consists of steep rocky slopes or the highest part of generally hilly areas, and supports sparse vegetation (Reiger et al. 1979).

3.3 Wetlands

Wetlands are transitional areas between terrestrial and aquatic systems, where the water table is usually at or near the surface or the land is covered by shallow water (NPS 2003). Wetlands provide many important ecological functions such as habitat for wildlife and buffer surrounding areas from flooding. These areas provide habitat for small mammals such as snowshoe hares, and porcupine; birds such as gray jays, robins, thrushes, sparrows, and warblers; and large mammals such as moose.

Within the project area, the wetlands vegetation includes black spruce and tall shrubs including willows (such as *Salix brachycarpa* spp. *niphoclada*) and dwarf birch. Low shrubs found in these wetlands include blueberry, crowberry (*Empetrum nigrum*), lingonberry (*Vaccinium vitis-idea*) and several species of grasses and forbs.

The wetlands in the project area include both forested and scrub-shrub wetlands. Forested wetlands include mixed black spruce and white spruce wetlands, classified as palustrine forested needle leaf, saturated wetlands (PF04B). Scrub-shrub wetlands consist of both low and tall shrubs and often include dwarf spruce. A majority of these wetlands are dwarf shrub tundra and are classified as palustrine scrub-shrub, broad-leaved deciduous, saturated wetlands (PSS1B, and PSS1/4B). Other scrub-shrub wetlands in the project area are in temporarily flooded areas on river floodplains (PSS1/USA and PSS1/EM1A) (Cowardin et al. 1979; NPS 2001).

According to the SOF for Wetlands (Appendix A) the wetlands soils within the project area are generally very thin and barely cover alluvial plains with a subsurface accumulation of organic matter and peat layers.

The wetlands near the project area are not “jurisdictional wetlands” under the USACE due to their distance from running water. They do fall within the USFWS definition for wetlands and the NPS uses this definition in its wetlands protection policies (NPS 2000).

3.4 Wildlife and Habitat

3.4.1 Mammals

Common large mammal species in the project area include moose, caribou, Dall sheep, brown bear, black bear, and gray wolf. Moose are abundant throughout the year in numerous vegetated drainage areas. The area between the park headquarters (mile 3.0) and the Savage River (mile 14.7) supports a relatively high density of moose for Interior Alaska. Caribou are common along the park road during the summer, while Dall sheep prefer the mountainous terrain. Brown bears are easily spotted in open tundra areas, while black bears inhabit denser upland forested habitat below 2,000 ft in elevation. Wolves inhabit all areas of DENA below 6,000 ft in elevation that support moose, caribou, and sheep prey species. Wolf den sites are located in the park, and some are used repeatedly.

Smaller mammals present in various habitats within the project area include red fox, coyote, lynx, wolverine, snowshoe hare, red squirrel, arctic ground squirrel, red-backed vole, brown lemming, and shrew. Red fox and arctic ground squirrels are common and very visible along the park road, while coyote, lynx, and wolverines occur at lower densities and are more elusive. Snowshoe hares and red squirrels are commonly found in forested areas, while abundances of voles, lemmings, and shrews are found in a variety of habitats.

Near the project area, there are two wildlife closure areas, one for moose rut, and one for wolf denning. The moose closure area generally extends from mile 5.5 to 10.5 along the park road. Fall rutting congregations can reach 50 moose or more in this area (NPS 2005). The timing of the closure coincides with rut, which generally occurs from the third week of August until mid-October. While the closure is in effect, people are not allowed to venture beyond the road in this area (Owens 2005). The wolf den closure area is located between approximately mile 8.5 and 11.5, near Jenny Creek (tributary to Savage River). Annually, all historic den areas (those that have been used within the last two years) are closed to human access within a one-mile radius of the den, which is measured to the nearest identifiable topographic feature, and may exceed or fall short of one mile in some areas. The closure dates are from April 15 to September 1. The closure area does not reach the road, but approaches within 300 yards and extends out to 900 yards in some areas (Owens 2005).

3.4.2 Birds

Various resident bird species common to the taiga and tundra habitats of the project area include northern harrier, mew gull, ruffed and spruce grouse, all three species of ptarmigan (willow, rock, and white-tailed), common raven, black-billed magpies, and all woodpeckers of the species *Picoides*. Golden eagles and gyrfalcons occur in the mountainous regions of DENA (NPS 2005). Great-horned owls and boreal owls are the most common resident owl species in Denali, while great gray owls, and the northern hawk owls occur at very low densities (NPS 2005).

The numerous migratory species found in the area include chickadees, white-crowned sparrows, savannah sparrows, common snipe, cliff and violet green swallows, dark-eyed juncos, thrushes, and short-eared owls (NPS 2004).

Kingfishers and American dippers occur in riparian areas. Wetland-nesting shorebirds include yellowlegs, common snipe, solitary sandpiper, and wandering tattler (NPS 2005).

Although currently no ESA-listed bird species occur in DENA, one federal species of concern, the olive-sided flycatcher, could be found within the project area. This bird nests in open coniferous forests with bog ponds and marshy streams, and in woodland/dwarf forests (NPS 2005).

The State of Alaska maintains a “species of special concern” list. Species on this list that occur within the park and preserve boundaries include the American peregrine falcon, olive-sided flycatcher, gray-cheeked thrush, and blackpoll warbler. All of these species are found in suitable habitats, although little is known about population abundance or distribution (ADFG 1996 *in* (NPS 2005).

3.5 Wilderness

The project area is in the non-wilderness zone but is surrounded by designated wilderness. The wilderness boundary is generally 150 ft from the centerline of the park road. At pullouts existing in 1980, the 150-foot road corridor extends from the pullout edge (instead of the road centerline). In the vicinity of the Savage Campground the wilderness boundary is nearly 0.5 miles south of the road along the Savage River. Both of the action alternatives are well within the non-wilderness zone. Wilderness areas are designated by Congress and are subsequently managed under protective provisions of the Wilderness Act of 1964 which generally prohibit motorized equipment, motor vehicles, roads and permanent improvements such as buildings and installations. They are managed for primitive and unconfined recreation.

3.6 Cultural Resources

Due to the existing levels of disturbance and activity within the Denali Park Road corridor, much of the area has been surveyed for cultural and historic resources. Known cultural sites in the planning area include the Savage Cabin and the old Savage Camp. While the proposed facility development could be located near these sites, there are no known cultural resources within the proposed development areas. There is low potential for cultural resources to be found in the proposed development areas, based on the terrain and their distance from the Savage River.

The Savage Cabin was determined ineligible by the Keeper of the National Register of Historic Places (NRHP). Park cultural resource staff indicates that a Determination of Eligibility will be conducted for the old Savage Camp. These two historic cultural sites are still of local historic importance to the park. Currently there is no identified cultural landscape in the planning area.

3.7 Visitor Use and Recreation

3.7.1 Visitor Use

Visitation to DENA is the highest of any national park in Alaska. During the 1990s, visitation grew rapidly, when the number of recreation visits peaked in 1999 at 386,867. Visitation rates then stabilized or declined through the early years of this decade before a resurgence and record visitation in 2004 of 404,236 (NPS 2005). About 280,000 of these visitors embark upon a shuttle bus trip or tour beyond the Savage River checkpoint for travel into DENA interior (NPS 2001). The remaining visitors stay in the frontcountry and explore this area of DENA via the Savage River Shuttle bus, tour bus, private car, bicycle, or on foot. All types of visitation to the park are expected to continue to increase over the next 10-15 years.

There are currently no restrictions on the level of vehicle use on the paved road from the park entrance to Savage River, which includes the planning area. NPS traffic statistics indicate that use on this section of the road steadily increases from spring to fall, with as many as 500 vehicles per day driving to the Savage River bridge during peak season (NPS 2005). During the summer months, the 18-car parking lot at Savage East is often full.

3.7.2 Recreation

Common recreation activities in the planning area include viewing scenery and wildlife, photography, driving for pleasure, hiking on nature trails, and picnicking. Camping in this area occurs only in the Savage Campground. The NPS provides interpretive programs in the planning area at the Savage Campground and Savage Cabin. The NPS contracts with a concessionaire to provide public services in the frontcountry area to assist visitors; concession services include: transportation, bus and campground reservations, food services, merchandise sales, and showers.

3.8 Visual Resources

Facilities in and around the entrance area of DENA have steadily expanded since the completion of the George Parks Highway in the autumn of 1971. Many of these entrance area facilities are not visible to park visitors due to vegetation screening. The Wilderness Access Center is visible to most visitors because of its height above the treetops.

Past the park's entrance area, traveling on the Denali Park Road toward the Savage River, natural surroundings dominate the visual landscape until reaching the Savage River check station at mile 14.8. An 18-car parking area and two restrooms are located just before the check station. During the summer season, this parking lot is often full. There are many locations along this section of the Denali Park Road that provide mountain views.

3.9 Local Communities/Socioeconomic Resources

The social and economic environment for the DENA frontcountry is described in detail in the DCP/EIS (NPS 1996; NPS 1997). Population growth in the Denali Borough is considered slow, and lags the state, although some communities like Cantwell and Healy show rapid growth rates comparable with those in Matanuska-Susitna Borough (Department of Commerce 2005). However, other rural communities, such as Anderson, Ferry, and McKinley Park, show population losses. By conservative estimates, the population of the Denali Borough at least triples during the busy summer season, which is roughly mid-May to mid-September. Ethnically, the population of the area is more heavily dominated by Caucasians than the state as a whole or the nearby urban centers.

Employment in the Denali Borough is strongly seasonal because of the importance of the tourism industry in the local economy compared to the other industries. The tourism industry is the driving force behind employment growth in the Denali Borough, although the growth is scattered among several different economic sectors. Hotels, restaurants, transport services, retail shops, gas stations, and guide services are among the many services available for people coming to visit DENA. To illustrate the growth, the NPS counted just 133 hotel rooms within several miles of the park's entrance in 1980. By 2000, there were 1,800 rooms, as well as 339 cabins and 569 RV spaces (excluding campsites and RV spots in DENA). The total number of accommodations in the area between Cantwell and Healy is now over 2,000 rooms and cabins.

None of the hotels or restaurants in the canyon area near DENA entrance remains open during the winter, but a few restaurants and overnight accommodations in the Healy and Cantwell areas do remain open year-round.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section provides an evaluation of the impacts or potential impacts of each of the alternatives on the resources described in the issue statements presented in Section 1, Purpose and Need for Action.

4.2 Methodology

4.2.1 Impact Criteria and Assessment

The impact analysis was based on standardized impact definitions. For each issue selected for detailed analysis (see Section 1.3.1) direct, indirect, and cumulative impacts have been described. Impacts identified for each issue brought forward are based on the duration, extent, and intensity of the impact. Summary impact levels (characterized as negligible, minor, moderate, or major) are given for each impact topic (issue). Impact level thresholds are defined in Table 4-1.

A compensating polar planimeter was used to determine the acreage covered by the footprint of the proposed project, based on the conceptual drawing designs. The same procedure was followed to determine the acreage of the proposed Savage Cabin restroom upgrade footprint.

Table 4-1 Resource Assessment Impact Levels

Impact Level	Negligible	Minor	Moderate	Major
Intensity	Little or no impact to the resource would occur; any change that might occur may be perceptible but difficult to measure.	Change in a resource would occur, but no substantial resource impact would result; The change in the resource would be perceptible but would not alter the condition of the resource.	Noticeable change in a resource would occur and this change would alter the condition or appearance of the resource, but the integrity of the resource would remain.	Substantial impact or change in a resource area would occur that is easily defined and highly noticeable, and that measurably alters the condition or appearance of the resource.
Extent	None	Localized – Impact would occur only at alternative site or its immediate surroundings, and would not extend into the region.	Regional – Impact would affect the resource on a broad regional level or in DENA as a whole, extending well beyond the immediate alternative site.	Statewide – Impact would affect the resource on a national level, extending well beyond the region or park as a whole.
Duration	None	Temporary – Impact would occur only during the time that the rest stop was being constructed. After construction, the resource conditions would return to pre-construction conditions.	Short-term – Impact would extend beyond the time of construction, but would not last more than two years.	Long-term – Impact would likely last more than two years and may continue beyond the lifetime of the project.

4.2.2 Cumulative Impacts

As defined in 40 CFR 1508.7, cumulative impacts are the incremental impacts on the environment resulting from adding the proposed action to other past, present, and reasonably foreseeable future actions. Cumulative impacts were assessed by combining the potential environmental impacts of the alternatives with the impacts of projects that have occurred in the past, are currently occurring, or are proposed in the future within the front country area (first 15 miles of the Denali Park Road). In the past, these impacts have mainly been due to increased visitor use along the road potentially impacting resources such as soils, vegetation and wilderness.

The following past, present and reasonably foreseeable actions have been identified that may contribute direct or indirect impacts to park resources.

- Impacts from past or present actions:
 - Construction and use (1922-1939) of the old Savage Camp, including roads and air strip.
 - Construction and use of the Denali Park Road (1922 to present), including pullouts and gravel pits.
 - Installation or replacement of 6 new large road culverts between mile 4 and 12.2 (2005).
 - Construction and use of the Savage Campground (late summer 1955 to present, in existing location), including water and septic systems (Norris 2006).
 - Construction and use of the Upper Savage River Cabin (built in 1924-25; moved to existing location in 1940; used at present location 1940 to present) (NPS 1987).
 - Construction and use of the Savage Cabin interpretive loop trail (1996) (Tomkiewicz, 2006).
 - Removal (2005) of the well and well house in designated wilderness near the Savage Cabin, done to improve wilderness condition by removing nonessential structures and installations.
 - Removal (2005) of the gasoline generator and generator shed next to the temporary chemical toilets near the beginning of the Savage Cabin Trail.
 - Installation (2005) of a well and gasoline generator next to the water tank north of the Savage Campground, and the addition of solar panels to the water tank.
 - Construction (2005) at the Savage Bridge West Rest Stop, including installation of 2 vault SSTs, construction of a bus shelter and site leveling.
 - Construction (2005) at the Savage Bridge East Rest Stop, including installation of 2 vault SSTs, construction of an accessible trail down to the river.
 - Construction of Savage River Trail and trail bridge, (completed 2000) (Tomkiewicz, 2006).

- Impacts from reasonable foreseeable future actions:
 - Construction (2006) of the Savage Alpine Trail, including cutting the trail bench (Project Management Information System [PMIS] #111648) and grubbing the trail tread (PMIS #111646)
 - Trail work – correction of drainage and tread failures on the Savage Cabin Interpretive Trail (PMIS #9129)
 - Revegetation of social trail damage between Savage Rock and ridgeline (PMIS #111647)
 - Trail work – repair of trail tread on the Savage River Bar Trail (PMIS #91202)
 - Trail work – brush trails in the DENA frontcountry (PMIS #101818)
 - Trail work – correct drainage deficiencies on the frontcountry trails (PMIS #101820)
 - Construction of the Savage River Loop Trails from the Savage East and West rest stops, and eventually connecting to the Savage Alpine Trail (DCP/EIS).
 - Construction of an 8-foot wide gravel shoulder along the first 15 miles of the Denali Park Road as a vehicle safety pullout (DCP/EIS).
 - Ongoing vista clearing to maintain or improve views at pullouts and rest stops.
 - Construction of an interpretive loop trail from the new rest stop (DCP/EIS).
 - Construction of a connecting trail from the new rest stop to the Savage Alpine Trail (DCP/EIS).

4.3 Impacts of Alternative 1: No Action

4.3.1 Vegetation and Soils: No Action Impacts

Alternative 1, no action, would result in no direct or indirect impacts on vegetation and soils. A new rest stop and associated access road or parking areas, SSTs or interpretive areas would not be built along the first 15 miles of the Denali Park Road under this alternative.

Cumulative Impacts

Past and on-going activities that have impacted or would continue to impact vegetation and soils along the first 15 miles of the Denali Park Road include development of a campground (Savage Campground), pullouts, trails and parking areas. Impacts include creation of social trails and trampling of vegetation, filling of vegetated areas, and introduction of invasive species. Other impacts include channelization of runoff from paved areas and footpaths and subsequent erosion of soils. These past impacts can be seen at many of the developed sites in the frontcountry area, and could be considered minor to moderate impacts on vegetation and soils (see Table 4-1).

Reasonably foreseeable future activities that could occur within the first 15 miles of the Denali Park Road are described in Section 4.2.2. Of these future activities, the development of an 8-ft wide shoulder along the length of the road has the highest potential to impact vegetation and soils. The intensity of the impact of this project would be moderate, the extent minor, and the duration major. Other projects such as culvert replacement, improving drainage and creating trails, would also impact vegetation and soils, but impacts, while long-term in duration, would be

minor in extent and intensity, and some of the actions such as improving drainage could serve to mitigate past impacts. Vista clearing at various locations along the first 15 miles of the Denali Park Road would also permanently remove individual large trees but the understory would remain and would grow and fill in the underbrush, contributing a negligible amount to the intensity and extent of the cumulative impact on vegetation and soils. Overall impacts from these future projects to the plant community would be minor to moderate.

Alternative 1, No Action, would have no contribution to cumulative impacts on vegetation and soils in the project area. However, due to the scope of the projects described in Section 4.2.2, overall, cumulative impacts on vegetation and soils resulting from past, present, and reasonably foreseeable future actions would be minor to moderate (see Table 4-1).

Conclusion

No impairment of vegetation or soils would occur as a result of the actions proposed under this alternative.

4.3.2 Wetlands: No Action Impacts

Because no new development would occur under Alternative 1, there would be no direct or indirect impacts on wetlands.

Cumulative Impacts

As described in Section 4.3.1 for Vegetation and Soils, past actions have impacted wetlands along the first 15 miles of the Denali Park Road. These actions have included filling wetlands to construct the park road, create the Savage Campground, construction of the East Savage River Parking area, and development of numerous pullouts along the road. Most of the areas developed have occurred in wetland types that are common throughout the eastern area of DENA and no sensitive areas have been impacted; therefore, the intensity and extent of past impacts on wetlands can be considered moderate, even though the duration is long-term (see Table 4-1).

Reasonably foreseeable future activities that could occur within the frontcountry are described in Section 4.2.2. Of these future activities, the development of an 8-ft wide shoulder along the length of the Denali Park Road has the highest potential to impact wetlands. Other projects such as culvert replacement, improving drainage and creating trails, could also impact wetlands, depending on the location of the developments and the quality of the wetlands potentially impacted.

Alternative 1, No Action, would have no contribution to cumulative impacts on wetlands in the project area. Because there are no high quality or uncommon wetlands in the immediate vicinity of the road corridor, the projects described in Section 4.2.2 could induce negligible to minor cumulative impacts on wetlands (see Table 4-1).

Conclusion

No impairment of wetlands would occur as a result of the actions proposed under this no action alternative.

4.3.3 Wildlife and Habitat: No Action Impacts

Alternative 1, no action, would result in no direct or indirect impacts on wildlife and habitat.

Cumulative Impacts

As described in Section 4.3.1 for Vegetation and Soils, past actions have impacted wildlife and habitat along the first 15 miles of the Denali Park Road. These actions have included construction of the park road, development of the Savage Campground, construction of the East and West Savage River Rest Stops, and development of numerous pullouts along the road. Because most of the areas developed are likely to be common habitats such as open mixed forest, low and tall shrub communities, overall past impacts on wildlife and habitat can be considered minor (see Table 4-1).

Reasonably foreseeable future activities that could occur within the frontcountry are described in Section 4.2.2. Of these future activities, the development of an 8-ft wide shoulder along the length of the Denali Park Road has the highest potential to impact wildlife and habitat. Other projects such as culvert replacement, improving drainage and creating trails, could also impact wildlife and habitat, depending on the location of the developments and the type of habitat potentially impacted.

Alternative 1, No Action, would have no contribution to cumulative impacts on wildlife and habitat and soils in the project area. Because there are no sensitive habitats other than the closure areas within the immediate vicinity of the road corridor, overall, cumulative impacts from the projects described in Section 4.2.2 would be negligible to minor (see Table 4-1).

Conclusion

No impairment of wildlife or habitat would occur as a result of the actions proposed under this alternative.

4.3.4 Wilderness: No Action Impacts

No action would occur under Alternative 1; there would be no direct impacts to wilderness.

Cumulative Impacts

As described in Section 4.3.1, there have been past actions along the first 15 miles of the Denali Park Road. These actions have contributed to physical impacts to wilderness that is in proximity to the park road, including the creation of social trails, trampling of vegetation, and introduction of invasive species, as discussed in Section 4.3.1. Social impacts include the intrusion of sounds to the wilderness and impacts to the area viewed from wilderness. The intensity of the impacts is moderate, as change in the resource is noticeable. The extent of the impacts to wilderness is generally minor, as the impacts are localized in the vicinity of the park road. The duration of the impacts varies from temporary (such as noise intrusion) to long-term (view of permanent facilities, such as the road). Thus, the duration impact could be considered minor to major (see Table 4-1). Reasonably foreseeable future activities that could occur within the first 15 miles of the Denali Park Road are described in Section 4.2.2. Direct wilderness impact would occur from the construction of the Savage Alpine Trail. Other activities not would occur within wilderness but could contribute to some of the existing impacts to wilderness in the vicinity of the road. Of these future activities, the development of an 8-foot wide shoulder along the length of the road has the highest potential to impact the area viewed from wilderness and increase intrusion of sounds to the wilderness. Vista clearing along the first 15 miles of the Denali Park Road could also impact the area viewed from wilderness. Cumulative impacts on wilderness resulting from past, present, and reasonably foreseeable future actions would be moderate intensity, minor extent, and major duration (see Table 4-1).

With no direct or indirect impacts to wilderness, implementation of Alternative 1 would not contribute to the cumulative impacts to wilderness.

Conclusion

No impairment of wilderness would occur as a result of the actions proposed under this alternative.

4.3.5 Cultural Resources: No Action Impacts

Alternative 1, no action, would result in no direct or indirect impacts to cultural resources.

Cumulative Impacts

As described in Section 4.3.1, there have been past actions along the first 15 miles of the Denali Park Road. Past and on-going activities that have impacted or would continue to impact cultural resources along the first 15 miles of the Denali Park Road include development of visitor facilities, a campground, pullouts, trails and parking areas. The area has been surveyed for cultural resources in the past, but there have been few sites identified in the developed area. Avoidance and mitigation measures have been employed. Past impacts to cultural resources are generally considered to be of minor intensity, minor extent, and minor to major duration (see Table 4-1).

Reasonably foreseeable future activities that could occur within the first 15 miles of the Denali Park Road are described in Section 4.2.2. Many of the future activities focus development on previously disturbed sites or adjacent to previously developed sites. Impacts could include disturbance or alteration of historic or prehistoric sites, but the probability is low because the proposed project areas are largely within previously disturbed areas. Cumulative impacts to cultural resources resulting from past, present and reasonably foreseeable future actions would be of minor intensity, minor extent, and minor to major duration (see Table 4-1).

With no direct or indirect impacts to cultural resources, implementation of Alternative 1 would not contribute to the cumulative impacts to cultural resources.

Conclusion

No impairment of cultural resources would occur as a result of the actions proposed under this alternative.

4.3.6 Visitor Use and Recreation: No Action Impacts

Under Alternative 1, there would be no new rest stop built. Therefore, there would be no direct impacts to visitor use and recreation. Park visitors would continue to have the option of stopping at several small pullouts along the road for viewing wildlife, photography, mountain viewing, hiking, picnicking or other recreation activities. Under no action, there is limited availability of parking at the Savage River Bridge east rest stop, which is the farthest the independent motor vehicle traveler can go on the Denali Park Road, so some visitors would find the rest stop parking area full and would return to the entrance area from the Savage River area without stopping at any of the several small pullouts or going for a hike. Visitors would continue to use the temporary chemical toilets at the Savage Cabin pullout. Visitor recreation would be indirectly negatively impacted due to the continuation of a limited number (and limited locations) of parking spaces and toilets (summer and winter).

Cumulative Impacts

There have been past actions and on-going activities along the first 15 miles of the Denali Park Road that have impacted or would continue to impact visitor use and recreation. The development of the DENA frontcountry area has increased the level of public services available to visitors, including transportation, bus and campground reservations, food services, merchandise sales, and showers. The Savage Bridge loop trail and new paths connecting to existing trails provide opportunities for visitors to explore the landscape.

Visitation to DENA has generally increased over the past several years, and estimates show that shuttle bus use and park road traffic is nearing capacity. The parking area at Savage East is often full. The impacts of past and on-going actions on visitor use and recreation are at a moderate intensity, moderate extent, and major duration (see Table 4-1).

Reasonably foreseeable future actions (Section 4.2.2) that would provide new or upgraded visitor facilities (e.g., SSTs and bus shelters) would have positive impacts on visitor use by creating amenities that may improve visitor experiences. New trails (i.e., Savage East, Savage Alpine Trail) and the repair and maintenance of existing trails would positively impact recreation opportunities available in the park. Projects that improve and maintain the park road would also yield positive impacts to visitor use (e.g., adding an 8-foot gravel shoulder to provide space for vehicles to pull over to view wildlife). The impacts of reasonably foreseeable future actions on visitor use and recreation would be a moderate intensity, moderate extent, and major duration (see Table 4-1).

Due to the indirect impacts on visitor safety and crowding under No Action, Alternative 1 would have a minor to moderate contribution to cumulative impacts on visitor use and recreation.

Conclusion

The no action would result in minor negative impairment to visitor use and recreation.

4.3.7 Visual Resources: No Action Impacts

Under this alternative, there would be no rest stops built; therefore there would be no direct or indirect impacts to visual resources. Park visitors would continue to have the option of stopping at several small pullouts along the road, some of which have a view of Mt. McKinley.

Cumulative Impacts

There have been past actions and on-going activities along the first 15 miles of the Denali Park Road that have impacted or would continue to impact visual resources. Visitor facility construction in the entrance area and along the road corridor has contributed to changes in the visual resources in the frontcountry. The impacts of past and on-going actions on visual resources are at a moderate intensity, moderate extent, and major duration (see Table 4-1).

Reasonably foreseeable future activities that could occur within the first 15 miles of the Denali Park Road are described in Section 4.2.2. Construction projects, such as the replacement of culverts along the Denali Park Road (Summer 2005) and the gravel shoulder construction for the Park Road, would have localized, temporary adverse impacts to visual resources during the construction phase due to equipment and dust. The creation of a new trail (Savage Alpine Trail) would open access to scenic landscapes. General vista clearing would also maintain or enhance views at existing pullouts and rest stops. The impacts of reasonably foreseeable actions on visual resources are at a moderate intensity, moderate extent, and major duration (see Table 4-1).

With no direct or indirect impacts, Alternative 1 would not contribute to cumulative impacts on visual resources.

Conclusion

No impairment of visual resources would occur as a result of the actions proposed under this alternative.

4.3.8 Local Communities/Socioeconomic Resources: No Action Impacts

Alternative 1, no action, would result in no direct or indirect impacts on local communities and socioeconomic resources.

Cumulative Impacts

There have been past and on-going actions along the first 15 miles of the Denali Park Road that have impacted or would continue to impact local communities and socioeconomic resources. These actions include demolition of the park hotel, construction of new visitor facilities in the entrance area, improvements to the railroad depot, expansion of the Riley Creek Campground, pullouts, trails and parking areas. Impacts include minor contributions to the local economy via employment for project construction and operation. The impacts of past and on-going actions on local communities and socioeconomic resources are at a minor intensity, minor extent, and minor to major duration (see Table 4-1).

Reasonably foreseeable future activities that could occur within the first 15 miles of the Denali Park Road are described in Section 4.2.2. Impacts to local communities and socioeconomic resources could include minor contributions to the economy via employment for project construction and operation. Cumulative impacts on local communities and socioeconomic resources resulting from past, present, and reasonably foreseeable future actions would be minor (see Table 4-1).

With no direct or indirect impacts to local communities and socioeconomic resources, implementation of Alternative 1 would not contribute to the cumulative impacts to local communities and socioeconomic resources.

Conclusion

Alternative 1 would have no direct or indirect impacts on local communities and socioeconomic resources.

4.4 Impacts of Alternative 2: NPS Preferred Alternative – East of Campground

4.4.1 Vegetation and Soils: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

Because part of this area has been previously disturbed and is located directly adjacent to the Denali Park Road and pullout, the impacts from removal of chemical toilets, the installation of new SSTs, and the construction of a new path would affect the area's vegetation and soil to a minor extent, with minor intensity due to the extremely small APE (see Table 4-1). However, the duration of the disturbance would be long-term. Vegetation clearing would be kept to a minimum, removing just the localized vegetation that is between the existing toilets and the new location; therefore the APE is about 0.1 acre. The development would provide separation between the vault toilets to allow for vegetative screening. The SSTs are vault toilets, therefore

there would be no discharge and NPS BMPs to reduce spills and leaks during pumping would be followed.

The vegetation in this area is mainly open needle leaf mixed white spruce and paper birch forest. There is some potential for invasive plant species to colonize bare soils that are exposed during the construction process, but mitigation measures and BMPs that would be implemented would serve to minimize the effect over the small area of disturbance. The terrain within the footprint for the new SSTs is essentially flat, so surface drainage would not be altered by clearing activities. Because this area has been previously disturbed, is located next to the highway and pullout, and the limited extent of disturbance (about 0.1 acre), the impact of these common actions on vegetation and soils would be minor. There would be no additional impacts of any increased winter recreational use because the vegetation and soils would be frozen.

Rest Stop East of the Campground

The impact of the development of Alternative 2 on terrestrial vegetation would include: direct loss of habitat, direct loss of native plant species, and a potential reduction in function such as biomass production. The impacts on soils would include exposure of local soils to potential erosion and invasive plant species. The loss of terrestrial vegetation as it pertains to wildlife and habitat is discussed in more detail in Section 4.4.3.

The direct impacts of the proposed project on vegetation were determined through review of the vegetation mapping, conceptual engineering drawings, and calculated footprint areas. Alternative 2 would include cleared areas for: an asphalt access road (24 ft wide), asphalt parking area, new paths, and paved or gravel pads for covered viewing decks and SSTs within the area (see Figure 2-2). The APE was then determined by adding 15% to the footprint for to account for areas potentially disturbed by clearing, drainage, and unknown design details such road cross section and culverts. Therefore, the APE, calculated as described in Section 4.1, is about 2.4 acres.

Potential direct impacts associated with the construction of a paved access road and parking area would include the loss of vegetation. As described above for the improvements at the Savage Cabin, the development would affect the area's vegetation and soil to a minor extent, with minor intensity due to the small area impacted (see Table 4-1). However, the duration of the disturbance would be long-term. Considering that the vegetation types affected by the proposed project are common in the surrounding area and within the general region, the loss of these 2.4 acres is considered to be a minor impact on vegetation.

To facilitate the geotechnical investigation, trees within the routes to the drill sites would be cut near ground level ahead of the drill rig. The drill rig's access route, with trees removed, would be planned to overlap the area of the future construction footprint, however it might not be coincident with the final project footprint, depending on the soils information obtained and the refinements of the project design.

Potential indirect impacts associated with the construction of an access road include sedimentation of adjacent habitats and pollutants introduced from road runoff, and potential introduction of invasive species, subsequently reducing ecological diversity. BMPs and design standards can minimize contaminant introduction from road runoff. Indirect impacts associated with construction of trails and paths include habitat fragmentation and increased edge effects, and potential introduction of exotic species, and subsequent reduction of ecological diversity.

Cumulative Impacts

As described in Section 4.3.1, past, on-going, and reasonably foreseeable future activities have impacted and will continue to impact vegetation and soils along the first 15 miles of the Denali Park Road. However, as described for Alternative 1, the cumulative impacts of these projects on vegetation and soils could be minor to moderate.

The overall contribution of Alternative 2 to the cumulative impacts on vegetation and soils in the project area would be minor.

Conclusion

The developments proposed for Alternative 2 would impact about 2.4 acres of vegetation and soils in the vicinity of the Old Savage Camp, plus an additional 0.1 acres for the new SSTs and short trail at the Savage Cabin. The impact on vegetation and soils in the project area from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.4.2 Wetlands: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

The construction of the SSTs and trail under Alternative 2 would impact no more than 0.1 acres of wetlands; therefore, there overall impact of the common action on wetlands would be minor.

Rest Stop East of the Campground

Wetlands impacted by the development of Alternative 2 are described in Appendix A, the Wetlands SOF. As described in the SOF, approximately 0.2 acres of wetlands would be directly impacted by Alternative 2. Wetlands impacted by Alternative 2 are not under the jurisdiction of the USACE and are common throughout the eastern areas of DENA, as well as being locally common to the project area.

It was determined, through review of the proposed project and wetlands maps, that direct impacts of Alternative 2 on the area's palustrine forested and scrub shrub wetlands would include the loss of wetlands from placement of fill for construction, portions of which would be located in wetlands. Indirect impacts would include disturbance of wetland vegetation from increased visitor traffic in adjacent areas. Winter recreational use would not cause impacts on the frozen wetlands. There would be negligible impact of the geotechnical investigation on wetlands because the drilling would occur during the early spring while the ground is still frozen and snow covered.

Wetlands are associated with various ecological functions and social values. For wetlands in the project area, some of these more important functions include support of surface water quality, including sediment control and water purification, wildlife and habitat. The area of wetlands that would be filled in relation to the total amount of palustrine wetlands throughout the project area would be relatively small, and the extent localized, although the loss would be permanent. The impact of this small loss of these wetland functions and values under Alternative 2, considering the relatively small area impacted and the limited importance of these wetlands within the region is considered minor. BMPs and design standards would minimize the potential for indirect impacts of lateral flow disruption and contaminant introduction from road runoff.

Cumulative Impacts

As described in Section 4.3.2, past actions have impacted wetlands along the first 15 miles of the Denali Park Road, but the intensity and extent of past impacts on wetlands can be considered moderate, even though the duration is long-term (see Table 4-1). Reasonably foreseeable future activities such as the development of an 8-ft wide shoulder along the length of the Denali Park Road would have a high potential to impact wetlands, while other projects have a lower potential. While the duration of impact would be long-term and therefore major, overall these projects would induce negligible to moderate cumulative impacts on wetlands (see Table 4-1).

The overall contribution of Alternative 2 to the cumulative impacts on wetlands in the project area would be minor.

Conclusion

The developments proposed for Alternative 2 would impact about 0.2 acres of wetlands. Overall, the impact on wetlands in the project area from these developments and from recreational activities associated with these developments would be minor. No impairment of wetlands would occur as a result of the actions proposed under this alternative.

4.4.3 Wildlife and Habitat: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

As discussed above in Section 4.4.1, the locations for the SSTs at the Savage Cabin pullout have been partly previously disturbed and are directly adjacent to the Denali Park Road, the loop trail and existing pullout. Due to the presence of humans (May through September), the wildlife and habitat surrounding Savage Cabin is not considered to be sensitive. The direct impact of this 0.1 acre habitat loss would not affect the overall availability of nearby wildlife habitat, especially considering the summer seasonal wildlife avoidance of the area due to human activity. Overall, the upgrades to toilet facilities at Savage Cabin would have negligible impacts on wildlife and habitat during both winter and summer seasons.

Birds and small mammals commonly occur in the forest and shrubs communities that characterize this area, but larger mammals such as caribou, bear, moose, and wolves that tend to avoid high-human use areas are uncommon. The proximity of the proposed SST location to existing disturbance at the park road and pullout would partly compensate for the habitat that would be impacted by the toilet upgrade under Alternative 2. Temporary construction noise produced, although perceptible by wildlife above the background noise, would cause the temporary displacement of small mammals and birds who would return to the area after the noise has ceased. Therefore, the upgrades to toilet facilities at Savage Cabin would have negligible impacts on wildlife.

Rest Stop East of the Campground

The direct impact of Alternative 2 on wildlife and habitat would include loss of approximately 2.4 acres of forest and shrub habitat as a result of clearing vegetation to develop the access road, parking areas, and trails. Other direct impacts include disturbance due to construction and road/facility maintenance and operation activities. Indirect impacts to wildlife would include increased disturbance due to an increase in human activities in the surrounding areas as a result of increased visitors use to the Savage River area.

Development of a new rest stop and associated visitor facilities under Alternative 2 would have localized, temporary, and therefore, minor impacts on wildlife and habitat. As described in Section 4.4.1 above, approximately 2.4 acres of habitat for small mammals, birds, and large mammals would be lost to new development. Similar wildlife habitat is present within the project area along the road corridor. Most of the loss of habitat due to clearing would be in linear features such as roads and trails, which minimized the impacts to wildlife at any specific location. The new development would be located just east of the existing Savage Campground, where the same type of habitat has been previously lost and otherwise disturbed. Some habitat fragmentation would occur on a small scale. Increased edge effects would result from vegetation clearing and would increase habitat diversity in the immediate area. Because the vegetation clearing would occur in an open forested area which is adjacent to a developed area, the impacts of both habitat fragmentation and edge effects would be negligible to minor.

Small mammals would be displaced from the immediate area of vegetation clearing and disturbance during construction. Displaced animals would occupy adjacent areas of similar habitat, which is common throughout the immediate area. Although large mammals such as bear, moose, and caribou utilize roadside habitats within the project area, they generally avoid the area proposed in Alternative 2 due to existing human activity and disturbance at the Savage Campground and traffic and disturbance on the park road.

Near the project area are two park wildlife closure areas, one for moose and one for wolf. However, both the moose closure area (between miles 5.5 and 10.5) and wolf den closure area (mile 8.5 to 11.5) are located east of the project area for Alternative 2 and should not be affected by construction or operations. The permanent loss of mammal habitats within the footprint of the road, facilities, and trails is relatively small compared to the amount of similar habitat in the project area, and no sensitive habitats would be disturbed. Therefore, the impacts on wildlife and habitat would be minor and could be mitigated by limiting construction activities during rut and denning activities.

Resident and migrant bird species would be displaced from the area of disturbance to some degree although many would likely use similar habitats in adjacent areas. One federal species of concern, the olive-sided flycatcher, could possibly be found feeding or roosting within the project area, although its preferred nesting habitat (open coniferous forests with bog ponds and marshy streams) is not in the project area. Disruptions of nesting would be avoided by restricting vegetation-clearing activities during the nesting season (refer to Section 2.5.3). Therefore, impacts to birds would be negligible to minor.

Operations associated with the proposed development would temporarily produce noise and activity levels that could cause localized displacement and disturbance of resident wildlife. However, some birds and small mammals within DENA that utilize habitats near the road may have become habituated to some degree to noise and human activity along the road and at Savage Campground. Large mammals tend to move throughout habitats alongside the road, so displacement due to an increase in human activity and noise would be difficult to ascertain. However, there would continue to be activity-avoidance by these large mammals of the general area and potentially a slight increase in avoidance with the addition of more visitors to the old Savage Camp area. Movement of animals through the area would not be greatly obstructed. For these reasons, any disturbance of wildlife from an increase in activity either operation of the proposed facilities would be minor.

Some small mammals, such as snowshoe hare and ground squirrels, could potentially experience direct mortality during construction activities. However, given the relatively small amount of habitat involved, the numbers of affected individuals, if any, would likely be relatively low, and the smallest mammals would likely occupy adjacent habitats. For these reasons, the impacts of mortality on wildlife would be considered minor.

Cumulative Impacts

Reasonably foreseeable future activities that could occur within the frontcountry are described in Section 4.2.2. Of these future activities, the development of an 8-ft wide shoulder along the length of the Denali Park Road has the highest potential to impact wildlife and habitat. Other projects such as culvert replacement, improving drainage and creating trails, could also impact habitat, depending on the location of the developments and the proximity to important habitat. ,

The duration would be permanent and therefore major. However, because there are no sensitive habitats other than the closure areas in place for wolf dens and moose rutting within the project area (and immediate vicinity of the road corridor), overall, cumulative impacts on wildlife and habitat resulting from past, present, and reasonably foreseeable future actions would be minor (see Table 4-1).

The overall contribution of Alternative 2 to the cumulative impacts on wildlife and habitat in the project area would be minor.

Conclusion

The developments proposed for Alternative 2 would impact about 2.4 acres of habitat in the vicinity of the old Savage Camp, plus an additional 0.1 acres for the new SSTs and short trail at the Savage Cabin. Overall, the impact on wildlife and habitat in the project area from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.4.4 Wilderness: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

While this project area is in close proximity to wilderness, the area is previously disturbed and is located adjacent to the park road and parking area for the Savage Cabin interpretive site. During the construction phase of the project there could be increased intrusion of sound into the wilderness. The existing toilets would be removed and the new facilities would be designed to fit with the landscape to minimize visual impacts. There would be no other direct impacts to wilderness anticipated from replacing the toilets in this area.

Rest Stop East of the Campground

There would be no impacts to physical wilderness characteristics from the construction of Alternative 2; all construction would be located outside of wilderness, adjacent to the existing Savage Campground and Denali Park Road. However, during operations of the site, there could be an increase in the creation of social trails in the area, vegetative trampling, and introduction of invasive species, largely in proximity to the park road.

There could also be impacts to the social characteristics of wilderness. While the park road and Savage Campground have long existed adjacent to the wilderness and pre-dated the (1980)

designation of DENA wilderness, a new development could change the area seen from wilderness and further alter the characteristic of remoteness. There could also be an increase in the intrusion of sound during the construction phase. Larger concentrations of people in the area during the operations phase could also increase sound intrusion in the wilderness, diminishing the characteristic of solitude. The social impacts would generally be localized, in the vicinity of the park road.

Cumulative Impacts

As indicated in Section 4.3.4, the cumulative impacts to wilderness include both physical and social aspects. The projects do not occur within wilderness, but in close proximity to it. The overall contribution of Alternative 2 to the cumulative effects on wilderness in the project area would be of a minor intensity and extent, but a major duration.

Conclusion

The developments proposed for Alternative 2 could impact physical characteristics of wilderness as well as the social characteristics of solitude and remoteness. The impact on wilderness adjacent to the project area from these developments and from recreational activities associated with these developments would be of minor intensity and extent, but of major duration. No impairment of wilderness would occur as a result of the actions proposed under this alternative.

4.4.5 Cultural Resources: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

The proposed site for SST construction has been partially previously disturbed and is located adjacent to the Denali Park Road, pullout and Savage Cabin interpretive loop trail. During the construction phase of the project, there could be potential for disturbing or excavating subsurface cultural resources, however the potential is anticipated to be low. There would be no other direct or indirect impacts to cultural resources anticipated from replacing the toilets in this area.

Rest Stop East of the Campground

There could be impacts to cultural resources due to implementation of Alternative 2. The proposed rest stop and access road is located near the park road, the Savage Campground, and the site of the old Savage Camp. During the construction phase of the project, there could be potential for disturbing or excavating subsurface cultural resources, however the potential is anticipated to be low. During the operation phase, impacts to cultural resources could result from increased visitation (e.g. trampling and incidental artifact discovery).

Cumulative Impacts

As indicated in Section 4.3.5, the cumulative impacts to cultural resources could include disturbance or alteration of cultural sites, but the probability is low because many of the proposed sites have been previously disturbed. The overall contribution of Alternative 2 to the cumulative effects on cultural resources in the project area would be minor.

Conclusion

The developments proposed for Alternative 2 could alter or disturb cultural resources, but the probability of impact is low. The impact on cultural resources from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.4.6 Visitor Use and Recreation: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

During the construction phase, there would be localized, temporary negative impacts to visitor experience and recreation opportunities through increased levels of dust and noise. However, when the facilities are operational, they would provide improved services for visitors resulting in long-term positive impact to visitor experience. SSTs would reduce truck traffic on the Denali Park Road because the existing chemical toilets require daily pumping while the SSTs would only be pumped as needed, monthly to annually. The SSTs would solve winter sanitation issues – currently winter campers have no sanitary facilities available for their use.

Rest Stop East of the Campground

During the construction phase of the rest stop, there would be localized, temporary negative impacts to visitor experience and recreation opportunities through increased levels of dust and noise, and decreased opportunities for wildlife viewing in the area. Once construction of the rest stop was complete, the facilities would provide long-term positive services for visitors and new recreation opportunities. The facilities would provide access to mountain viewing (particularly of Mount McKinley) and wildlife viewing opportunities. There would be new interpretive exhibits that enhance visitor experiences. Improved visitor amenities, such as additional parking and additional SSTs, would provide long-term services for visitor use. The new SSTs would provide long-term services during the winter months. This alternative would increase the recreation facilities and expand recreation opportunities in a localized area. Operation of the new rest stop would have a negative impact on visitors in the campground due to vehicle noise. Visitors in the campground would be negatively impacted because there would be fewer undirected and discovery opportunities east of the campground. Visitors to the new rest stop would benefit by being closer to the interesting historic old Savage Camp.

Cumulative Impacts

Past and present activities that could affect visitor use and recreation would be the same as discussed under Alternative 1 (Section 4.3.6). Reasonably foreseeable future activities are also discussed in general in Section 4.2.2. As discussed above, there would be minor direct and indirect negative impacts resulting from the implementation of this alternative.

The existing condition described in Section 3.6, combined with past, present, and reasonably foreseeable future actions, indicate that the implementation of Alternative 2 may have a minor contribution to a cumulative negative impact on visitor use and recreation due to the long-term nature of operations of these facilities. Positive impacts generally consist of localized increased recreation facilities and expanded recreation opportunities. Visitors would benefit from an interpretive loop trail to an interesting historic site, the old Savage Camp.

Conclusion

The developments proposed for Alternative 2 could negatively impact visitor use and recreation during project construction and operation. The negative impacts of construction (e.g. dust and noise) would generally be temporary and localized, or minor impacts. The positive impacts of operation (e.g. increased recreation facilities and expanded recreational opportunities) would be long-term and localized. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.4.7 Visual Resources: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

There would be localized, temporary impacts to visual resources during the construction phase of the toilet replacement project, due to equipment and dust. The facilities would be located among the trees to provide visual screening. The facility design would also complement natural features to reduce visual impact.

Rest Stop East of the Campground

There would be localized, temporary impacts to visual resources from the road during the construction phase of the rest stop due to equipment and dust. The new overlooks would give visitors new vantage points for different scenic landscapes. However, the view from outside of the project area boundaries (e.g., views as seen from the Denali Park Road or adjacent wilderness) would be altered, even though the facilities would be designed to be compatible with natural features in order to reduce visual impact.

Cumulative Impacts

Past and present activities that could affect visual resources would be the same as discussed under Alternative 1 (Section 4.3.7). While there has been development within the first 15 miles of the Denali Park Road, impacts on the surrounding visual landscape were mitigated as much as possible through design. Reasonably foreseeable future activities that could affect visual resources would be the same as discussed under Alternative 1, and are discussed in general in Section 4.2.2. There would be moderate direct and indirect impacts resulting from the construction of this alternative, as discussed above.

The existing condition described in Section 3.7, combined with past, present, and reasonably foreseeable future actions, indicate that the implementation of Alternative 2 may have a moderate contribution to a cumulative impact on visual resources due to the long-term nature of operations of these facilities. New impacts would mostly be localized. The overall contribution of Alternative 2 to the cumulative effects on visual resources in the project area would be minor.

Conclusion

The developments proposed for Alternative 2 could impact visual resources during project construction and operation. The impacts of construction (e.g. equipment operation) would be temporary and localized. The impacts of operation would be minor, long-term and localized (e.g. view of the facility and view from the facility). No impairment of visual resources would occur as a result of the actions proposed under this alternative.

4.4.8 Local Communities/Socioeconomic Resources: NPS Preferred Alternative Impacts

Common Action – SSTs at Savage Cabin

During the construction phase of the project, there could be increased construction employment and a negligible contribution to the local economy. There would be no other anticipated direct or indirect impacts to local communities and socioeconomic resources anticipated from replacing the toilets in this area.

Rest Stop East of the Campground

There could be impacts to local communities and socioeconomic resources due to implementation of Alternative 2. Construction activities would cause a temporary stimulus to the local economy. Operations of the site could encourage park visitors to spend more time in DENA and the surrounding local communities. Longer stays in the park and vicinity could result in visitors contributing to the local economy.

Cumulative Impacts

As indicated in Section 4.3.8, the cumulative impacts to local communities and socioeconomic resources could include contributions to the local economy. The overall contribution of Alternative 2 to the cumulative effects on local communities and socioeconomic resources would be of minor intensity and extent, and a minor to moderate duration.

Conclusion

The developments proposed for Alternative 2 could provide contributions to the local economy. The impact on local communities and socioeconomic resources from these developments and from recreational activities associated with these developments would be minor.

4.5 Impacts of Alternative 3: DCP Alternative – Northwest of Campground

4.5.1 Vegetation and Soils: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

As described in Section 4.4.1, the project area is partly previously impacted and is located directly adjacent to the highway and pullout. The construction of the SSTs and trail would impact only about 0.1 acres of vegetation and soils. Therefore, the overall impact of the common action on vegetation and soils would be minor.

Rest Stop Northwest of the Campground

Alternative 3 would be designed similarly to Alternative 2 with cleared areas for an asphalt access road, asphalt parking area, paths, covered viewing decks, and pads for SSTs (see Figure 2-3). However, because this alternative would be located closer to the Denali Park Road, the access road would be shorter than that described for Alternative 2. Therefore the APE for this action is 2.3 acres (slightly less than that determined for Alternative 2).

Potential direct impacts associated with the construction of a paved access road and parking area would include the loss of vegetation. As described above for the improvements at the Savage Cabin, the development would affect the area's vegetation and soil to a minor extent, with minor intensity due to the small area impacted (see Table 4-1). However the duration of the disturbance would be long-term. Considering that the vegetation classes affected extend over much of the baseline vegetation acreage within the project area the loss of these 2.3 acres is considered to be a minor impact on vegetation and soils.

Potential indirect impacts associated with construction include sediments and pollutants from road runoff, and potential introduction of invasive species, subsequently reducing ecological diversity. BMPs and design standards can minimize contaminant introduction from road runoff. Indirect impacts associated with construction of include habitat fragmentation and increased edge effects, and potential introduction of exotic species, and subsequent reduction of ecological diversity.

Cumulative Impacts

As described in Section 4.3.1, past, on-going, and reasonably foreseeable future activities have impacted and will continue to impact vegetation and soils along the first 15 miles of the Denali Park Road. However, as described for Alternative 1, the cumulative impacts of these projects on vegetation and soils could be minor to moderate.

The overall contribution of Alternative 3 to the cumulative impacts on vegetation and soils in the project area would be minor.

Conclusion

The developments proposed for Alternative 3 would impact about 2.3 acres of vegetation and soils in the area northwest of the Savage Campground, plus an additional 0.1 acres for the new SSTs and short trail at the Savage Cabin. The impact on vegetation and soils in the project area from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.5.2 Wetlands: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

The construction of the SSTs and trail under Alternative 3 would impact no more than 0.1 acres of wetlands; therefore, there overall impact of the common action on wetlands would be minor.

Rest Stop Northwest of the Campground

The construction footprint of Alternative 3 would be similar to Alternative 2 except that the access road would be shorter than the road proposed for Alternative 2. As discussed in the SOF (see Appendix A), Alternative 3 would directly impact approximately 2.1 acres of wetlands.

The direct impacts of Alternative 3 on the area's palustrine forested and scrub shrub wetlands would be the loss of wetlands from placement of fill for the construction of a paved access road and parking lot, and paths. Indirect impacts would include disturbance of wetland vegetation from increase visitor traffic in adjacent areas.

As described for Alternative 2 (Section 4.4.2), because the wetlands area that would be filled (and permanently lost) is relatively small compared to the total amount of the same type of wetlands throughout the project area, and the extent would be localized, the impact of the loss of the wetland functions and values under Alternative 3 is considered moderate.

BMPs and design standards would minimize the potential for indirect impacts of lateral flow disruption and contaminant introduction from road runoff.

Cumulative Impacts

As described in Section 4.3.2, past actions have impacted wetlands along the first 15 miles of the Denali Park Road, but the intensity and extent of past impacts on wetlands can be considered moderate, even though the duration is long-term (see Table 4-1). Reasonably foreseeable future activities such as the development of an 8-ft wide shoulder along the length of the Denali Park Road would have a high potential to impact wetlands, while other projects have a lower potential to impact wetlands. These projects could induce negligible to moderate cumulative impacts on

wetlands (see Table 4-1). The overall contribution of Alternative 3 to the cumulative impacts on wetlands in the project area would be moderate.

Conclusion

The developments proposed for Alternative 3 would impact about 2.1 acres of wetlands. The impact on wetlands in the project area from these developments and from recreational activities associated with these developments would be long-term and moderate. No impairment of wetlands would occur as a result of the actions proposed under this alternative.

4.5.3 Wildlife and Habitat: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

As described for Alternative 2 (Section 4.4.1), the construction of the SSTs and trail would impact only about 0.1 acres of vegetation and soils, therefore, the overall impact of the common action on vegetation and soils would be negligible.

Rest Stop Northwest of the Campground

Construction for Alternative 3 would be similar to Alternative 2 except that the asphalt access road would be shorter in length. Human-wildlife interactions could occur near the site because the vegetation is high and people cannot see the animals (bear or moose) when walking through the high brush. The APE for this alternative is 2.3 acres, slightly less than the 2.4 acres determined for Alternative 2. The development of a new rest stop and associated visitor facilities under Alternative 3 would have localized, temporary, and therefore, minor impacts on habitat for small mammals, birds, and large mammals. The APE is relatively small compared to the amount of similar habitat in the project area, and the new development would be located adjacent to a developed area (Savage Campground); these would serve to minimize the impacts to wildlife and habitat for this alternative. The wildlife closure areas previously described are located east of the development area for Alternative 3 and should not be affected by construction or operations. The permanent loss of mammal habitats within the footprint of the road and facilities is relatively small compared to the amount of similar habitat in the project area, and no sensitive habitats will be disturbed. Therefore, the impacts on wildlife and habitat would be minor, even though the duration would be major.

The construction phase could cause displacement and disturbance of small mammals and birds that use the roadside habitats. The impacts would be minor because some animals may have become habituated to some degree to noise and human activity along the road and at Savage Campground. Disruptions of nesting migratory birds would be avoided by restricting vegetation-clearing activities during the nesting season (Refer to Section 2.5.3). Snowshoe hare and ground squirrels could potentially experience direct mortality during construction activities, but the number of affected individuals would be low due to the small area of vegetation cleared, so the impacts of mortality on wildlife would be considered minor. Large mammals tend to move throughout habitats alongside the road, so displacement due to an increase in human activity and noise would be difficult to ascertain. Brushy vegetation at the site could increase the possibility of human-wildlife interactions. Movement of animals through the area would not be obstructed. Disturbance of wildlife from increased activity during construction or operations of the proposed facilities would be minor.

Cumulative Impacts

Of the reasonably foreseeable future activities that could occur within the frontcountry described in Section 4.2.2, the development of an 8-ft wide shoulder along the length of the Denali Park Road has the highest potential to impact wildlife and habitat. As described for Alternative 2 (Section 4.4.2), other future projects could also impact habitat, depending on the location of the developments and the proximity to important habitat. Because no sensitive habitats would be impacted by these projects, overall cumulative impacts on wildlife and habitat resulting from past, present, and reasonably foreseeable future actions would be negligible to minor (see Table 4-1).

The overall contribution of Alternative 3 to the cumulative impacts on wildlife and habitat in the project area would be minor.

Conclusion

The developments proposed for Alternative 3 would impact about 2.3 acres of habitat in the vicinity of the Savage Campground, plus an additional 0.1 acres for the new SSTs and short trail at the Savage Cabin. The impact on wildlife and habitat in the project area from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.5.4 Wilderness: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

Refer to Section 4.4.4 for impacts to wilderness from replacing the toilets at the Savage Cabin interpretive site.

Rest Stop Northwest of the Campground

The impacts to wilderness from the implementation of Alternative 3 would be very similar to the impacts described in Section 4.4.4 for Alternative 2; there would be physical impacts to wilderness during operation of the project and social impacts during construction and operation, largely in proximity to the park road. This site is just west of the proposed site for Alternative 2, west of the Savage Campground, and immediately south of the Savage Cabin interpretive site.

Cumulative Impacts

As indicated in Section 4.3.4, the cumulative impacts to wilderness include both physical and social aspects. The projects do not occur within wilderness, but in close proximity to it. The overall contribution of Alternative 3 to the cumulative effects on wilderness in the project area would be of minor intensity and extent, but of major duration.

Conclusion

The developments proposed for Alternative 3 could impact physical characteristics of wilderness as well as the social characteristics of solitude and remoteness. The impact on wilderness adjacent to the project area from these developments and from recreational activities associated with these developments would be of minor intensity and extent, but of major duration. No impairment of wilderness would occur as a result of the actions proposed under this alternative.

4.5.5 Cultural Resources: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

Refer to Section 4.4.5 for impacts to cultural resources from replacing the toilets at the Savage Cabin interpretive site.

Rest Stop Northwest of the Campground

The impacts to cultural resources from the implementation of Alternative 3 would be similar to the impacts described in Section 4.4.5 for Alternative 2. Negative impacts to the cultural resources at the old Savage Camp due to social trails, trampling and incidental collecting would be greater under Alternative 2 than under Alternative 3. There could be potential for disturbing or excavating cultural resources during construction, however the potential is anticipated to be low.

Cumulative Impacts

As indicated in Section 4.3.5, the cumulative impacts to cultural resources include disturbance or alteration of cultural sites, but the probability is low because much of the proposed site has been previously disturbed. The overall contribution of Alternative 3 to the cumulative effects on cultural resources in the project area would be minor.

Conclusion

The developments proposed for Alternative 3 could alter or disturb cultural resources, but the probability of impact is low. The impact on cultural resources from these developments and from recreational activities associated with these developments would be minor. No impairment of these resources would occur as a result of the actions proposed under this alternative.

4.5.6 Visitor Use and Recreation: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

Refer to Section 4.4.6 for impacts to visitor use and recreation due to replacing the toilets at the Savage Cabin interpretive site.

Rest Stop Northwest of the Savage Campground

The negative impacts to visitor use and recreation from the implementation of Alternative 3 would be similar to the impacts described for Alternative 2 in Section 4.4.6, except that Alternative 3 would have closer proximity to roadside traffic, traffic noise, and traffic safety problems. There would be localized, temporary negative impacts to visitor experience and recreation opportunities during construction through increased levels of dust and noise, and decreased opportunities for wildlife viewing in the area. However, once construction of the rest stop area was complete, the facilities would provide long-term services for visitors and new recreation opportunities in a localized area resulting in positive impacts to visitor use and recreation.

Mountain views, especially those of Mount McKinley, from the Alternative 3 site are not as good as from the Alternative 2 site. Trail hiking opportunities and interpretive trail opportunities of Alternative 3 are not as good as for Alternative 2 because the Alternative 3 site is brushy, not as open, so trails would lack scenic views. There would be a higher potential for negative

wildlife-human encounters under Alternative 3 because of the high, brushy vegetation. Under Alternative 3, there would be no adjacent interesting historic old Savage Camp to walk to.

A notable difference between Alternatives 2 and 3 is the proximity to the Savage Cabin interpretive site (compare Figures 2-2 and 2-3). The construction of a destination-style rest stop at the Alternative 3 location would increase casual visitation to the cabin by independent travelers. The cabin is already heavily visited and near capacity. The added traffic and noise would potentially impact visitors to the cabin and the cabin loop trail. The proximity would allow more park visitors to enjoy the cabin and the cabin loop trail. The visitors crossing the Denali Park Road between the new rest stop and the cabin would increase the pedestrian safety hazard in the area.

Noise disturbance of visitors at the campground from vehicles at the rest stop under Alternative 3 would be less than the noise under Alternative 2 because of the greater density of vegetation.

The development of social trails from the new rest stop south to the Savage River would be less in Alternative 3 than in Alternative 2 because of the dense brush that is difficult to walk through.

This site would be located in the Level 2 Development Zone identified in the DCP/EIS. The proposed facilities are compatible with this zone.

Cumulative Impacts

Past and present actions would be the same as those discussed under Alternative 1 (Section 4.3.6). Reasonably foreseeable future actions are discussed in general in Section 4.2.2. The cumulative impacts for Alternative 3 would be very similar to the impacts described for Alternative 2 in Section 4.4.6. As mentioned above, there could also be potential impacts to visitors to the Savage Cabin.

The existing condition described in Section 3.6, combined with past, present, and reasonably foreseeable future actions, indicate that the implementation of Alternative 3 may have a minor contribution to a cumulative impact on visitor use and recreation due to the long-term nature of operations of these facilities. The extent of impacts to visitor use and recreation could extend into the Savage Cabin interpretive site.

Conclusion

The developments proposed for Alternative 3 could impact visitor use and recreation during project construction and operation. The impacts of construction (e.g. dust and noise) would generally be temporary and localized, or minor impacts. The impacts of operation (e.g. increased recreation facilities) would be beneficial, long-term, and could increase visitor use in the vicinity of the Savage Cabin interpretive site. No impairment of visitor use and recreation would occur as a result of the actions proposed under this alternative.

4.5.7 Visual Resources: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

Refer to Section 4.4.7 for impacts to visual resources from replacing the toilets at the Savage Cabin interpretive site.

Rest Stop Northwest of the Campground

The impacts to visual resources from the implementation of Alternative 3 would be somewhat greater than though similar to the impacts described for Alternative 2 in Section 4.4.6. Alternative 3 would be located closer to the existing park road with only a 50 foot long access road. The facilities would be highly visible from the existing Primrose pullout, as compared to Alternative 2. There would be localized, temporary impacts to visual resources from the road during the construction phase of the rest stop from equipment and dust. The overlook would give visitors new vantage points for different scenic landscapes. However, due to topography, the views of Mt. McKinley are more limited under Alternative 3 than under Alternative 2. The view of the new facilities from outside of the project area boundaries (e.g., as seen from the Denali Park Road or from wilderness) would be altered, even though the facilities would be designed to be compatible with natural features in order to reduce visual impact.

Cumulative Impacts

Past and present activities that could affect visual resources would be the same as discussed under Alternative 1 (Section 4.3.7). While there has been development within the first 15 miles of the park road, impacts on the surrounding visual landscape were mitigated as much as possible through design. Reasonably foreseeable future activities that could affect visual resources are discussed in general in Section 4.2.2.

The existing condition described in Section 3.7, combined with past, present, and reasonably foreseeable future actions indicate that the implementation of Alternative 3 may have a minor contribution to a cumulative impact on visual resources due to the long-term nature of operations of these facilities. Impacts would be mostly localized.

There would be minor direct and indirect impacts resulting from the construction of this alternative, as discussed above. The overall contribution of Alternative 3 to the cumulative effects on visual resources would be minor.

Conclusion

The developments proposed for Alternative 3 would impact visual resources during project construction and operation. The impacts during construction (e.g. equipment operation) would generally be temporary, localized and minor. The impacts during operation would be long-term, localized (e.g. view of the facility from Primrose and view from the facility), and minor. No impairment of visual resources would occur as a result of the actions proposed under this alternative.

4.5.8 Local Communities/Socioeconomic Resources: DCP Alternative Impacts

Common Action – SSTs at Savage Cabin

Refer to Section 4.4.8 for impacts to local communities and socioeconomic resources due to replacing the temporary chemical toilets at the Savage Cabin interpretive site.

Rest Stop Northwest of the Campground

The impacts to local communities and socioeconomic resources from the implementation of Alternative 3 would be very similar to the impacts described in Section 4.4.8 for Alternative 2; construction and operation of the project could result in contributions to the local economy.

Cumulative Impacts

As indicated in Section 4.3.8, the cumulative impacts to local communities and socioeconomic resources could include contributions to the local economy. The overall contribution of Alternative 3 to the cumulative effects on local communities and socioeconomic resources would be of minor intensity and extent and a minor to moderate duration.

Conclusion

The developments proposed for Alternative 3 could provide contributions to the local economy. The impact on local communities and socioeconomic resources from these developments and from recreational activities associated with these developments would be minor.

5.0 CONSULTATION AND COORDINATION

5.1 Public Meetings

Public involvement activities implemented as part of this EA process included a public meeting held on June 23, 2005 from 7 to 9 PM at the Murie Science and Learning Center, DENA. In addition to NPS and contractor staff, approximately 10 members of the public were in attendance.

Mike Tranel, NPS Chief of Planning for DENA, spoke about the project's origins from the 1997 DCP/EIS or Frontcountry Plan. The DCP/EIS is the guiding document for all construction that would occur in the planning area. He quoted from the plan where the Savage Rest Stop project is referenced. The vision of the DCP/EIS is to get visitors out of vehicles to more intimately experience DENA. Currently there is room for buses and people, but the park cannot accommodate large numbers of private vehicles. The first 15 miles of the Denali Park Road are open to private vehicle access, and the Savage shuttle also transports people in and out of the area. Several of the frontcountry facilities have been planned to encourage visitors to use the Savage shuttle. There are only 18 automobile parking spaces at the Savage River Bridge east rest area. A new rest stop in the frontcountry would provide a staging area for day use, encouraging visitors to leave their vehicles to explore DENA.

The public meeting continued with a presentation of four schematic design concepts. Public attendees were encouraged to comment in person at the meeting, or by mailing in a comment sheet. Written comments received at the meeting have been incorporated into the public record; no comments were received by mail. Questions/comments voiced at the public meeting included:

- What is the projected impact on winter use of the project area? Brad Richie (NPS) responded that NPS is currently planning to increase the winter activity potential. It was also mentioned that an SST at the new rest stop could benefit winter users, whereas a water-based rest room would be closed for the winter season.
- This project identifies potential trailheads; is the NPS committed to the proposed trails that are mentioned? Brad Richie answered that this project is identifying some trail opportunities, and NPS will address the trail potential. Joe Durrenberger (NPS) mentioned that a trail plan is in development and that a separate EA will assess trail construction impacts within DENA. This project is dealing with the potential for trailheads but not construction of the trails themselves.

5.2 Agency Consultation and Coordination

There are no cooperating agencies identified for this action. The NPS has determined that there are no Threatened and Endangered Species expected in the project area; therefore Endangered Species Act Section 7 consultation with the USFWS is not required. The NPS has determined that potential cultural resource impacts will not require consultation with SHPO or with tribal entities.

5.3 List of EA Preparers

Sue Ban, M.S. – Project Manager, Senior Biologist, URS Corp.

Joan Kluwe, Ph.D. – Environmental Scientist, URS Corp.

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Richard L. Anderson – Environmental Protection Specialist, NPS

Joe Durrenberger – Park Engineer, NPS

Brad Richie – Architect, NPS

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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 of 1980 (ANILCA). It summarizes the evaluation of potential restrictions to subsistence activities that could result from the construction of two new trails 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. . . ." (ANILCA Section 810(a))

III. PROPOSED ACTION ON FEDERAL LANDS

Alternatives 1 through 3 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 construct a new rest stop near the Savage Campground, mile 12 of the park road in the frontcountry 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 two new trails in the entrance area would have a long-term but minor impact on wildlife habitat and populations. The use of the trails would supplant existing use by

pedestrians on the Roadside Path and by some pedestrians presently crossing the airstrip and railroad tracks.

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 of 1916.

VII. ALTERNATIVES CONSIDERED

The alternatives considered for this project were limited to the lands near the Savage Campground in the frontcountry area to the park. The alternatives are: 1) continue the existing conditions (No Action) which include visitor use of the several small pullouts and rest areas along the first 15 miles of the park road up to the Savage River Bridge; 2) construction of a new 30-vehicle rest stop near the old Savage Camp with a 300-foot access road; and 3) construction of a new rest stop west of the Savage Campground adjacent to the park road.

VIII. FINDINGS

This analysis concludes that the preferred alternative, Alternative 2, would not result in a significant restriction of subsistence uses.

APPENDIX B

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

**Construction of a New Savage River Area Rest Stop
Denali National Park and Preserve, Alaska**

January 2006

Recommended:

Superintendent, Denali National Park and Preserve

Date

Certified for Technical Accuracy and Servicewide Consistency:

Chief, Water Resources Division, Washington Office

Date

Approved:

Regional Director, Alaska Region

Date

PURPOSE AND NEED FOR ACTION

The National Park Service (NPS) has prepared and made available for public review an environmental assessment (EA) to evaluate the impacts of construction of new visitor facilities in the Savage Campground area in Denali National Park and Preserve.

The approved 1996 Entrance Area and Road Corridor Development Concept Plan for Denali National Park and Preserve identified the need for the expansion of visitor facilities in the Savage Campground area. The current facilities do not provide enough parking, toilet and trailhead facilities between mile 9.5 and the Savage River Bridge at mile 14.7 to meet the needs to visitors who travel the road or want to get out of their vehicles and enjoy the mountain and wildlife viewing opportunities.

The NPS is proposing to construct a new rest stop at mile 12.3 of the park road. A new 300 foot spur road would connect to a 30 vehicle parking lot, toilets, covered deck, and trailhead. In addition, the NPS proposes to replace the six existing temporary chemical toilets at the Savage Cabin pullout with four double vault sweet smelling toilets (SSTs) (see Figure 2-2 of EA, attached below).

Executive Order 11990 (Protection of Wetlands) requires the NPS, and other federal agencies, to evaluate the likely impacts of actions in wetlands. The executive order requires that short and long-term adverse impacts associated with occupancy, modification or destruction of wetlands be avoided whenever possible. Indirect support of development and new construction in such areas should also be avoided wherever there is a practicable alternative.

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

The purpose of this Statement of Findings (SOF) is to present the NPS rationale for its proposed plan to construct portions of the Savage Rest Stop project in the wetland area. This SOF also documents the anticipated effects on these resources.

WETLANDS WITHIN THE PROJECT AREA

Wetland boundaries were identified in the field by NPS personnel and the boundaries were transferred to 2004 air photos and transferred to a GIS layer by NPS staff to determine wetland acreage. The U.S. Army Corps of Engineers (USACE) visited the project site in July 2003 and agreed with the wetlands delineation within the project area. Of the 2.5 acres affected by the proposed action, 0.2 acres were classified as wetlands (Figure 2-2) under the "Classification of Wetlands and Deepwater Habitats of the United States," the Cowardin Classification System (Cowardin et al. 1979), and are therefore subject to NPS wetlands compliance procedures. Of the total 2.5 acres of disturbed land, 2.3 acres are upland, as evidenced by the white spruce associations, the lack of hydrologic indicators, and the presence of well-draining soils.

The wetlands located within the proposed project area consist of wet scrub-shrub and forested wetlands. The core area of wetlands is classified as Palustrine Scrub-Shrub, Broad-leaved Deciduous, saturated wetlands (PSS1B). The areas surrounding these core wetlands are classified as Palustrine Forested, Needle-leaved Evergreen, saturated wetlands (PF04B). These wetlands provide habitat for small mammals, such as red squirrels, snowshoe hares, and porcupine; bird species, including gray jays, robins, thrushes, sparrows, and warblers. Moose frequent the area for forage, and it is considered potential moose calving area.

The major plant species on the wetland sites include willow spp., including *Salix brachycarpa*, subspecies *niphoclada*, dwarf birch and white spruce. Common ground cover includes mosses, lichens, crowberry and a variety of forbs. No threatened or endangered animal or plant species are found in the area and no research or reference sites have been developed in the project area.

No water supply points or wells are located between the project site and the Savage River approximately 2,000 feet away. No floods are known from the site, as forests cover most of the adjacent land and gravelly layers which absorb the rainfall are below the surface soils. The wetlands function to attenuate some snow melt surface flow during break-up, when the ground is still frozen.

The wetland type described above is common throughout the eastern areas of Denali National Park and Preserve. The park has determined that the potential wetlands located at the project site are locally common and have limited environmental significance for the area, in terms of surface water quality, including sediment control and water purification, animal habitat, and cultural resources.

THE PROPOSAL IN RELATION TO WETLANDS

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

The construction of a new Savage Rest Stop and related facilities will impact a maximum of 0.2 acres of wetlands. The extent of disturbance is shown on the attached project plan.

Approximately 0.1 acre of wetlands will be disturbed for the construction of the new SSTs to replace the chemical toilets at the Savage Cabin pullout. The location in wetlands was chosen because of the need to have the toilets adjacent to the tour bus parking area, though behind a narrow screen of roadside trees. The wilderness boundary also limits how far toward the cabin the toilets could be placed.

Approximately 0.1 acre of wetlands will be disturbed for the construction of the new rest stop. This rest stop site was chosen to balance a number of factors, including maximum distance from the Savage Campground, an open view toward Mt. McKinley, good screening from the park road, and not disturbing the site of the Old Savage Camp. The requirement for a view of Mt. McKinley necessitated putting the pedestrian part of the rest stop at the edge of the open wetlands. The design of the parking area and access road was adjusted northward so that none of the vehicular areas would disturb wetlands. The SSTs and covered deck at the south edge of the parking area would be in wetlands.

The wetland soils are very thin in much of the project area and sit on old gravelly alluvial fans. Most project construction can be accomplished by placing clean fill on top of the existing soils to the depth necessary to support pedestrian or vehicular traffic, depending on the use.

Discharge of dredged or fill material into jurisdictional wetlands is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. According to a recent determination by Corps personnel, the project would not affect wetlands under the jurisdiction of the Corps (Don Rice, pers. comm.).

MITIGATION PROPOSED

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

Of the 2.5 acres affected by the proposed action, 0.2 acres are classified as wetlands. This SOF commits to full 1:1 compensation for the 0.2 acres of disturbed wetlands.

On-Site Rehabilitation

As much as possible, disturbance of wetlands in and around the project area would be avoided. Any areas disturbed by construction activities would be restored to as near natural conditions as possible. Prior to the start of construction activities, the NPS would salvage as much topsoil, organic matter, and vegetation as necessary for later use in site revegetation. Salvaged material would be stockpiled separately and would be returned to the disturbed areas following construction.

Approximately 0.5 acres of disturbed lands will be revegetated with native plants after the completion of the construction activities. The Denali National Park and Preserve's Resource Preservation and Research Division would perform all revegetation activities.

Off-Site Compensation (Wetland Restoration)

Compensation, by restoration of previously disturbed degraded wetlands, is required under the NPS no-net-loss policy for projects involving disturbance or loss of wetlands. Compensation will occur for the loss of 0.2 acres of palustrine wetland. One-for-one compensation will be completed elsewhere in the park by restoring a riverine and palustrine wetland in the Kantishna Hills region of the park. It is anticipated that the wetland functions and values lost at the project site will be balanced by those functions and values regained at a restored former placer mine site.

A Federal Highways Administration funded project to remove gravel from former placer mined areas in Kantishna is scheduled for 2007-2008. Two tenths acres within the park's Eldorado Creek floodplain has been selected for restoration within the scope of this mitigation. These wetlands are classified as Riverine Upper Perennial Unconsolidated Shore with Intermittent Flooding (R3USJ),

and Palustrine Unconsolidated Shore Cobble Gravel Seasonally Flooded/Well-Drained (PUS1D). Restoration plans include removing and disposing of debris; stabilizing the channel and floodplain; stabilizing the access road; and revegetating the stripped areas. Preliminary work includes water and soil sampling, and engineering surveys of the existing stream channel, floodplains, and upland topography. Discharge measurements will be collected to aid in stream channel design. Soil sampling will assess the geo-chemistry of the upper watershed, and determine the soil's potential for revegetation efforts. Surveys, both cross-sectional and topographical, will be conducted to supplement site data on the NPS topographic maps. This information will be used to locate and estimate material amounts for use in recontouring the site and reconstructing the stream channel and floodplain.

Cost estimates for this project are approximately \$17,000 per acre, based on an unpublished report, "Cost Estimation for Reclamation, National Park Service, Alaska Regional Office, January 1994." This report reviewed three separate mining reclamation projects that were conducted on abandoned claims in Denali National Park and Preserve.

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

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

ALTERNATIVES CONSIDERED

Alternative 1 describes the existing conditions (No Action) in the Savage Campground area. No additional Rest Stop would be constructed west of mile 9.5.

Alternative 2 describes the NPS preferred alternative to construct a new 30-vehicle rest stop and related facilities, adversely impacting 0.2 acres of wetlands.

Alternative 3 describes a similar construction project but located close to the site identified conceptually in the Frontcountry DCP, adversely impacting 2.1 acres of wetland.

Several alternatives were discussed during the project scoping process but were eliminated from further evaluations. These are briefly explained in the EA.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES ASSOCIATED WITH THE PROPOSED ACTION

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

CONCLUSION

The NPS concludes that there are no practicable alternatives to disturbing 0.2 acres of wetlands and to building facilities within wetlands for the construction and operation of the proposed Savage Area Rest Stop in Denali National Park. Wetlands would be avoided to the maximum practicable extent. The wetland impacts that could not be avoided would be minimized. The NPS acknowledges that some natural localized wetlands processes would be lost by the Savage Rest Stop project. Impacts on the 0.2 acres of wetlands would be compensated for, on a minimum 1-for-1 acreage basis, by restoring riverine and palustrine wetland habitat and associated riparian habitat, in the Kantishna Hills region of the park (formerly placer-mined stream and riparian habitat). The NPS finds that this project is consistent with the Procedural Manual #77-1, *Wetland Protection*, 2003 and with NPS Director's Order #77-1, *Wetland Protection*. The NPS finds that this project is in compliance with Executive Order 11990, *Wetland Management*.

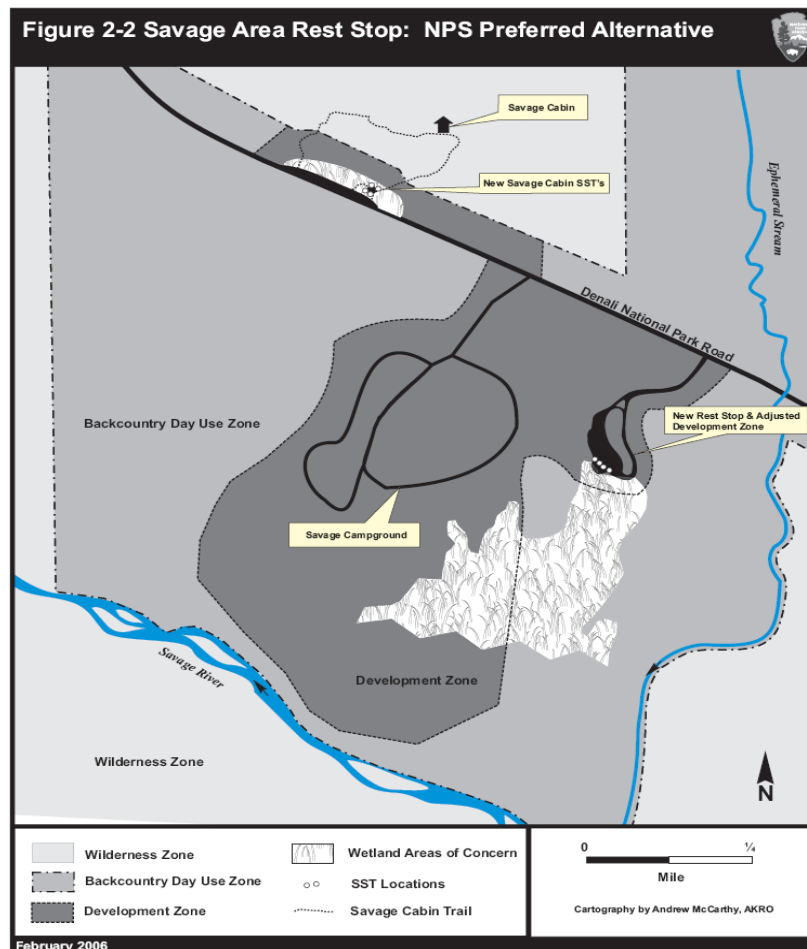


Figure B-1
Wetlands Compensation Area

