

Chapter 1

Background



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INTRODUCTION

The National Park Service (NPS) is evaluating alternatives for the management of vehicle use along the primary road in Denali National Park and Preserve (see figure 1). This *Denali Park Road Vehicle Management Plan* is intended to assist park managers with decision making and management of vehicles on the Park Road for the next 15 to 20 years. In this vehicle management plan / environmental impact statement (EIS), the National Park Service analyzes three management alternatives, including a no-action alternative, and the environmental impacts associated with implementing the alternatives (the alternatives are described fully in chapter 2 of this document).

From this full range of alternatives, NPS managers will identify and select a preferred alternative that would implement the vision, goals, objectives, and strategies (including user capacity) for managing vehicles on the road in a fashion that optimizes visitor experience and preserves park resources and values. The plan would continue to guide and prioritize long-term monitoring activities along the road corridor to assess whether desired conditions are being achieved and maintained. As part of the overall management strategy, it may be necessary that future adjustments to the transportation system and non-system use are made to ensure that desired conditions are met. The public would be informed of any future decisions regarding the management of the road, including any necessary adjustments to the transportation system.

The environmental impact statement 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). This chapter presents information on why the National

Park Service is taking action at this time to evaluate a range of alternatives and management actions for use of the Park Road at Denali.

Specifically, this chapter includes the following:

- The purpose of and need for action
- Planning goals and objectives
- The planning background, including desired conditions
- A discussion of issues and impact topics identified during the scoping process and considered in preparation of the plan/ environmental impact statement, as well as issues dismissed from further analysis
- The relationship to other park plans
- Applicable laws, regulations, and policies

PURPOSE OF ACTION

The purpose of the proposed National Park Service action is to improve the management of vehicles along the 92-mile-long Denali Park Road (figure 2). The goal of the plan is to provide a high quality experience for visitors; protect wilderness resource values, scenic values, wildlife, and other park resources; and maintain the unique character of the Park Road. The proposed alternatives consider the Park Road's user capacity (the maximum number of vehicles that can be accommodated on the road during the peak visitation period of May through September), and provides a means to assess the effectiveness of the transportation system in protecting park resources and providing for visitor access and enjoyment.

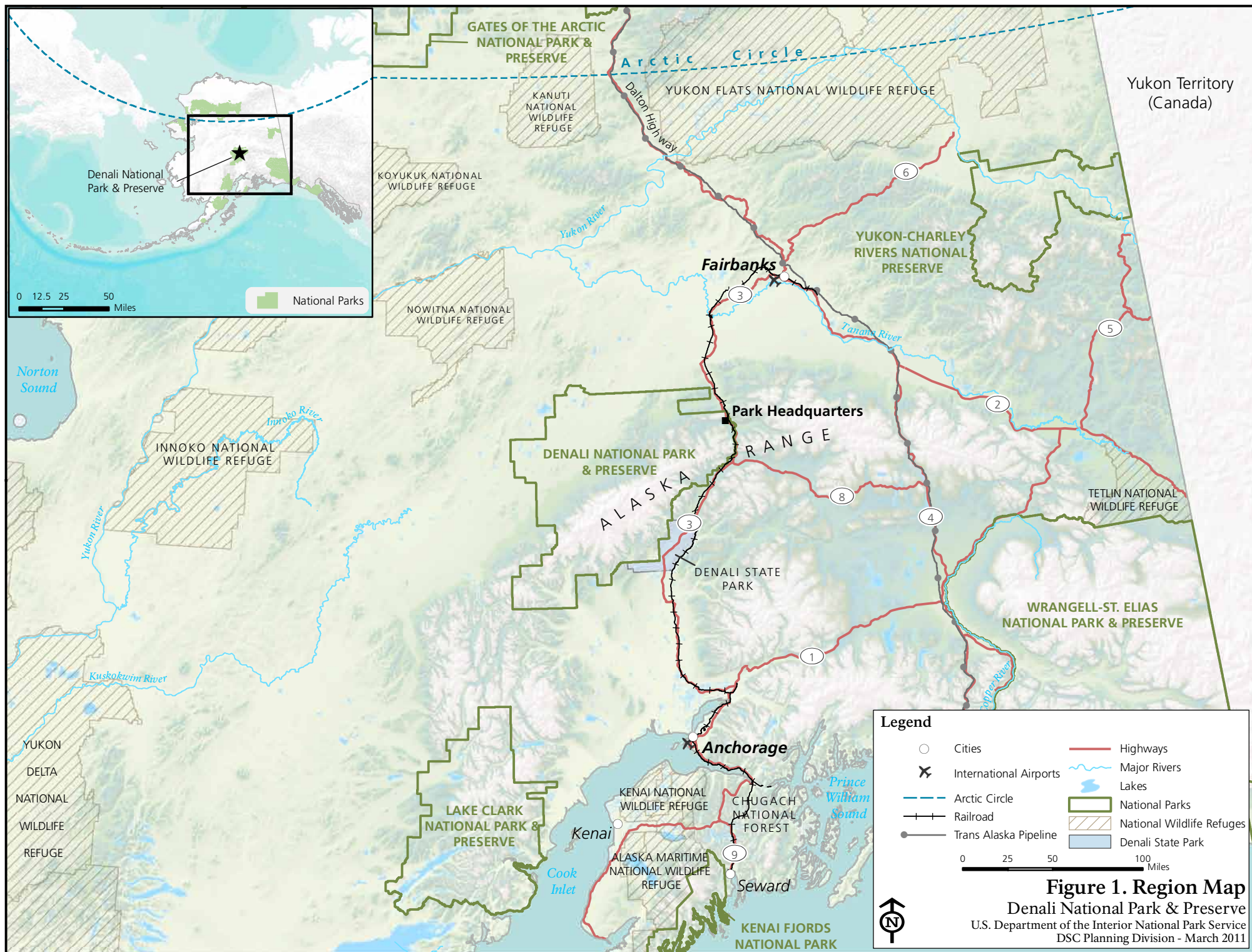
NEED FOR ACTION

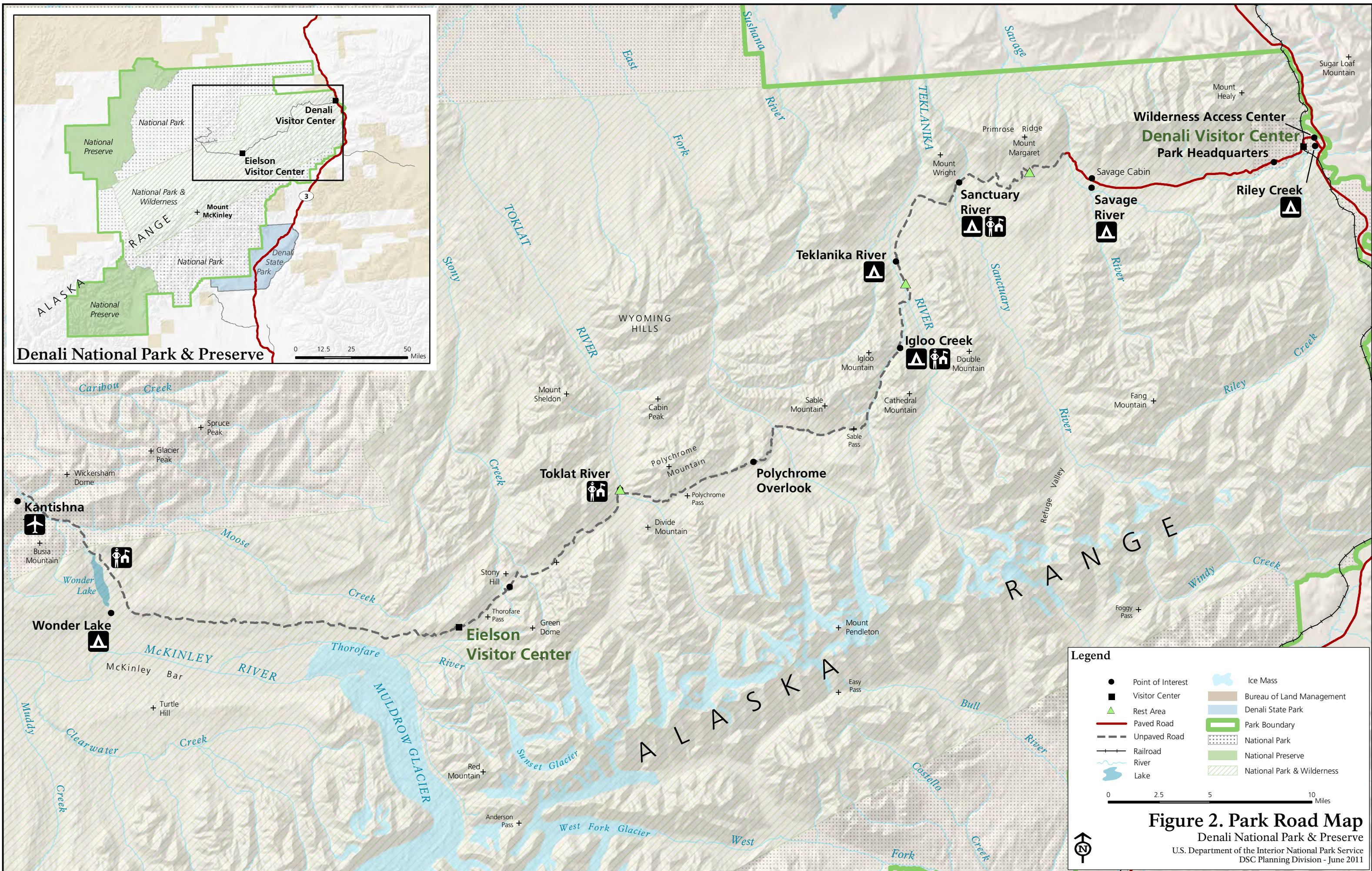
The present approach for managing vehicles on the Park Road is based on the park's 1986 general management plan, as amended, which established an allowable seasonal limit of 10,512 vehicles on the Park Road past Mile 15 from approximately Memorial Day to a week after Labor Day. While the overarching goal of the limit was to protect wildlife viewing opportunities and wildlife health and habitat, the limits were not connected to more refined desired conditions in a logical framework that could be measured and monitored over time.

Although the vehicle limit is clearly measureable, it is less clear that a numerical limit alone is enough to adequately protect park resources and provide for a high quality visitor experience. Other factors come into play as indicated by a multidisciplinary road study that began in 2006 to expand understanding of the impacts of traffic volume and traffic patterns on the park's physical, biological, and social environment (see the "Planning Background" section for information about this road study). These factors include visitor perceptions of crowding at wildlife stops and rest stops; interactions between buses and wildlife; and the patterns of wildlife movements along the Park Road corridor. In addition, there is a growing demand for the Park Road

experience; trends indicate that visitation to Alaska and the Denali area will continue to increase (see discussion in the "Planning Background" section of this chapter).

As a result, this plan is needed to set measurable indicators and standards that will ensure key park resources and values along the Park Road are adequately protected in accordance with desired conditions, especially in light of the potential for increased visitation. These resources and values include (1) wildlife populations, habitat, and the processes and components of the park's natural ecosystem, (2) wilderness character and values, and wilderness recreational opportunities, (3) the scenic and geologic values of Mount McKinley and the surrounding mountain landscape, (4) visitor enjoyment, and (5) the inspiration visitors derive from the park's natural features and opportunities to observe wildlife in its natural habitat. Additionally, an adaptive management approach, which employs more sophisticated science and modeling and monitoring techniques to effectively protect resources and provide high quality visitor experiences, is needed to allow park managers the flexibility to adjust operations in response to observed resource protection or visitor use issues.





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PLANNING GOALS AND OBJECTIVES

The goals and objectives further articulate what will be accomplished with the park's transportation system. The goals describe what will be achieved, and the objectives list specific outcomes for the goals.

Goal 1: Protect the exceptional condition of the park's resources and values through informed, proactive, and transparent management.

Objectives:

- Manage the transportation system to ensure protection of wildlife populations, wildlife habitat, and the processes and components of the park's natural ecosystem.
- Manage the transportation system to ensure protection of wilderness character, wilderness resource values, and wilderness recreational opportunities.
- Continue to protect and promote the historic character of the Park Road and related elements of the cultural landscape.
- Share monitoring findings with the public and inform them of management actions regarding the transportation system.

Goal 2: Provide high-quality and appropriate visitor opportunities on the bus.

Objectives:

- Ensure a transportation system that provides the park's interpretive themes and messages to all visitors as a means to encourage public understanding and support of park resources and values.
- Ensure a transportation system that provides a high-quality opportunity for viewing scenic landscapes and wildlife in a wilderness context.

- Provide a bus environment that enables visitors to engage with the park resources and values in a meaningful way.

Goal 3: Provide access to recreational and educational opportunities along the Park Road.

Objectives:

- Provide freedom of movement.
- Provide a system that is universally accessible and able to accommodate visitor needs and equipment.

Goal 4: Make the park transportation system understandable and user friendly.

Objectives:

- Clearly communicate information about the system through a variety of means.
- Enable visitors to easily choose the experience that meets their needs within the limits of the system.
- Ensure the transportation system enables visitors to spend time at an NPS visitor center.

Goal 5: Provide a transportation system that meets visitor access needs.

Objectives:

- Optimize seating capacity within the system design.
- Maximize system flexibility to meet future visitor demand, while sustaining desired resource conditions and visitor experiences.
- Provide stability and predictability in the system.

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- Develop a system that is affordable and offers opportunities for the full range of park visitors.

Goal 6: Provide access for subsistence use and inholders.

Objectives:

- Provide legally required access to Kantishna inholdings.
- Provide legally required access to subsistence users.

PLANNING BACKGROUND

The Denali Park Road was built in the 1920s and 1930s with bus service provided by a concessioner since the mid-1920s. Since it was established, a tour opportunity has been offered on the Park Road as part of this service. Although visitation was relatively low before 1972, visitation rose quickly after that time in direct response to the opening of the George Parks Highway which linked the park to Anchorage and Fairbanks. Park managers instituted a mandatory visitor transportation system at the time to minimize disturbances to wildlife and scenery anticipated by the upsurge in visitor numbers.

To protect wildlife and habitat, the wilderness character along the Park Road, and wildlife viewing opportunities, the 1972 transportation system allowed only those visitors with interior campground or other special use permits to drive their personal vehicles beyond the Savage River at Mile 15. Visitors without permits were required to turn around at the Savage River or take a bus. Visitors had the option of taking a narrated bus tour or a shuttle bus that allowed them to get on and off. Visitation continued to steadily climb to approximately 394,000 annual recreational visits by the early 1980s.

A regulation promulgated in 2000 clarified that the seasonal limit of 10,512 vehicles on the Park Road past Mile 15 (Savage River check station)—instituted by the 1986 general management plan—applies to the period described as “Saturday of Memorial Day weekend and continues through the second Thursday following Labor Day or September 15, whichever comes first” (36 CFR 13.932). For the regulated period, often termed the “allocation season,” there are three possible lengths based on the definition: 110 days, 111 days, and 116 days. Because of the way the definition is structured, most allocation seasons will have

111 days, with only occasional years having a 110- or 116-day season.

There is no defined vehicle capacity for the “shoulder seasons” except for a limit on the number of tours. The spring shoulder is the time between snow removal on the eastern portion of the Park Road and the beginning of the allocation season. The fall shoulder season begins the day after the conclusion of the allocation season and continues until snow conditions no longer allow travel to Teklanika Rest Area or Savage River.

This seasonal limit has served well for many years as a means to manage vehicle use and provide quality visitor opportunities. However, the consistent growth in tourism that Alaska has experienced over the last decade has directly corresponded to increasing visitation to Denali National Park and Preserve. The park has become one of the most visited subarctic national parks in the world. In 2007 over 450,000 visitors arrived at Denali, the highest annual visitation recorded at the park to date. Visitors primarily come during the summer season and focus their time at the park to day-long tours along the Park Road or use the road as a means of accessing backcountry camping/hiking destinations or inholdings. Most visitors interested in a tour can be accommodated, but there are days and times when the demand for tours has exceeded the supply available.

In addition to the seasonal vehicle limit, the 1986 general management plan established four major zones in the park: natural zone, historic zone, park development zone, and special use zone. The Park Road corridor was placed in the park development zone which provided for major development and intensive use. The general management plan was amended by the 1997 *Entrance Area and Road Corridor Development Concept Plan (EARCDP)* that further defined the Park

Road into the following subzones (see figure 3)¹:

- Motorized Sightseeing Subzone 2 (Park Road from George Parks Highway to park headquarters). The subzone provides access to developed and administrative areas, and permits some commercial vehicle use. Viewing wildlife and scenery primarily from a vehicle are among the principal activities in the subzone.
- Motorized Sightseeing Subzone 3 (headquarters to Savage River Bridge). Viewing wildlife and scenery primarily from a vehicle are the principal visitor use activities. Commercial vehicles are restricted from operating in the subzone.
- Wildlife Viewing Subzone 1 (Savage River Bridge to Teklanika River Bridge). The subzone includes part of the gravel section of the Park Road on which the primary purposes are viewing wildlife and scenery. Visitors travel on one of the bus systems and private vehicles are restricted. Other than the Park Road, the only facilities are rest areas spaced at approximately one hour travel intervals. Visitors can expect to encounter a greater level of traffic in this subzone compared to the wildlife viewing subzone 2.
- Wildlife Viewing Subzone 2 (Teklanika River Bridge to the former park boundary north of Wonder Lake). The subzone includes the gravel section of the Park Road on which greater restrictions (Rules of the Road) apply. Buses are given the right-of-way and the primary visitor use purposes are viewing scenic landscapes and wildlife. Visitors must use one of the bus systems and private vehicles are restricted. Facilities consist of the Park Road, one or two

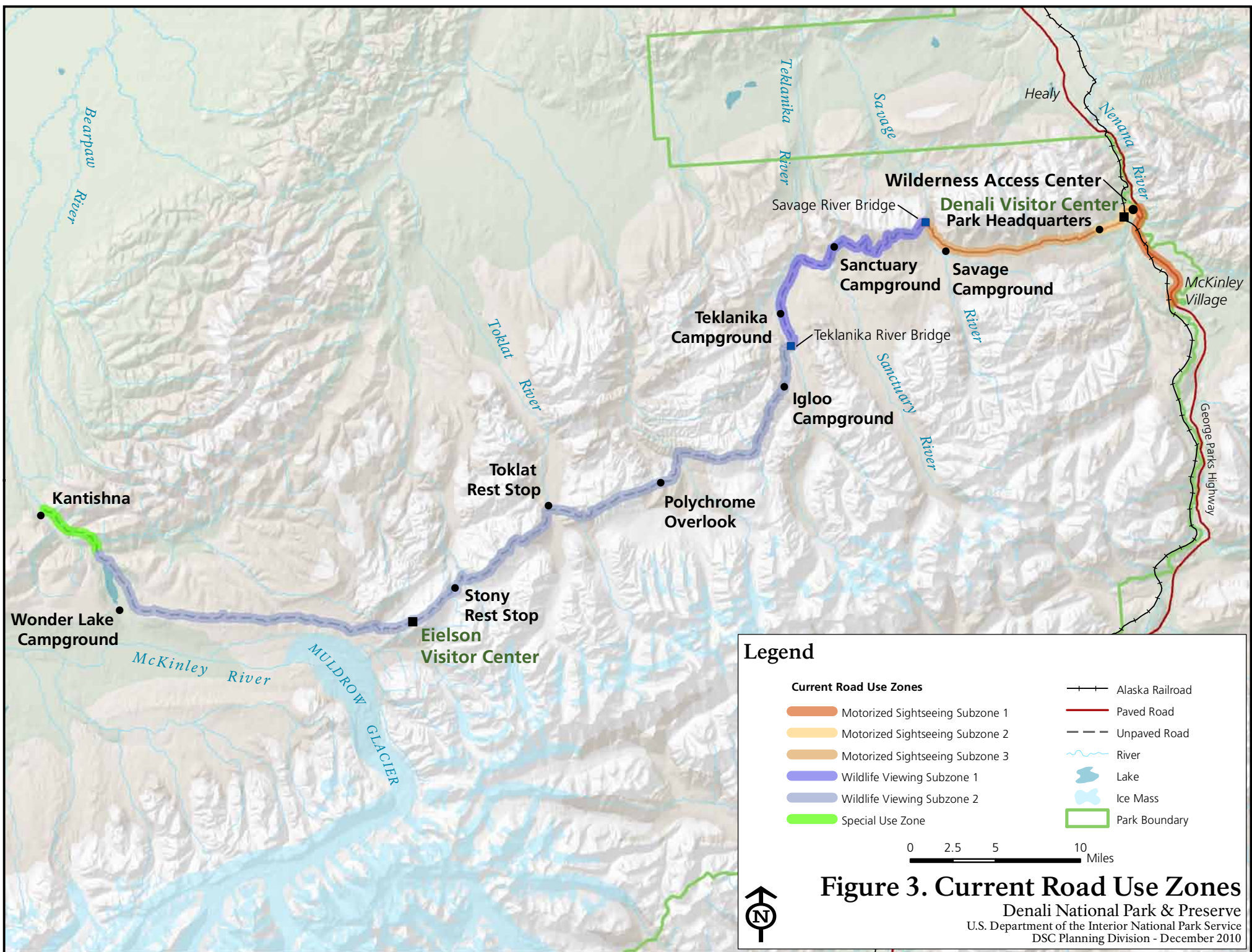
visitor contact stations, and generally one rest area for every hour of travel. Visitors can expect to encounter a lower level of traffic than in wildlife viewing subzone 1.

The *EARCD*CP retained the seasonal 10,512 vehicle limit, established daily limits for tour and transit operations, and increased the seasonal allocation to 550 buses while reducing the number of professional photographer permits. The plan also committed the park to move toward identifying user capacity of the road by setting indicators and standards for desired conditions. These efforts subsequently led to the park's 2006 road study to provide a better understanding of the impacts of traffic on park resources and visitor experience by further developing and refining the range of appropriate indicators for desired conditions. The road study was comprised of the following three primary components:

- Natural resource studies – The movements of grizzly bears (*Ursus arctos horribilis*) and Dall sheep (*Ovis dalli dalli*) were documented using global positioning system (GPS) collars. Location and movement information of collared animals was modeled using habitat and traffic data to determine possible relationships between vehicles on the Park Road and wildlife behavior.
- Social science studies – Researchers administered visitor surveys to identify and assess key elements of the visitor experience on the Park Road.
- Logistical studies – Researchers used GPS data collected from vehicles driving the Park Road in 2006, 2007, and 2008 to create a traffic model capable of simulating location and vehicle specific driving behaviors.

Information gathered from these studies has been combined to generate a model of Park Road traffic that will enable managers to

¹ Motorized Sightseeing Subzone 1 was applied to the portion of the George Parks Highway that passes through the park boundary, but not to the Park Road. Please see the *EARCD*CP for additional details on this subzone.



predict the effects of changes in traffic volume and timing on visitor experience and wildlife movements. This model was then used to assist in the identification and selection of best management practices for vehicle schedules and user capacity on the Park Road, and to help identify potential impacts associated with the alternatives.

PARK PURPOSE

Purpose statements convey the reason(s) for which a national park unit was set aside as part of the national park system. Grounded in an analysis of park legislation and legislative history, purpose statements also provide primary criteria against which the appropriateness of plan recommendations, operational decisions, and actions are tested—they provide the foundation for a park’s management and use.

In 1917, Congress established Mount McKinley National Park as a “game refuge” with the intent that it be “set apart as a public park for the benefit and enjoyment of the people.”(39 Stat. 938).

In 1980, Congress passed the Alaska National Interest Lands Conservation Act (ANILCA, Public Law 96-487) which enlarged and renamed the park Denali National Park and Preserve. Section 101 of ANILCA describes the broad purposes of the conservation system units established under the act, including the enlarged national parks and preserves such as Denali. These purposes include the following:

- Preserve lands and waters for the benefit, use, education, and inspiration of present and future generations.
- Preserve unrivaled scenic and geological values associated with natural landscapes.
- Maintain sound populations of, and habitat for, wildlife species.
- Preserve extensive, unaltered ecosystems in their natural state.

- Protect resources related to subsistence needs.
- Protect historic and archeological sites.
- Preserve wilderness resource values and related recreational opportunities such as hiking, canoeing, fishing, and sport hunting.
- Maintain opportunities for scientific research in undisturbed ecosystems.
- Provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so.

Section 202 of ANILCA stated that the new land additions of Denali National Park and Preserve are to be managed for the following specific purposes:

- To protect and interpret the entire mountain massif and the additional scenic mountain peaks and formations.
- 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.
- To provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities.

Under the authority of the Wilderness Act of 1964, Section 701 of ANILCA also included designation of the Denali Wilderness consisting of approximately 1,900,000 acres (now mapped at 2.1 million acres). About 99% of the former Mount McKinley National Park was included in the wilderness designation. Generally excluded from wilderness are those lands less than 150 feet from the centerline of the Park Road, plus wider areas at campgrounds, visitor centers and maintenance areas. In accordance with the Wilderness Act, wilderness lands are to be “administered for the use and enjoyment of the American people in such manner as will leave them

unimpaired for future use and enjoyment as wilderness. . .and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.”

PARK SIGNIFICANCE

Statements of park significance define what is most important about the park’s resources and values and are based on the purpose for which the park was created. These statements describe the distinguishing resources and characteristics that set a park unit apart in a regional, national, and sometimes international context. The 2006 *Denali National Park and Preserve Backcountry Management Plan* provides detailed park significance statements that are abbreviated as follows:

- Large Protected Area – The six million acres of the park and preserve enable a spectacular array of flora and fauna to live together in a healthy natural ecosystem and provide excellent opportunities to study subarctic ecosystems in settings largely undisturbed by humans.
- Mountains and Glaciers – The park contains a major portion of the Alaska Range, one of the great mountain uplifts in North America, including North America’s highest peak, Mount McKinley, and some of the largest glaciers in North America.
- Wildlife and Habitat – While populations fluctuate, nowhere else in America can such concentrations of large species of wildlife be observed in such an accessible natural setting. The park is also significant for its diverse avian habitat and rich and varied vegetation. Denali has more than 10,000 mapped lakes.
- Scenic Resources and Air Quality – Outstanding views of natural features, including mountain, glaciers, faults, and rivers dominate the park landscape. Denali National Park and Preserve is a designated Class I airshed under the Clean Air Act Amendments.

- Cultural Resources – There are over 250 known cultural resource sites within Denali’s boundaries, including both prehistoric and historic sites. Because cultural resource inventories have been limited to date, this number likely represents a small fraction of the park’s total sites.
- Mountaineering – Mount McKinley is considered one of the world’s premier mountaineering destinations, drawing climbers from many countries. Many other peaks in the park, including Mount Foraker, also offer outstanding expeditionary climbing opportunities.
- Wilderness Recreation – Denali offers superlative opportunities for primitive wilderness recreation. This huge park contains large areas with almost no trails and where evidence of human use is minimal to nonexistent. A large portion of Denali’s backcountry is readily accessible to visitors who can reach the park by highway or railroad from either Anchorage or Fairbanks.

FUNDAMENTAL RESOURCES AND VALUES

Denali National Park and Preserve’s fundamental resources and values are derived from the park’s purpose and further articulate those resources and values that Congress identified specifically for the park. They represent the systems, processes, experiences, scenery, sounds, and other features that are critical to achieving the park’s purposes and maintaining its significance. These fundamental resources and values are synthesized as follows:

1. Wildlife populations, wildlife habitat, and the processes and components of the park’s natural ecosystem
2. Wilderness character, wilderness resource values, and wilderness recreation opportunities
3. Scenic and geologic values of Mount McKinley and the surrounding mountain landscape

4. Visitor enjoyment and inspiration from observing wildlife in its natural habitat and other natural features

Other important resources and values exist at the park that are not fundamental or primary to the park's purpose and significance, but are nevertheless important for both park management and visitors. The park protects and preserves these resources under applicable laws and NPS policies and guidelines. These include the following:

1. historic, archeological, and ethnographic resources
2. paleontological resources
3. air quality
4. subsistence resources and opportunities
5. scientific research, education, and interpretation about natural ecosystems and geologic features and processes

ISSUES AND IMPACT TOPICS

Issue and impact topics reflect the problems, opportunities, and concerns regarding current and potential vehicle management actions and strategies included in this plan/environmental impact statement. The issues and concerns addressed in this vehicle management plan are derived from the comments and feedback provided by the public and park staff through the scoping process. This process included public meetings in the fall of 2008 that were part of the initial scoping process, as well as alternatives scoping, including public meetings, in the winter of 2009-2010. A summary of the comments received during scoping are included in chapter 5 of this plan.

Impact topics are a more refined set of concerns analyzed for each of the management alternatives. The impact topics were derived from the issues identified during scoping, and were used in chapter 4 to examine the extent to which a resource would be affected by the actions of a particular alternative. Some issues and impact topics were eliminated from further

consideration by the planning team. In some instances, they were dismissed because they related to resources that are not present in the park. In other instances, potential impacts were considered minimal, so those topics were also dismissed from further analysis.

Table 1 identifies those impact topics that have been considered for this plan/environmental impact statement, including identification of the issues associated with the impact topic, as well as the rationale for retaining or dismissing the topic.

Several other possible impact topics included in NPS management guidelines, Council on Environmental Quality (CEQ) guidelines, and other federal laws were considered while assessing the environmental impacts of proposed actions. Just like the impact topics listed in table 1, these additional topics were considered for inclusion in this *Vehicle Management Plan/Environmental Impact Statement*.

Table 1. Summary of Impact Topics Retained for Analysis

Impact Topic	Issues/Rationale for Retaining	Relevant Law, Regulation, or Policy
Visitor Use and Experience	<p>The Denali Park Road is the primary means by which visitors access a variety of park features, sites, and experiences. As a result, various characteristics of visitor use and experience would potentially be altered by changes in vehicle management along the road, including</p> <ul style="list-style-type: none"> • The ability to access wilderness recreation opportunities, and other park features, via the Park Road; • The diversity of opportunities once in the park; • The interpretive experience; • Safety and comfort; and • The opportunity for an affordable park experience. <p>Given visitor use and experience is an integral element of the management of the Park Road, any changes could have beneficial or adverse effects.</p>	<p>Enabling legislation; NPS <i>Management Policies 2006</i>; NEPA regulations at 40 CFR 1508.27 require that the intensity of potential impacts be evaluated in terms of potential adverse effects on public health and safety.</p>
Transportation System and Traffic (including vehicle mix, restrictions, traffic, parking, transit service, and tours)	<p>The vehicle management plan may affect the mix of tour and transit services provided by the transportation system, and their schedules. Also, the mix of system and non-system vehicle use on the roadway may be affected. Changes in traffic volume and vehicle type may be anticipated along portions of the road and the plan may affect parking, rest stop, and turnaround area configurations.</p>	
Wildlife and Wildlife Habitat	<p>Wildlife and wildlife habitat issues have been identified based on the following six topics:</p> <ul style="list-style-type: none"> • Dall sheep • grizzly bear • caribou • moose • gray wolf • other wildlife species and habitat <p>The first five species were selected because (1) the Park Road runs through their respective habitats, (2) they are all considered fundamental resources and values that support the park's purpose and significance statements, (3) each could be adversely affected by human and vehicle use of the Park Road in their own unique way, and (4) they are all prominent attractions for the park visitors who use the transportation system on the road to view wildlife. Since other wildlife species, including those that are of management concern, that use habitat along</p>	<p>NPS Organic Act; NPS <i>Management Policies 2006</i></p>

Impact Topic	Issues/Rationale for Retaining	Relevant Law, Regulation, or Policy
	the road corridor also play important roles in the park's ecological system, they are also analyzed.	
Wilderness	The park's wilderness boundary lies 150 feet from the centerline of the Park Road (on both sides), and typically 300 feet from the perimeter of any development along the Park Road. Given this close proximity, the park's wilderness character—its naturalness, undeveloped nature, opportunities for solitude, and opportunities for primitive and unconfined recreation—may be affected by the volume, timing, and types of vehicle use on the Park Road associated with the various plan alternatives. Some of the possible impacts to wilderness character from implementation of the alternatives include vehicle noise, concentrated pedestrian activity along boundary (e.g., near transportation nodes), social trails, and altered wilderness viewsheds (e.g., vehicles on road).	Wilderness Act; Director's Order 41; <i>NPS Management Policies 2006</i>
Park Management and Operations (including park and concession employees, staffing)	The vehicle management plan may bring about changes in bus numbers, scheduling, spacing, and pricing that could alter concession operations and staffing. Other alternative elements—such as changes to administrative use of the road, monitoring of indicators and standards, and changes to education/interpretation—would affect park operations, management and costs. Minimum standards for bus drivers (e.g., education/interpretation and safety training) would change requirements for concession employees.	NPS Organic Act; DOI Departmental Manual; <i>NPS Management Policies 2006</i> ; Director's Order 80
Socioeconomics	The social and economic conditions of the local gateway and regional communities, including residents and businesses, could be influenced by the actions taken to manage vehicle use along the Park Road. In addition, the cruise ship industry and the Alaska Railroad are dependent upon the park for portions of their businesses. As a result, the quality of life benefits as well as demographic and economic trends of the area could be affected by this plan.	National Environmental Policy Act

Table 2. Summary of Impact Topics Dismissed

Impact Topic	Issues/Rationale for Dismissing	Relevant Law, Regulation, or Policy
Sustainability (includes greenhouse gas emissions; natural and depletable resource requirements, energy requirements, and conservation Potential)	<p>Although the fossil fuel use associated with the existing transportation system contributes a notable amount to the park's carbon footprint, there would be minimal variation expected in the fossil fuel use among the alternatives. Additionally, there would be only a negligible to minor incremental increase in greenhouse gas emissions that would add to the park's overall carbon footprint.</p> <p>In addition, across all alternatives, the park would seek opportunities to reduce fossil fuel consumption via the use of alternative energy vehicles and other fuel saving policies. Given the very limited effect of the alternatives on air quality and carbon footprint, this impact topic has been dismissed from further analysis. Although this impact topic has been dismissed, the adverse effects of dust and vehicle emissions will be considered when analyzing the retained wilderness character and visitor use and experience impact topics due to their potential effects on pedestrians and bicyclists.</p>	
Invasive Species	<p>Vehicle use on the Park Road, especially use of construction equipment, has been the predominant means for many of the park's nonnative, invasive plants to enter the park. However, the threat of invasive plants is expected to decrease over time due to (1) the park's current management action of regularly washing buses, park vehicles, and construction equipment, (2) the likelihood of private vehicle use on the Park Road remaining constant or decreasing over time, and (3) implementing guidance in the NPS Alaska Region's plan / environmental assessment for managing invasives (NPS 2009). Thus, the vehicle management plan would have no more than minor effects on the spread of invasive plant species in the park. This topic was dismissed from detailed analysis.</p>	
Vegetation (including rare or unusual vegetation)	<p>Vegetation immediately along the Park Road is affected by dust generated by vehicles traveling on the road, and may be affected by the Calcium Chloride (CaCl₂) dust palliative that is used to control dust generated from Park Road vehicle use. However, park staff have already initiated a chloride monitoring program in soils and waters adjacent to the road that (1) measures the CaCl₂ effects on vegetation (if any), and (2) provides an early warning system that would alert staff to modify or cease CaCl₂ application levels to avoid vegetation impacts. At the projected levels of vehicle use under this plan, including under the no-action alternative, this monitoring would ensure no more than minor and localized effects on the structure and diversity of the park's vegetation communities. In addition, the park would continue to pursue new ways to address the dust issue (e.g., traffic volume, new applications).</p>	NPS <i>Management Policies 2006</i> Director's Order 77

Impact Topic	Issues/Rationale for Dismissing	Relevant Law, Regulation, or Policy
Threatened and Endangered Species	No federal or state listed threatened or endangered species reside in Denali National Park and Preserve and none are anticipated to be affected by the proposed vehicle management alternatives. Likewise, no federally designated critical habitat exists in the park. Although rare and unique plant species are found in the park, these plant species do not exist in vicinity of the Park Road corridor and would not be affected by any of the vehicle management alternatives. This topic was dismissed from detailed analysis.	Endangered Species Act; Migratory Bird Treaty Act; NPS <i>Management Policies 2006</i>
Soils and Geologic Resources	While localized effects could result from transportation node development that may be prompted by the vehicle management plan, this development would be located and designed in a way that avoids or mitigates adverse impacts to soils and geology. Assuming that the alternatives would not yield a large variation (increase or decrease) in motorized vehicle volumes on the Park Road, the associated dust, the necessary calcium chloride (CaCl ₂) dust palliative applications, and road maintenance work would also have no more than minor impacts to local soils and geologic resources under any of the alternatives. As a result, this impact topic was dismissed from further consideration.	NPS <i>Management Policies 2006</i>
Water Resources and Hydrologic Processes (including stream character, water quantity and quality, watershed processes, wetlands, floodplains)	Although the past road construction and road maintenance have had effects on water resources (e.g., where the road crosses drainages or wetlands), none of the proposed alternatives would alter the design, alignment, or maintenance standards of the road. As a result, there would be no effects on stream character, water quantity, wetlands, or floodplains. The CaCl ₂ dust palliative that is applied to control dust generation from Park Road vehicle use may migrate to adjacent water bodies. However, park staff have already initiated a CaCl ₂ monitoring program in soils and waters adjacent to the road. At the projected levels of vehicle use under this plan, including under the no-action alternative, this monitoring would ensure no more than minor and localized effects on water resources. As a result, this topic was dismissed from further consideration.	Clean Water Act; Executive Order 12088; Executive Order 11990; Executive Order 11988; NPS <i>Management Policies 2006</i> ; Director's Order 77-1; Director's Order 77-2
Air Quality	Since air quality monitoring at Denali began in 1980, the park typically has one of the best air quality conditions in the U.S., which upholds its designated Class I status (the most protected status) under the Clean Air Act. Although the emissions from internal combustion engine vehicles and the dust generated by traveling on the gravel road surface may have limited, localized adverse impacts on air quality, they would not cause national ambient air quality standards to be exceeded. Overall, the projected levels of managed vehicle access under this plan would have no more than minor adverse impacts to air quality under any alternative, and this topic has been dismissed from further consideration. However, the dust and localized exhaust generated by these vehicles may have some minor effects on visitor experience (e.g., bicyclists on the road).	Clean Air Act; Executive Order 13423; DOI Secretarial Order 3226, Amendment No.1; NPS <i>Management Policies 2006</i>

Impact Topic	Issues/Rationale for Dismissing	Relevant Law, Regulation, or Policy
Lightscape (Dark Night Sky Preservation)	All proposed alternatives for vehicle management along the Park Road would concentrate and assign the vast majority of vehicle use during daylight hours. Although the potential for managing some activities (e.g., contractor and NPS employee access) to minimize displacement of visitors could in turn change the amount of vehicle use during dark evening or night hours, indicators associated with the night driving would ultimately limit the amount of vehicles on the road during these times. As a result, impacts to lightscapes would be no more than minor, and this topic has been dismissed from further consideration.	NPS Organic Act; NPS <i>Management Policies 2006</i>
Soundscape (Natural Sound Preservation)	The existing acoustic environment of Denali National Park and Preserve consists of both natural ambient sounds and human-induced noises such as those associated with motorized vehicles on the Park Road (for visitors and park operations) and those associated with airplanes. These existing noises have intermittent and localized adverse effects on the acoustic environment of the park. However, assuming that the alternatives would not result in a large variation in motorized vehicle volumes or frequencies on the Park Road, the anticipated change in the soundscape and acoustic environment would be relatively minor. Although, this impact has been dismissed, the adverse effects on soundscapes will be considered when analyzing other retained impact topics, such as wildlife, wilderness character, and visitor use.	NPS Organic Act; NPS <i>Management Policies 2006</i> ; Director's Order 47
Cultural Resources (including historic buildings and structures; ethnographic resources; and cultural landscapes)	<p>Historic buildings and structures, ethnographic resources, and cultural landscapes were dismissed from detailed analysis for the reasons listed below. Should additional cultural resources be discovered or uncovered along the Park Road corridor in the future, park staff will take appropriate measures to document and preserve the resources, and pursue appropriate consultations with agencies, tribes, and other interested parties.</p> <p>Historic Buildings and Structures. The historic 92-mile Park Road, the historic roadside, and the backcountry log patrol cabins have a Determination of Eligibility for the National Register of Historic Places. The backcountry log patrol cabins largely retain their rustic character from their respective periods of significance. The Park Road's period of significance extends from initial construction (1922-1938) to the present. The road's historical integrity with regard to materials and workmanship associated with its original construction has been diminished in part because of resurfacing and the replacement of bridges and culverts. However, the road retains substantial integrity with regard to location, design, setting, feeling, and association. The route remains largely unchanged with only a few minor alignment modifications. The first 30 miles of the road reflect design and safety improvements carried out primarily in the 1960s under the NPS Mission 66 Program (i.e., paved from the park entrance to the Savage River, then widened but gravel-surfaced from the Savage River to the</p>	National Historic Preservation Act; NPS <i>Management Policies 2006</i> ; NPS-28, "Cultural Resources Management"; National Environmental Policy Act; Secretarial Order 13007;

Impact Topic	Issues/Rationale for Dismissing	Relevant Law, Regulation, or Policy
Cultural Resources (including historic buildings and structures; ethnographic resources; and cultural landscapes) (continued)	<p>Teklanika River). Subsequent curtailment of Mission 66 improvements is evident beyond Teklanika as the road progressively narrows and becomes more primitive as it leads towards the Eielson Visitor Center and eventually reaches Kantishna. The park maintains the road in a manner that preserve's the integrity of setting along the route and provides visitors with rustic travel experiences and opportunities to view the surrounding landscape from the road (Determination of Eligibility for the National Register of Historic Places – Denali Park Road, 2009).</p> <p>Although possible increases in road use and visitation associated with the vehicle management plan may necessitate additional monitoring and maintenance, there would be no construction that would alter the character-defining features of the road or the log patrol cabins along the route.</p> <p>Ethnographic Resources. Ethnographic resources are traditional sites, structures, objects, landscapes, natural resources, and other material features associated with cultural systems or ways of life. Ethnographic studies in the park have identified many hunting and fishing camp sites, village locations, and trails with cultural and traditional importance to those with tribal associations to the earliest inhabitants of the park. However, the vehicle management planning alternatives do not entail new construction or ground-disturbance, and are not anticipated to impede access to places of traditional religious, ceremonial, and other customary activities. Regardless, the park will consult with associated tribal members to assess and, as necessary, minimize any possible disturbance to resources or values important to the tribes that could result from project actions.</p> <p>Cultural Landscapes. A cultural landscape is an area where cultural values and traditions of human adaptation and natural resource use is demonstrated, often via patterns of settlement, land use, circulation, and the types of structures that are built. Some cultural landscapes have been, or are in the process of being, identified and documented along the Park Road corridor (park headquarters historic district and Kantishna area, respectively). Although a cultural landscape report for the historic Park Road has not been completed, it is anticipated that actions proposed by the vehicle management plan would negligibly affect the character-defining cultural landscape features likely to be associated with the road corridor (e.g., spatial organization, land use patterns, circulation systems, topography, vegetation, buildings and structures, small-scale features, and views and vistas). Other than anticipated plan actions that could possibly change the distribution and numbers of buses and vehicles using the Park Road, there would be no alteration of the road prism itself or construction that could introduce new elements into the viewshed of the cultural landscape.</p>	

Impact Topic	Issues/Rationale for Dismissing	Relevant Law, Regulation, or Policy
Subsistence	ANILCA permits local residents to engage in subsistence uses within the 1980 additions to Denali National Park and Preserve “to provide the opportunity for local, rural residents engaged in a subsistence way of life to continue to do so.” However, the majority of the road corridor planning area is located outside of park lands and waters that are used for subsistence activities (primarily in northwestern portions of the park near Lake Minchumina and southeast park additions near Cantwell). None of the actions proposed by the vehicle management plan would impede traditional access to park resources by subsistence users. In addition, the plan would be consistent with the park’s <i>Subsistence Management Plan</i> that was prepared in cooperation with the Denali Subsistence Resource Commission. As a result, this topic has been dismissed from further consideration. An 810(a) analysis is attached as appendix A.	ANILCA NPS Management Policies 2006

In addition to those topics described in table 2, additional topics were dismissed from further consideration due to their lack of relevance to the plan, the Park Road corridor, or the impacts of the alternatives:

- Museum Collections (there would be no impact to how museum collections are acquired, accessioned and cataloged, preserved, protected, or made available for access and use)
- Archeological Resources (there would be no ground-disturbing activities that would affect buried sites, and any changes in visitor use patterns would have negligible effects)
- Environmental Justice (anticipated impacts associated with vehicle management under the alternatives would not disproportionately affect minority or low-income populations)
- Prime and Unique Farmlands (there are no such farmlands in the state of Alaska)
- Marine or estuarine resources (there are no such resources in the park)
- Geohazards (none of the alternatives would affect or be affected by geohazards)
- Conformity with local land use plans and other federal, state, or local laws for the protection of the environment (the Park Road study area for this draft plan/EIS occurs entirely within the boundaries of Denali National Park and Preserve and there are no actions proposed that would conflict with local land use plans; none of the alternatives would cause violations of any other federal, state, or local laws for the protection of the environment)
- Urban Quality and Design of the Built Environment (there are no urban areas within or near the Park Road study area, and the actions proposed would not affect the design of the built environments along the road corridor, including the entrance area)
- Wild and Scenic Rivers (none exist within the project area)
- Unique ecosystems, Biosphere Reserves, World Heritage Sites (there are no World Heritage Sites in the park, and although it is designated as a Biosphere Reserve, the alternatives would not impact this designation)
- Indian Trust Resources (none exist within Denali National Park and Preserve)

LAWS, REGULATIONS, AND POLICIES

While this document explores different approaches to the management of vehicle use on Denali Park Road, many management directives are specified in laws and policies guiding the National Park Service overall and are not subject to alternative approaches. This section identifies some of those directives.

GENERAL DIRECTION FOR PUBLIC ENJOYMENT AND RESOURCE PROTECTION

The National Park Service Organic Act of 1916 (16 USC §§ 1-4, 39 Stat. 535)

The Organic Act establishes the National Park Service and directs the agency to

... promote and regulate the use of the Federal areas known as national parks, monuments, and reservations. . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is 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.

Importantly for all planning processes in the park system, the Organic Act provides a fundamental standard for management—that park resources should remain “unimpaired” for the enjoyment of future generations.

Redwood National Park Expansion Act of 1978 (16 USC §§ 1-1a, 92 Statute 166)

The Redwoods Act amends the Organic Act and clarifies the importance Congress placed on protecting park resources such that

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 by Congress.

National Environmental Policy Act of 1969 (42 USC 4321-4370d; Public Law 91-190)

The National Environmental Policy Act (NEPA) requires that federal agencies give proper consideration to applicable topics and issues of environmental concern (as well as economic, social and other factors) prior to undertaking any action that could significantly affect the human and natural environment. Agencies are required to assess the direct, indirect, and cumulative beneficial and adverse impacts likely to occur from implementation of alternative courses of action. The act also directs federal agencies to employ a systematic, interdisciplinary approach in planning, and to consider public input and comments in decision making.

National Historic Preservation Act of 1966 (16 USC 470 et seq.)

The National Historic Preservation Act (NHPA) provides the framework for review and protection of cultural resources by federal undertakings, and ensures that they are considered during project planning and execution. The implementing regulations (36 CFR Part 800) for Section 106 of the NHPA are administered by the Advisory Council on Historic Preservation. Cultural resources included in the National Register of Historic Places, or determined eligible for inclusion, are considered “historic properties” for the purposes of compliance with Section 106. Section 106 requires federal agencies to identify and assess the effects of their actions on historic properties and to afford the

Advisory Council an opportunity to comment. Agencies consult with appropriate state and local officials, Indian tribes, applicants for federal assistance, and members of the public when making final project decisions.

NPS Management Policies 2006, Section 1.4.

NPS Management Policies 2006 uses the terms “resources” and “values” to mean the full spectrum of attributes for which a park unit is established and managed, including the Organic Act’s fundamental purpose and any additional purposes as stated in a park unit’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 National Park Service 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 to enjoy them.

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

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

WILDERNESS MANAGEMENT

The Wilderness Act of 1964 (16 USC §§ 1131-1136, 78 Stat. 890)

The 1964 Wilderness Act established the National Wilderness Preservation System and defined wilderness as follows:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean...an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which

- *generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable;*
- *has outstanding opportunities for solitude or a primitive and unconfined type of recreation;*
- *has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and*
- *may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.*

Alaska National Interest Lands Conservation Act of 1980 (ANILCA, 16 USC §§ 3101-3233)

ANILCA provides guidance about wilderness management at Denali:

- ANILCA Section 101 lists “preserve wilderness resource values” as a fundamental purpose of the act.
- ANILCA Section 102(13), states that the term “wilderness” as used in ANILCA has the same definition as in the Wilderness Act.

- ANILCA Section 203(a) states that a fundamental purpose of the Denali park and preserve additions is to provide continued opportunities, including reasonable access, for wilderness recreational activities.
- ANILCA Section 1317 requires a wilderness suitability review and wilderness recommendations regarding the park additions and preserve lands added to Denali by the act.

In addition, ANILCA provides some exceptions to national park and wilderness management practice, including allowing appropriate use for subsistence purposes of other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulations (see ANILCA Section 811).

NPS Management Policies, Chapter 6. Section 6.3.1

This document establishes that eligible and proposed wilderness on NPS lands should be managed under wilderness policy:

For the purposes of applying these policies, the term “wilderness” will include the categories of eligible, study, proposed, recommended, and designated wilderness. Potential wilderness may be a subset of any of these five categories. The policies apply regardless of category except as otherwise provided herein. In addition to managing these areas for the preservation of the physical wilderness resources, planning for these areas must ensure that the wilderness character is likewise preserved. This policy will be applied to all planning documents affecting wilderness.

The National Park Service will take no-action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed. Until that time, management decisions will be made in expectation of eventual wilderness designation. This policy also

applies to potential wilderness, requiring it to be managed as wilderness to the extent that existing nonconforming conditions allow. The National Park Service will apply the principles of civic engagement and cooperative conservation as it determines the most appropriate means of removing the temporary, nonconforming conditions that preclude wilderness designation from potential wilderness. All management decisions affecting wilderness will further apply the concept of “minimum requirement” for the administration of the area regardless of wilderness category. The only exception is for areas that have been found eligible, but for which, after completion of a wilderness study, the National Park Service has not proposed wilderness designation. However, those lands will still be managed to preserve their eligibility for designation.

ACCESS TO INHOLDINGS

ANILCA Section 1110(b)

ANILCA Section 1110(b) provides that inholders within park units in Alaska shall be given “...such rights as may be necessary to assure adequate and feasible access for economic and other purposes to [the inholding]...subject to reasonable regulations issued by the Secretary to protect natural and other values of such lands.”

PARK ROAD MOTOR VEHICLE PERMITS

***Title 36 Code of Federal Regulations:
Parks, Forests, and Public Property,
Part 13-National Park System Units in
Alaska, Subpart L—Special
Regulations—Denali National Park and
Preserve Motor Vehicle Permits***

36 CFR §13.932 authorizes the park superintendent to issue no more than 10,512 motor vehicle permits each year for access to the restricted section of the road from the Saturday of Memorial Day weekend and through the second Thursday following Labor Day or September 15, whichever

comes first. Each permit allows one vehicle one entry onto the restricted portion of the Park road. This regulation would be revised

if alternative B or C described in this draft plan/EIS is selected.

RELATIONSHIP OF THIS PLAN TO OTHER GUIDANCE DOCUMENTS

RELATED PARK PLANS

In addition to this current vehicle management plan / environmental impact statement, the park has undertaken several other planning efforts that relate to the Denali entrance area and road corridor, traffic patterns and circulation, and visitor experience. The following summarizes these plans at Denali National Park and Preserve. Other projects and actions along the Park Road are also described in the cumulative impacts scenario presented in chapter 4 of this document.

1986 General Management Plan, As Amended

A general management plan was completed for the park in 1986, and was then amended three times by the following:

- Entrance Area and Road Corridor Development Concept Plan, 1997
- South Side Denali Development Concept Plan, 1997
- Backcountry Management Plan, 2006

The extensive amendments replaced large sections of the 1986 general management plan. Each of the amendments included a complete environmental impact statement and used the public involvement process prescribed by the National Environmental Policy Act, including extensive public scoping, public hearings, and public comment on a draft plan. In the case of the backcountry management plan, there was public review of two drafts.

The amended general management plan prioritizes implementation projects. Highest priority projects (Level 1) include those related to immediate health and safety concerns and protection of threatened and endangered resources. Also included in this category are major actions designed to enhance the visitor experience and resource

protection in the frontcountry and management actions that can be implemented without additional funding, such as regulatory changes. The park is currently implementing Level 1 projects, which could mitigate some of the impacts identified in the no-action alternative.

The amended general management plan also provides a concise history of park planning over the past 30 years. Plans relating to the road corridor and visitor use include the following:

- Environmental Assessment on the Park Road Rehabilitation Program (1982)
- Development Concept Plan/Environmental Assessment for the Park Road Corridor (1983)
- General Management Plan/Land Protection Plan/Wilderness Suitability Review (1986)
- Addendum to the 1983 Development Concept Plan/Environmental Assessment for the Park Road Corridor (1987)
- Environmental Assessment for the Repair of the Denali Park Road and Associated Visitor Use Areas from Park Entrance to Savage River Bridge (1988)
- Amendment to the 1983 Development Concept Plan/Environmental Assessment for the Park Road Corridor and 1987 Addendum for Riley Creek (1992)
- Road System Evaluation (1994)
- Environmental Assessment on the Proposed Construction of Visitor Transportation System Facilities (1994)
- Entrance Area and Road Corridor Development Concept

Plan/Environmental Impact Statement (1997)

- Environmental Assessment for Construction of New Visitor Facilities in the Entrance Area of Denali National Park (2001)
- Denali Education Plan

Denali National Park and Preserve Road Design Standards 2007 / The Denali National Park Road Maintenance, Repair and Operating Standards 2005

The design standards guide repairs of the Denali Park Road and work needed to achieve the desired service condition for the number, size, and design of vehicles the road is presently required to carry. The standards also provide quantitative guidance to the Federal Highways Administration in designing and engineering repair projects for the Park Road that do not change its unique character. This document identifies which maintenance and repair activities need subsequent management approval and additional National Environmental Policy Act compliance.

The purpose of these standards is to quantify the definition of “Road Character” and bring together in one document the crucial factors that affect the Park Road. The overall management goal is to preserve the unique character of the Denali Park Road and the visitor experience it provides.

A companion document, *The Denali National Park Road Maintenance, Repair and Operating Standards (March 2005)*, describes the routine preventative maintenance activities and the repair and operating procedures employed to achieve the desired physical condition of the Denali Park Road. The maintenance standards include target levels for routine maintenance and repair activities. The standards also direct and establish the quantitative limits that these activities cannot exceed.

Road conditions proposed in the vehicle management alternatives of this plan comply with these standards.

Denali National Park Backcountry Management Plan / Environmental Impact Statement 2006

Denali National Park and Preserve’s backcountry management plan updates and expands the 1976 backcountry management plan, and it amends the 1986 general management plan for the park. It addresses the major changes occurring in the backcountry, especially recreational uses that have increased significantly in the last 30 years. The plan addresses overnight camping, airplane landings, snowmobile use, hiking, climbing and mountaineering, nonmotorized winter activities, bicycle use, boating, sport hunting, trails, information facilities, shelters, campsites, and NPS administration and research. Plan goals are to continue providing for a range of visitor opportunities in the backcountry while protecting the internationally significant resources of the park and preserve. The intent is to manage growth so that in the long term, a greater number of users can experience the park with reduced resource impacts.

This plan addresses management of all park and preserve areas not included in the *Entrance Area and South Side Development Concept Plans*, including the designated wilderness in the former Mount McKinley National Park, the national park additions, the northwest and southwest national preserve areas, and the Park Road corridor west of park headquarters during the winter season.

The preferred alternative in this plan provides for expanded recreational opportunities in many areas of the park and preserve for activities that are particularly well suited to the unique character of Denali. When use levels grow to match the management vision for a particular unit, they would be capped. Patterns and types of use would be somewhat similar to current conditions, but increases in levels of use would be noticeable at several locations. The record of decision was signed in January 2006. All of the alternatives developed for

this vehicle management plan are consistent with the backcountry management plan.

Denali National Park and Preserve Resource Stewardship Strategy 2008 – 2027 (2008)

The *Resource Stewardship Strategy 2008 – 2027* provides strategic guidance for the research, resource management, and resource education programs of the National Park Service at Denali National Park and Preserve. The resource stewardship strategy is a program planning document that serves as a bridge between the qualitative statements of desired conditions established in the park's general management plan and the measurable goals and implementation actions determined through park strategic planning. The resource stewardship strategy is an analytical document that focuses on identifying and tracking indicators of desired conditions, recommending comprehensive strategies to achieve and maintain desired conditions over time, and assessing and updating these comprehensive strategies periodically based on new information and the results of completed activities. Several of the strategies and related projects pertain to the entrance and road corridor. Also, consistent with this strategy, the action alternatives developed for this plan include indicators and standards for managing vehicles along the Park Road.

Denali Park Road Alternatives for Vehicle Management (2009)

This report examines alternatives for operation of bus service on the Park Road, surveys the transit bus market for alternatives to the existing Denali transit and tour vehicles, and develops a forecast of visitation to the park to help understand future demand for the service. The alternatives presented in this report explore several dimensions of vehicle management

planning for Denali, including the following:

- types of bus service offered
- geographic extent of the service
- infrastructure requirements
- booking and reservation systems
- interpretive message delivery
- institutional and financial mechanisms
- financial implications
- park resource impacts

This report helped inform alternatives considered during the planning process, and also provided baseline information for the affected environment of this Environmental Impact Statement.

A Predictive Study of Use Impact on the Denali Park Road: A Study Plan to Support Analysis and Management of Carrying Capacity. U.S. National Park Service, 2005-2012. (2005)

This study is designed to help support analysis and management of carrying capacity on the Denali Park Road. Qualitative and quantitative surveys of park visitors are being conducted to help inform indicators and standards of quality for the park experience and to measure visitor attitudes toward alternative park management practices along the Park Road, which are described in chapter 2. The results also helped inform the affected environment for visitor use and experience.

NATIONAL PARK SERVICE PLANS

A Social Science Research Plan for the Alaska Region of the National Park Service 2006 – 2016

The report provides a blueprint for social science research in the Alaska Region of the National Park Service. It represents an ambitious 10-year plan to prioritize the region's social science needs by 2016. The plan was prepared by the NPS Social Science Program and Texas A&M University in cooperation with the Alaska Region and the

Protected Area Social Research Unit at the University of Washington. Its purpose is to

- identify the needs for social science research in the NPS Alaska Region through 2016;
- propose a specific agenda of research projects and programs for the Alaska Region; and
- propose a strategy and budget to conduct the research

Because of the number of parks in the NPS Alaska Region, it is impractical to detail the specific research needs of each unit. Instead, the plan focuses on overarching themes that provide umbrellas for park-specific research and for social science investigations at the regional, state, and national scales. These themes include the following:

- visitors and non-visitors
- subsistence and traditional lifeways
- civic engagement
- human resources
- Alaska Region futures project

The strategy also contains a review of existing social science literature. The plan's overarching research themes, and studies conducted as a result, could provide guidance in identifying the affected environment and environmental consequences for this plan.

NPS Alaska Region Climate Change Strategy 2008-2016 Draft for Review (Version 14. 5/7/2009)

The NPS Alaska Region Climate Change Strategy provides information about current and expected impacts of climate change in the Alaska Region and recommendations for addressing those effects. It outlines a vision for the NPS Alaska Region Climate Change Program (2009 – 2016), explains why climate change matters for managing national parks in Alaska, and describes how it affects NPS operations and resources. The effects of climate change on resources in the park and the visitor experience are considered in the

affected environment of this plan / environmental impact statement.

The Alaska Natural Resource Program: A Strategy for the Future 2010 / The Alaska Natural Resource Program: Actions to Implement the Strategy (Plan) 2010

This strategy defines ten focus areas and their goals. Specific actions or steps to achieving the goals are detailed in a companion document, *The Alaska Natural Resource Program – Actions to Implement the Strategy*. These will be measurable and tangible management actions, both park specific and regionwide, that are required to achieve the goals. The implementation plan will be a timely document, and revised as needed, possibly as often as annually, but otherwise every five years. The intention of an action item list is that it will be integrated into parks and central office annual work plans. It is anticipated that the implementation plan will be drafted shortly after the Strategy is finalized. The 10 focus areas and their goals include

- Condition of Park Natural Resources - fully develop and implement an inventory and monitoring program for Alaska parks.
- Backcountry and Wilderness Areas - coordinate regionally to create an effective program and comprehensive management plans.
- Ocean & Coastal Resources - develop knowledge sufficient to protect resources and processes through cooperative management strategies.
- Climate Change Response – develop a foundation of understanding to determine best alternatives for response.
- Collaborative Conservation - participate in ecosystem management opportunities at local, regional, national, and global levels.
- Visitor Use - develop methods to establish visitation goals and levels of use that balance visitor use with resource protection.

CHAPTER 1: BACKGROUND

- Harvest of Natural Resources - provide opportunities for traditional and customary uses while maintaining natural and healthy populations.
- Living Laboratories - seek research opportunities and broadly share scientific results with visitors and educational institutions.
- Information Management - develop information management strategy to make new and existing data readily accessible.
- Fostering Professionalism - develop and support a professional workforce qualified in resource management and protection.
- All alternatives developed in this document are consistent with this strategy and its companion implementation plan.

Chapter 2

The Alternatives



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INTRODUCTION

The alternatives chapter describes the various actions that could be implemented for future management of vehicles along the Park Road at Denali National Park, including the no-action alternative. Regulations implementing NEPA (40 CFR 1502.14) require consideration of the no-action alternative, which in this document is the continuation of current vehicle management actions, as well as a range of reasonable alternatives. In addition, this chapter discusses the alternatives development process; the elements common to all action alternatives; user capacity and adaptive management, including indicators, standards, and monitoring; mitigation measures; the environmentally preferred alternative; alternatives that were considered but dismissed; and the consistency of the alternatives with the purposes of NEPA.

These alternatives and their associated costs are described in this chapter and summarized in table 3. Please note that all costs are reported in current dollars and do not account for inflation over the life of the plan. In addition, costs are focused on those applicable to the National Park Service (NPS) for implementing an alternative, not the cost of concessioner operations.

At this time, the NPS preferred alternative has not been identified to allow for refinement of the existing alternatives based on public input prior to making the selection. Once identified, the approved alternative will become the vehicle management plan for the next 15 to 20 years.

DEVELOPMENT OF THE ALTERNATIVES

INTRODUCTION

The development of alternatives began with a public newsletter distributed in September 2008 and subsequent public open houses which asked people for their ideas related to alternative approaches for accomplishing the general project goals identified in the “Notice of Intent” to prepare an environmental impact statement. Among other things, people were asked about how they use the park, what concerns they might have about conditions or activities in the park (related to the planning project), and for suggestions for improvement. Please see chapter 5 for more details regarding this initial scoping process.

The public response was analyzed later that fall, and was considered during refinement of the park’s more detailed goals and objectives for the transportation system and related visitor experience (see chapter 1 for more information on desired conditions, goals, and objectives). In addition to public feedback, the National Park Service considered why Denali National Park and Preserve was established by Congress (including examination of the park’s purpose, significance, and fundamental resources and values), as well as guidance from other park plans and documents (e.g., *Road Design Standards*), in developing the goals and objectives.

In addition to public scoping, the park used information from recent visitor surveys and user comment cards to identify elements of the transportation system that visitors are satisfied with and those elements that either need improvement or are not currently offered.

The next step in the process involved further articulating the goals and objectives of the plan by identifying indicators that would be used in adaptively managing user capacity.

User capacity is an expression of an area’s ability to provide for appropriate visitor use while sustaining desired resource conditions and visitor experience. Ultimately, these indicators would be monitored as long-term measures of success for managing user capacity and would serve as “triggers” for implementing adaptive management (see the “User Capacity and Adaptive Management” section of this chapter for more information about user capacity and indicators).

Park staff then began formulating strategies for how to manage the transportation system to meet the goals and objectives. Given the mission of the National Park Service to provide both for long-term preservation and for visitor use that can be accommodated while protecting park resources, strategies were considered that (1) maintain or enhance performance of the park’s transportation system to better protect resources and meet visitor needs, and (2) are feasible to implement. The planning team subsequently packaged the various strategies in different ways to develop preliminary alternative concepts.

These preliminary alternative concepts, along with the preliminary goals, objectives, and approach to managing user capacity and adaptive management, were shared with the public in early 2010. This effort included a planning workbook that was mailed to interested parties and the presentation of another round of public meetings. People were asked to provide their feedback, which was then analyzed and considered as the planning team refined the alternatives. During this time, the planning team also developed the standards for each of the indicators noted above (see the “User Capacity and Adaptive Management” section of this chapter for more information about indicators and standards).

Together, these alternative concepts, approaches, and standards and indicators make up the management alternatives, also referred to as the “action alternatives,” described in the remainder of this chapter. Also included here is a description of current management conditions, representing direction and trends based on the 1986 general management plan and subsequent amendments. The description of the current conditions serves as a basis of comparison with the two action alternatives and is referred to as the “no-action alternative.”

DEFINITIONS

During the alternatives development process, the National Park Service identified three types of bus service that could be offered to visitors to tour the Park Road or to access points of interest and departure

along the route: transit, economy tour, and premium tour. To help communicate the differences between the types of bus service, the park staff developed the following definitions:

- **Transit:** A bus service with the primary purpose of providing access into the park for wilderness recreation, including photography, hiking, visiting overlooks, and camping. The transit system is intended to be for visitors who are seeking to get off the bus.
- **Economy Tour:** A bus service that provides a modest tour experience.
- **Premium Tour:** A bus service that provides a high quality, value-added tour experience that includes an interpretive program providing either a general overview of the park or a focus on a specific topic.

ACTIONS COMMON TO ALL ALTERNATIVES

Some activities related to vehicle management in Denali National Park and Preserve are common to all alternatives, including the no-action alternative (alternative A) and the two action alternatives (alternatives B and C). These activities include mitigation measures and best management practices which would be applied to avoid or minimize potential impacts from implementation of the alternatives.

- The 2005 Denali National Park Road Maintenance, Repair and Operating Standards and 2007 Denali National Park and Preserve Road Design Standards (please see chapter 1 for additional details regarding these standards) would continue to be applied.
- Because there would be no capital improvements associated with any of the alternatives, there would be no cost associated with facility development or operations.
- The National Park Service would seek opportunities to reduce fossil fuel consumption via the use of alternative energy vehicles and other fuel saving policies. Such measures would be addressed in the concession prospectus that will be issued.
- To reduce the threat of invasive plants, the park's current requirement to regularly wash buses and park vehicles would continue.
- The current dust control program, which uses application of calcium chloride (CaCl_2), would continue to minimize dust emissions unless its use is determined to be harmful.
- The Calcium Chloride (CaCl_2) dust palliative monitoring program would continue to ensure any effects from CaCl_2 application are identified early to avoid impacts to soils, water resources, and vegetation.
- The park would continue to pursue new ways to address dust issues associated with vehicle traffic along the unpaved section of the road (e.g., use of water trucks, controlling traffic volume, searching out new applications).
- To ensure access for wilderness recreational opportunities, transit service would have priority when allocating vehicle use within the transportation system.
- All visitors, whether they are on a transit or tour bus, would have the opportunity to get off the bus and return east on the transit system.

ALTERNATIVE A: NO ACTION

GENERAL CONCEPT

Alternative A represents the existing condition. Currently, vehicle use on the restricted section of the Park Road is managed to maintain a 10,512 seasonal limit that was set in the 1986 general management plan and then formalized in regulations in 2000 (36 CFR 13.932). The regulated season begins on the Saturday of Memorial Day weekend and continues through the second Thursday following Labor Day, or September 15, whichever comes first. Allocation for segments of the transportation system and other vehicle use were modified in the 1997 *Entrance Area and Road Corridor Development Concept Plan* and the Park's Compendium.

A check station where staff count visitors and vehicles was established on the road at the Savage River in 1970; it was moved near the Savage Campground a few years later and then moved back to the Savage River in 1990.

Resource monitoring and visitor surveys are conducted to address areas of concern but are not part of a formal adaptive management approach to maintain or improve resource conditions and visitor experience along the Park Road.

Figure 4 provides a visual depiction of transit and tour operations under this alternative.

MANAGEMENT ZONING

Management zones along the Park Road would remain as described in the 1997 *Entrance Area and Road Corridor Development Concept Plan* (see chapter 1). The current management zoning would continue, and could allow for an increase from the current condition in vehicle use west of Eielson to Wonder Lake.

DESCRIPTION OF THE TRANSPORTATION SYSTEM

Transit

Under this alternative, transit services would continue to originate at the Wilderness Access Center, and would continue to provide access to destinations along the length of the Park Road. Visitors would continue to be allowed to get off and re-board the bus at any point and ticket prices are prorated by bus destination. Some open seats, up to 35% of capacity, would continue to be retained to allow for spontaneous trip planning by walk-in visitors, and to pick-up eastbound travelers.

Visitors would continue to obtain information by asking drivers questions (i.e., on-demand narration) or when a driver decides to provide information and commentary (i.e., driver-determined narration). Currently, the transit system is used by a high percentage of riders who choose to remain on the bus and not as a means of access for wilderness recreation. This reduces the number of seats available to pick up hikers along the Park Road.

Transit buses run on a regular schedule and the frequency of departures from the Wilderness Access Center would continue to be scheduled to meet demand.

Some transit buses are dedicated as "camper buses" which have less seating, but more room for recreational equipment (e.g., backpacks, camping gear, bikes, etc.).

Under this alternative, transit users would continue to register for scheduled off-bus activities such as ranger-led Discovery Hikes.

Self-guided Economy Tour

There would continue to be no self-guided economy tour under this alternative.

Guided Premium Tours

Guided premium tours would continue to be offered to specific destinations along the Park Road. The Toklat Rest Area at Mile 53 receives the highest tour volume as the furthest rest area for the Tundra Wilderness Tour. When weather conditions are favorable, this tour would continue to Stony Overlook. Primrose at Mile 17 receives a lower tour volume for the Denali Natural History Tour. Kantishna at Mile 92 receives one Kantishna Experience a day.

In addition to a seasonal vehicle limit, daily limits would continue to be used to regulate the number of vehicles providing guided tours.

The Tundra Wilderness Tour is a full day park experience. Bus drivers would continue to provide a narrated general park tour that is supplemented with enhanced viewing through media equipment. This tour would continue to pick up patrons at local hotels and includes a snack for attendees. Approximately 80% of these tours continue to Stony Overlook for mountain and wildlife views, based on driver judgment and weather, but they do not include a visit to a visitor center.

The Kantishna Experience involves an interpretive program delivered by a driver and a ranger; it would continue to include two off-bus activities, as well as a stop at Eielson Visitor Center and a lunch.

The Denali Natural History Tour includes two off-bus interpretive programs and a snack. This tour would continue to travel the Park Road as far as Primrose at Mile 17 before returning to the entrance area. Tour buses and other vehicles providing or supporting this tour are not counted against the seasonal vehicle limit.

Tours offer a pick-up service at local hotels. They do not pick up eastbound hikers.

Bus Size

There would be no changes to the size of the buses travelling the Park Road under alternative A.

OTHER VEHICLE USE

National Park Service

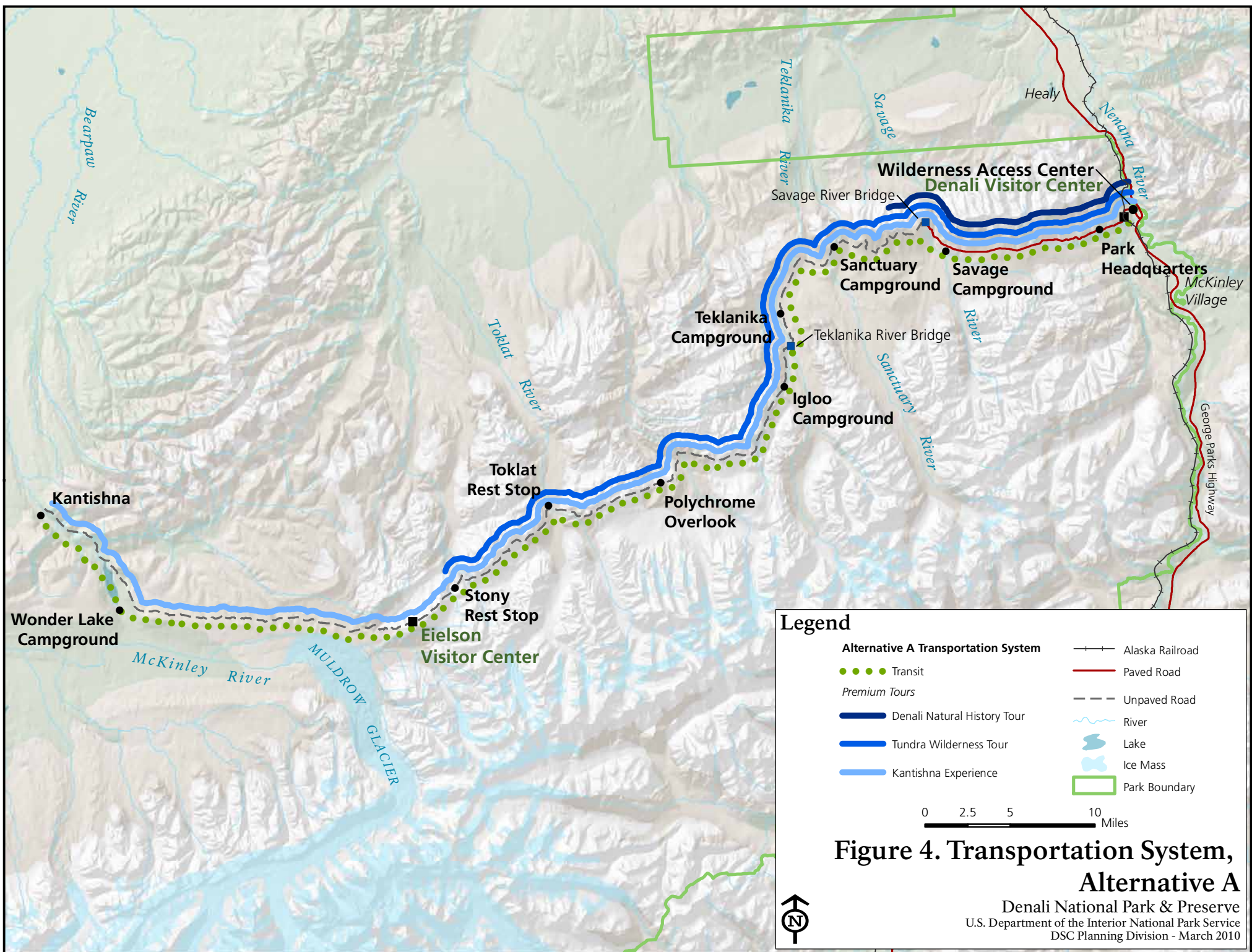
Of the 10,512 vehicles allowed on the Park Road per season, 1,754 permits are allocated for daily NPS operations which includes travel by emergency vehicles, road maintenance equipment, utility trucks, administrative travel, and employee access to west end duty stations. This limit has not changed since 1986 and would continue under this alternative.

Professional Photography and Commercial Filming

The professional photography program has a maximum of five road permits given out per day. These permits are distributed through a lottery system that has application criteria. Currently there are no limits to where professional photographers can be on the road; at any one time it is possible for one or more to be at roadside wildlife stops for longer time periods than other vehicle types.

The commercial filming program is managed through special use permits which are distributed at the discretion of park management.

Under this alternative, the professional photography and commercial filming programs would continue as described above.



Commercial Use for Kantishna Inholders

Kantishna inholder permits for vehicle use of the Park Road are based on the general management plan and other management documents. Four lodges in Kantishna offer overnight accommodations. Overnight guests are transported to the inholding by inholder-operated vehicles along the Park Road or via aircraft to the Kantishna airstrip. Two lodges also operate 12-hour-long commercial day tours to Kantishna and back to the park entrance. Other permitted vehicle use is by lodge employees, lodge support vehicles, and non-lodge inholders. Specific allocations for inholder vehicle use are set annually in the *Superintendent's Compendium*.

Teklanika River Campground

Visitors driving their private vehicles to Teklanika River Campground would be required to pay for a three night minimum stay. Park Road travel with a valid Teklanika River Campground permit would continue to be limited to one round trip to the campground. Further park travel would be through the transportation system.

Additional Vehicle Use

Researchers who need their vehicles for access and meet management criteria may be permitted to drive their vehicles on the restricted section of the Park Road.

Contractor traffic needed for road repair or construction projects would continue to be permitted on the Park Road and is not counted against the 10,512 limit since the number of these vehicles fluctuates substantially from year to year and could potentially limit public access in some years. For example, over the last ten years, contractor use has fluctuated from a low of approximately 150 vehicles to a high of 2,200 vehicles during the visitor season.

A small number of subsistence hunters would continue to use their private vehicles on the Park Road to access hunting in the Kantishna area.

COSTS

Operating costs (responsibility of the concessioner) and National Park Service costs are summarized in "Table 3. Summary of Alternative Elements." Operating costs were estimated through a financial feasibility analysis, which is on file at the park. A detailed breakdown of NPS costs is provided in appendix B. All costs are presented in 2011 dollars and are not adjusted for inflation. Although some expenses would not be incurred annually, and some expenses could change year to year, average annual NPS costs for vehicle management activities were estimated for comparison purposes only by dividing the total cost by the life of the plan—assumed to be 20 years for the purposes of these calculations.

ACTIONS COMMON TO ALL ACTION ALTERNATIVES

In the action alternatives, the transportation system would be managed to maintain desired conditions through adaptive management based on indicators and standards. This would provide park managers the flexibility and operational structure to best protect resources and manage visitor interests and demand. Details of this approach are provided in the “User Capacity and Adaptive Management” section of this chapter as well as in appendix C.

The maximum annual and daily vehicle capacity for the Park Road will be published each year as part of the *Superintendent’s Compendium*, subject to public notice and comment. This will allow the superintendent to set the next year’s capacity based on monitoring, research, and lessons learned in the prior years’ implementation. The National Park Service would initiate the necessary steps to promulgate a modification of CFR 13.932 - 13.934 that would give the superintendent discretion to set the maximum capacity of the road to maintain the vehicle management system indicators and standards.

For the restricted section of the Park Road (Savage River to Wonder Lake), the following indicators would be monitored annually:

- sheep gap spacing
- night time traffic levels
- large vehicles
- vehicles at a wildlife stop
- vehicles in a viewscape
- wait time for hikers
- vehicles at rest areas and Eielson Visitor Center

Additionally, comprehensive monitoring and data collection would take place every

1-5 years for the following to detect any impacts attributable to changes made to the transportation system:

- natural resource condition
- visitor satisfaction

All vehicles traveling on the restricted section of the Park Road would be required to follow a set pattern for vehicle movement (e.g. number of vehicles per hour per road section) to meet standards for achieving desired conditions.

Within the transportation system, destinations for tour and transit service may change as long as resource protection and visitor experience standards are met. When allocating vehicle use within the transportation system, the transit service would have priority.

In addition, as changes are made to the transportation system, the objective of continuing a system that is “affordable and offers opportunities for the full range of park visitors” is also a priority (see goal #5 in the “Planning Goals and Objectives” section in chapter 1). To support this objective, visitors’ perceived value of the transportation system will be assessed over time to guide decision making and ensure affordability of the system.

Specialized tours, such as photography, geology, birding, and family friendly tours, would be addressed in the operating plan of the concession contract, through regular park operations, and with park partners at the Murie Science and Learning Center.

Opportunities for off-bus guided tour activities would be primarily restricted to the developed areas along the Park Road or comply with the 2006 *Backcountry Management Plan*. Flexibility and freedom to move throughout the park would be

addressed through changes in the transit system and monitoring the indicator for hiker wait time.

Key park themes and messages would be delivered to facilitate visitor understanding and appreciation for the park's natural and cultural resources. This would require all drivers and naturalists to meet minimum standards for interpretation, with Premium Tour bus drivers meeting the highest standard for interpretation. Based on public input, the action alternatives all include three types of experiences: narrated, non-narrated, and drop-off.

The range of transportation system options available to visitors would be clearly communicated through a variety of means (electronically, printed materials, personal communication) by the National Park Service and its partners. Ultimately, the options used to provide information about the activities and services offered in the park, so that visitors can make informed decisions about their park experience, would be addressed through the concession contract and ongoing park operations.

To improve visitor experience, efforts would be made to offer better viewing opportunities. The National Park Service would address the potential for using quieter, more comfortable buses through the concessions prospectus that will be issued.

All tours would have at least one opportunity for interaction with an NPS interpretive facility or NPS staff member.

Educational programs provided directly by the National Park Service and Murie Science and Learning Center would have preference in available system capacity over commercial tours.

ANILCA Title XI, Section 1110(b) provides that inholders shall be afforded adequate and feasible access to their property subject to reasonable regulations that may include timing of road use, vehicle behavior, and use of park facilities. Permits to travel on the restricted section of the Park Road would continue to be provided to inholders to transport overnight guests and travel necessary for operation of the inholding. Park staff will work with inholders to address access to their inholding while striving to meet the goals of this plan.

Conducting commercial activity in the park outside the boundary of the inholding is not provided by Section 1110(b). Visitor services, including commercial vehicle day tours on the Park Road, would be authorized if consistent with planning documents.

All bus drivers, including inholder lodge drivers, would have the same level of safety training in order to drive on the Park Road.

ALTERNATIVE B: OPTIMIZING ACCESS

GENERAL CONCEPT

This alternative promotes maximizing seating on all transit and tour vehicles to offer the largest number of visitors the opportunity to travel the Park Road. Visitors would have access to a highly structured transportation system that offers predictability, efficiency, and greater opportunity to have a park experience of choice, while meeting set standards for natural resource protection and visitor experience.

To fully optimize the transportation system, a majority of seats on both transit and tour buses would be filled by pre-booking visitors (independent and organized groups). This would allow managers to predict daily vehicle needs and maximize the flexibility of the system to accommodate visitor demand.

Figure 5 provides a visual depiction of the nature of transit and tour operations under alternative B.

MANAGEMENT ZONING

Management zones along the Park Road would remain as described in the 1997 *Entrance Area and Road Corridor Development Concept Plan* (see chapter 1). The current management zoning could allow for an increase from the current condition in vehicle use west of Eielson to Wonder Lake.

DESCRIPTION OF THE TRANSPORTATION SYSTEM

Transit / Self-Guided Economy Tour Combination

This alternative would combine transit and self-guided economy tour services on the same bus to more efficiently use available seating. The major purpose in combining transit with a self-guided economy tour is to

provide the greatest number of visitors an affordable option for accessing the park. Combining these two services on one bus could result in buses operating at or near capacity. Increasing the average number of visitors per bus could also result in an economy of scale that may result in lower operating and ticket costs. The majority of seats would be available for pre-booking by all visitors, although some seats would be retained to allow for spontaneous trip planning for walk-in visitors, and to pick-up eastbound travelers.

This combined service would be operated like a municipal bus system (e.g. runs on regular schedule) and marketed principally to individuals who want to design their own visit and who do not need or want personal, on-bus interpretation. With an emphasis on providing park access, drivers would give safety messages, answer questions in a knowledgeable manner upon request, and provide a minimal level of orientation to facilitate wildlife viewing, though drivers would meet minimum standards for interpretation. Transit services would start at the Wilderness Access Center and provide access to the entire length of the Park Road. Ticket prices would be prorated by distance to destinations.

There would not be dedicated camper buses under this alternative. Instead, strategies would be explored for carrying recreational equipment (e.g., backpacks, camping gear, bikes, etc.) on the exterior of the buses.

Self-guided economy tours would use the transit bus system and visitors would start their tour at the Denali Visitor Center with a park orientation. Tour passengers would have the opportunity to retain a seat on the same bus throughout. The National Park Service would also explore tools (e.g., reservation placards) to allow economy tour

passengers the opportunity for more desirable seating.

Interpretive materials (guide books, lists of off-bus activities, activity packs for youth) would be included in the tour. Additional self-guiding items may also be included that would be used through a variety of tools (iphones, ipods, audio devices). Visitors could also register for scheduled off-bus activities such as Discovery Hikes. Food and beverages would not be included.

The self-guided economy tour ticket price could be higher than a transit ticket to reflect a park orientation and inclusion of interpretive items.

This alternative may require regularly reallocating buses between transit and premium tour services. It may also require reallocating use between the transportation system vehicles and other vehicles of the Park Road.

Guided Premium Tours

The major purpose of premium tours in this alternative is to provide visitors with an experience that offers guided interpretation, education, and visitor opportunities to understand and appreciate the park's natural and cultural resources. Premium tours could include off-bus activities with professional interpretive programs, guided talks at key locations, and the use of media and technology. Premium tours would be offered along the length of the Park Road, with a higher volume of these tours occurring between Savage River and Teklanika. Food and beverages would also be included.

Premium tour seats would be available for 100% pre-booking for all visitors. This predictability in visitor demand would allow for optimization of bus scheduling and use.

Returning eastbound, and if seats are available, hikers could be picked up on tour buses for transport to the entrance area.

- Premium Short Tour: Up to half a day in duration, these tours would be

offered to designated locations throughout Wildlife Viewing Subzone 1 (Savage River to Teklanika). Topics and activities for the short tour would be standardized (i.e., wildlife, park history, wilderness) to increase operating efficiencies in training and marketing. Premium short tours would incorporate a visit to the Denali Visitor Center and would originate from the Wilderness Access Center or with a pick-up at a local hotel.

- Premium Long Tour: These tours would be offered to destinations the length of the Park Road, but predominately operate within Wildlife Viewing Subzone 2 (Teklanika to Wonder Lake). Long tours would be developed for visitors who want a guided experience and have a full day to enjoy the park. A variety of tour topics and activities would be offered and tour destinations would be driven by visitor demand. Visitors could expect that long tours would provide more opportunity than the short tour to view wildlife and scenery due to time and distance traveled. Premium Long tours would start at the Wilderness Access Center or with a pick up at a local hotel. Tour passengers would have an opportunity to visit the Denali Visitor Center, the Toklat Rest Stop, or Eielson Visitor Center as part of their guided tour package.

Bus Size

To fully optimize the transportation system, the National Park Service may conduct a study to explore the effects of buses larger than the current design for use in Wildlife Viewing Subzone 1 (Savage River to Teklanika). A structural upgrade to the road would not be needed to accommodate these larger vehicles. If the study results in no adverse effects, and set standards for natural and cultural resources and visitor experience are maintained, larger buses could be used.

Also, because the longer premium tours would reach areas west of Teklanika where there is a substantial change to the structure of the road, bus size would not exceed the current design standard for Wildlife Viewing Subzone 2.

OTHER VEHICLE USE

To maximize the number of visitors who can have a park experience, other vehicle use may be reallocated to benefit the transportation system. The following management strategies represent the most restrictive actions that could be taken over the life of the plan.

National Park Service

NPS employees would access duty stations on the restricted portions of the Park Road (Savage River to Wonder Lake) via an employee shuttle system. The transit system would be used by employee guests for access.

Contractors and NPS operations would be managed (i.e., scheduling, volume of vehicle use) to minimize displacement of visitors and prevent resource impacts.

Professional Photography and Commercial Filming

The professional photography and commercial filming programs would be combined to provide greater equity in permit distribution and to gain efficiencies in administration and oversight. Two private vehicle permits would be allowed each day and managed for two distinct areas: Savage River to Toklat and Toklat to Wonder Lake. During periods of high traffic volume (i.e., defined as days or periods of days when non-system use would displace buses), permit holders may be required to use the transit system to avoid displacement of visitor opportunities and administrative functions.

Commercial Use for Kantishna Inholders

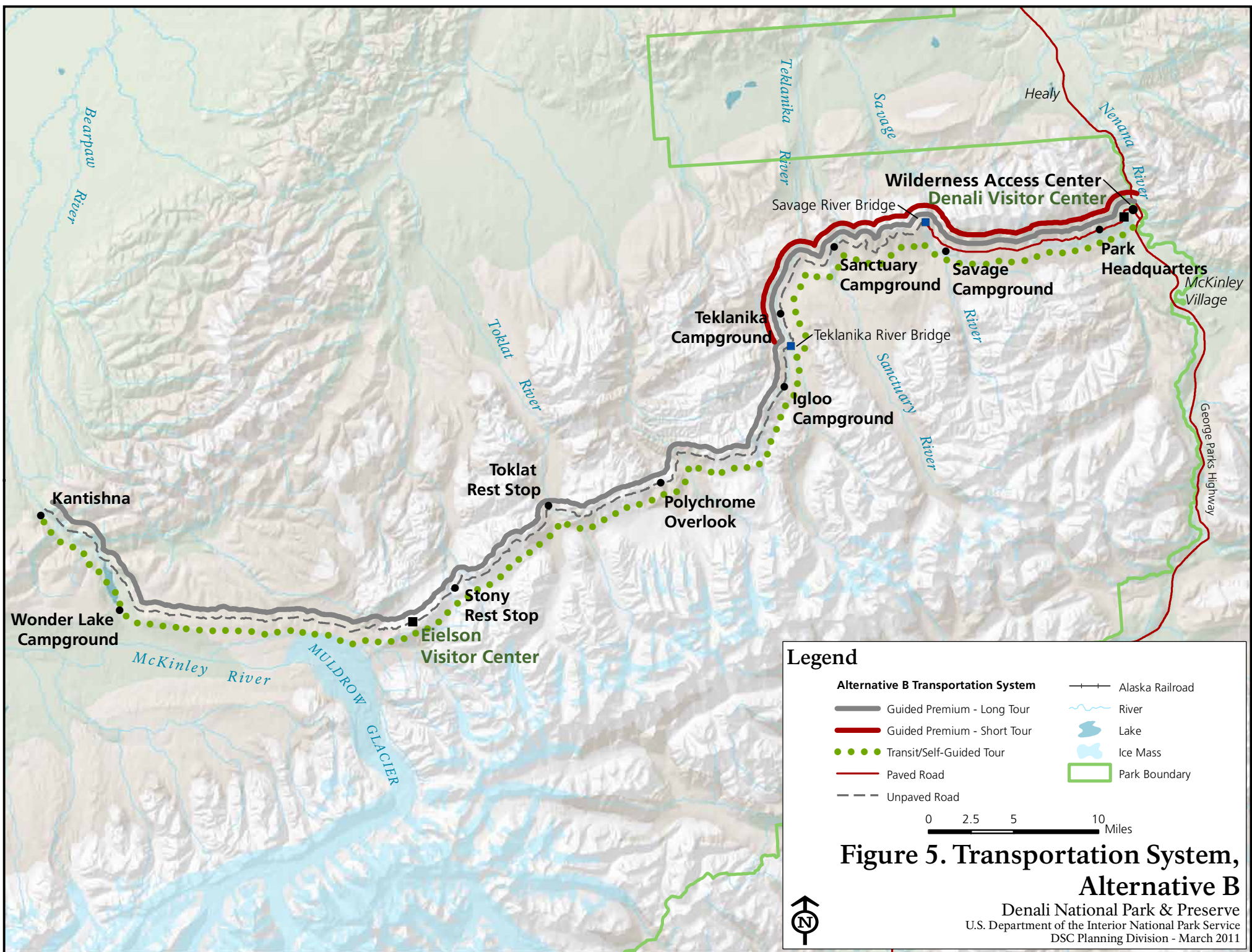
Commercial authorizations would be issued to retain current levels of day tour service to each Kantishna lodge (not to exceed four per day total for all lodges combined).

Teklanika River Campground

Private vehicles used to access Teklanika River Campground would travel westbound on the Park Road during a designated time period to minimize displacement of visitors and prevent resource impacts. If needed (to accommodate growth or minimize decreases in buses that may result from violations of the indicators and standards), Teklanika River Campground would phase in a tents-only campground over a 10-year period with visitors using the transportation system for access.

COSTS

Operating costs (responsibility of the concessioner) and National Park Service costs are summarized in “Table 3. Summary of Alternative Elements.” Operating costs were estimated through a financial feasibility analysis, which is on file at the park. A detailed breakdown of NPS costs is provided in appendix B. All costs are presented in 2011 dollars and are not adjusted for inflation. Although some expenses would not be incurred annually and some expenses could change year to year, average annual NPS costs for vehicle management activities were estimated for comparison purposes only by dividing the total cost by the life of the plan—assumed to be 20 years for the purposes of these calculations.



ALTERNATIVE C: MAXIMIZING VISITOR OPPORTUNITIES

GENERAL CONCEPT

This alternative promotes a variety of visitor opportunities that range from brief experiences in the park's entrance area, to short and long visits along segments of the Park Road, to multi-day experiences in the park's backcountry. Visitors would have opportunities for spontaneity and freedom during their park visit, while set standards for resource condition and visitor experience are met.

The transportation system in this alternative would separate tour and transit functions by developing a self-guided economy tour. Distinguishing the economy tour experience from transit offers benefits to both user groups. Dedicated transit services would provide more seating for eastbound hikers, increasing visitors' freedom of movement. A dedicated economy tour service would provide visitors with a modest tour experience.

To further preserve wilderness resource values and contemplative visitor experiences, a new management subzone on the Park Road would be created west of Eielson Visitor Center to Wonder Lake (Wildlife Viewing Subzone 3). This section would be managed for the lowest traffic volume on the Park Road and not allow significant growth beyond the current condition (see figure 4).

Figure 6 provides a visual depiction of the nature of transit and tour operations under alternative C.

MANAGEMENT ZONING

The following changes to the Park Road subzones would be implemented to clarify management objectives necessary to achieve desired conditions within specific road sections (see figure 7). These changes are

made in part to reaffirm the 2007 *Road Design Standards* and further support the preservation of character-defining qualities and attributes contributing to the road's eligibility for the National Register of Historic Places. The proposed changes include the following:

1. The creation of Wildlife Viewing Subzone 3 (from the Eielson Visitor Center to the Wonder Lake junction).

This subzone includes the gravel section of Park Road that is maintained to a narrower width on which greater vehicle restrictions (Rules of the Road) continue to apply. Visitors must use one of the bus systems and private vehicles are restricted. Buses are given the right-of-way. The primary purpose of this road segment is for a more wild and remote type of visitor experience along the road corridor to view wildlife and scenery. Travel to this section of the road requires a significant time commitment by visitors. Those who make the trip would experience a more quiet and contemplative setting and fewer encounters with other vehicles along this section of road than in Wildlife Viewing Subzone 2. Park facilities are highly limited to minimize any additional footprint on the landscape and no visitor contact stations would be provided along this section of road.

2. The areas included in Wildlife Viewing Subzone 2 would continue for the Park Road from the Teklanika River Bridge to the Eielson Visitor Center and from the Wonder Lake junction to the Old Park Boundary.

DESCRIPTION OF THE TRANSPORTATION SYSTEM

Transit

The major purpose of transit in this alternative is to facilitate a full range of off-bus experiences (e.g., visiting a visitor center, hiking in the backcountry, participating in a NPS educational program, accessing campgrounds, taking photographs of wildlife and scenery). The service would be marketed to promote these off-bus opportunities, although visitors would not be required to get off the transit bus.

Transit would begin at the Wilderness Access Center and access the full length of the Park Road. Buses would turn around at various destinations which may require a change of buses for transit riders traveling farther into the park. For example, the park might consider a loop shuttle between Eielson and Kantishna, such that direct transit service would go only as far as Eielson and visitors would use the loop shuttle to go further west. Visitors would be able to get off and re-board the bus at any point and ticket prices would be prorated by distance to the bus destination.

All visitors (both independent travelers and organized groups) would have the opportunity to pre-book a majority of transit seats, however; some seats would be retained to allow for spontaneous trip planning for walk-in visitors. Additionally, the transit system would be managed for freedom of movement by keeping some seats on each bus available to pick-up eastbound hikers.

Transit would also provide transport to the Wilderness Access Center for tour passengers who choose to leave their tour and have an unstructured park experience. This emphasis on increased flexibility by managing transit for lower bus rider occupancy could result in a higher cost compared to the existing condition.

Interpretation would be offered on transit through nonpersonal services (e.g., printed

materials). Drivers would answer questions in a knowledgeable manner upon request.

Transit buses would run on a regular schedule to provide a high level of predictability and reliability for wilderness recreation. Frequency of departures from the Wilderness Access Center would be scheduled to meet demand. The Denali Visitor Center would be a regular drop-off point on the transit schedule for eastbound buses on the way back to the Wilderness Access Center. Those that take advantage of visiting the Denali Visitor Center would use an entrance area shuttle to return to the Wilderness Access Center.

Self-guided Economy Tour

The major purpose of the self-guided economy tour is to facilitate an independent, affordable, on-bus Park Road experience. Self-guided economy tours would be provided via a dedicated bus system and would reach various destinations along the Park Road. Passengers would retain a seat on the same bus throughout the tour.

Self-guided tour materials (guide books, list of options for off-bus activities, use of activity packs for youth) could be included in the ticket price.

Passengers could obtain supplemental interpretive materials that would be used through a variety of means (such as MP3 players, smartphone technology, or other audio devices). Site-specific information from the driver would augment self-guided tour materials. No food or beverage services would be provided. Self-guided economy tours would originate at both the Wilderness Access Center and Denali Visitor Center, but not outside of the park. If space is available, eastbound tour buses could pick up hikers.

Guided Premium Tours

Premium guided tours would be developed to provide a fully facilitated park experience conducted by the National Park Service, concessioners, or education partners.

A variety of premium tour options of different lengths and topics would be provided to meet the needs of diverse audiences. Tours to major destinations along the Park Road could provide either a general park overview or be focused on a particular theme that explores various park resources in-depth (e.g., birding, wolves). Tour size would be tailored to the needs and constraints of the tour program. Size and configuration of bus equipment would be directed by the type of tour, but would not exceed the current design standard.

All premium tour passengers would have at least one opportunity for interaction with an NPS interpretive facility or NPS staff member.

Passengers would receive a fully narrated tour by a driver and/or naturalist providing the highest standard of interpretation, which may be supplemented by media and technology. All drivers and naturalists would be trained to NPS standards. Additional learning opportunities could be provided en route through off-bus experiences (e.g., guided walks, demonstrations). Food and beverages could be included.

Premium tours could be 100% pre-booked. Visitors without reservations would stand-by for seats. Premium tours could pick up passengers at the Wilderness Access Center or at local hotels. Premium tour buses would not pick up hikers along the Park Road.

In alternative C, attempts would be made to increase comfort on tour buses by reducing the number of seats on these buses. In addition, better viewing opportunities would be provided on tours, and the technology and interpretive materials would be updated more frequently.

Bus Size

Size and configuration of premium tour bus equipment would be directed by the type of tour, but would not exceed the current design standard.

OTHER VEHICLE USE

To increase visitor opportunities, vehicle use may be reallocated to benefit the transportation system. The following management strategies represent the most restrictive actions that would be taken over the life of the plan.

National Park Service

NPS employees could use private vehicles to access duty stations on the restricted portions of the Park Road (Savage River to Wonder Lake) during periods of low traffic volume (i.e., outside of those days or periods of days when non-system use would displace buses). During periods of high traffic volume, employees would use the transit system.

Employee guests could travel with employees or use the transit or economy tour system for access.

Contractors and NPS operations would be managed (i.e., scheduling, volume of vehicle use) to minimize displacement of visitors and prevent resource impacts.

Professional Photography and Commercial Filming

The professional photography and commercial filming programs would be combined to provide greater equity in permit distribution and to gain efficiencies in administration and oversight. Up to three permits a day would be available for the entire road, during the shoulder seasons that occur from Memorial Day weekend to approximately June 10th, and approximately August 25th to the end of the season. During the peak season (approximately June 10th to August 25th), up to one permit per day will be issued for the entire Park Road. At no time may two or more professional photographer/commercial filming vehicles be stopped at the same location if standards would be exceeded.

During periods of high traffic volume, permit holders would be required to use the

transit system to avoid displacement of visitor opportunities and administrative functions

Commercial Use for Kantishna Inholders

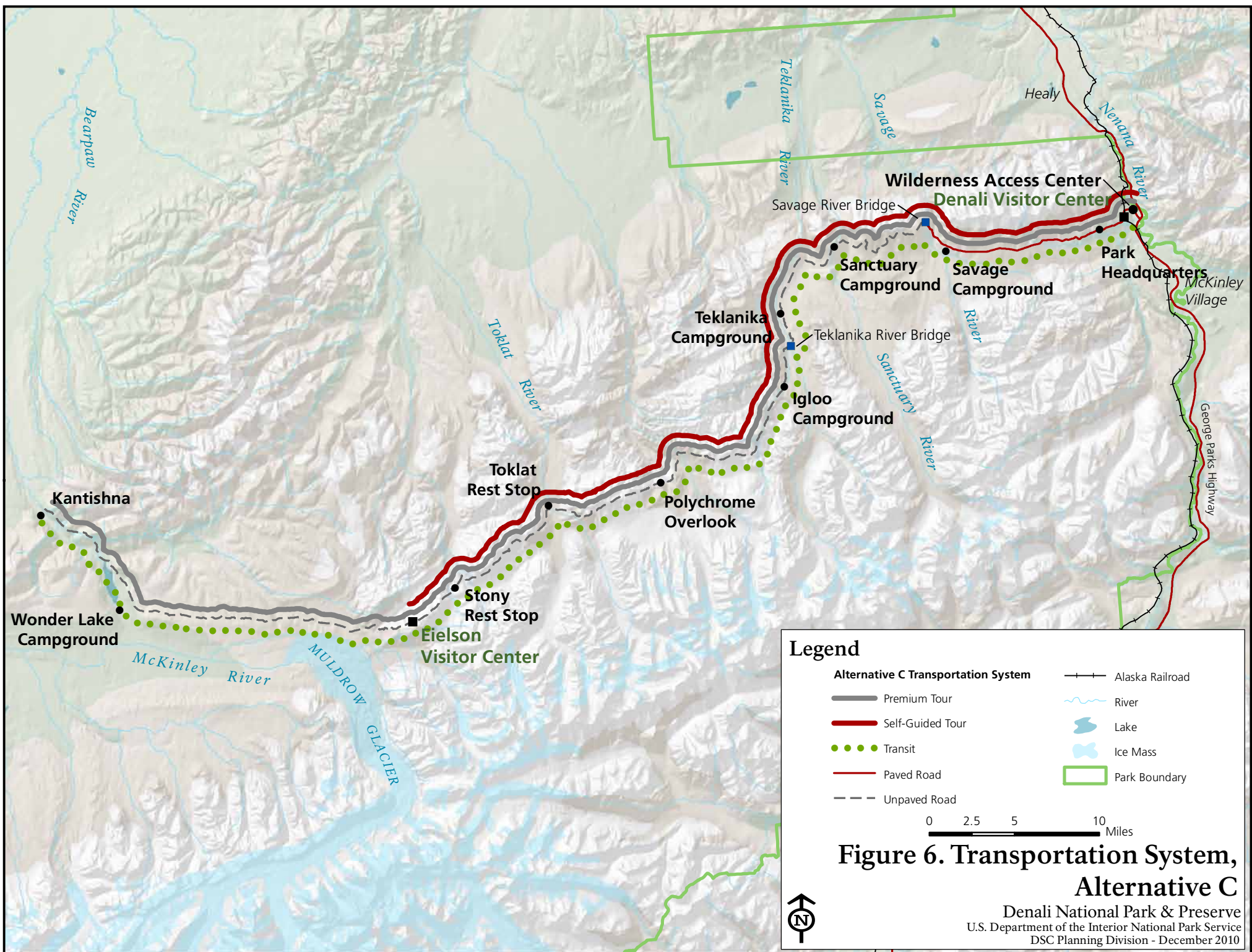
One or more commercial authorizations would be issued for commercial day tours to Kantishna.

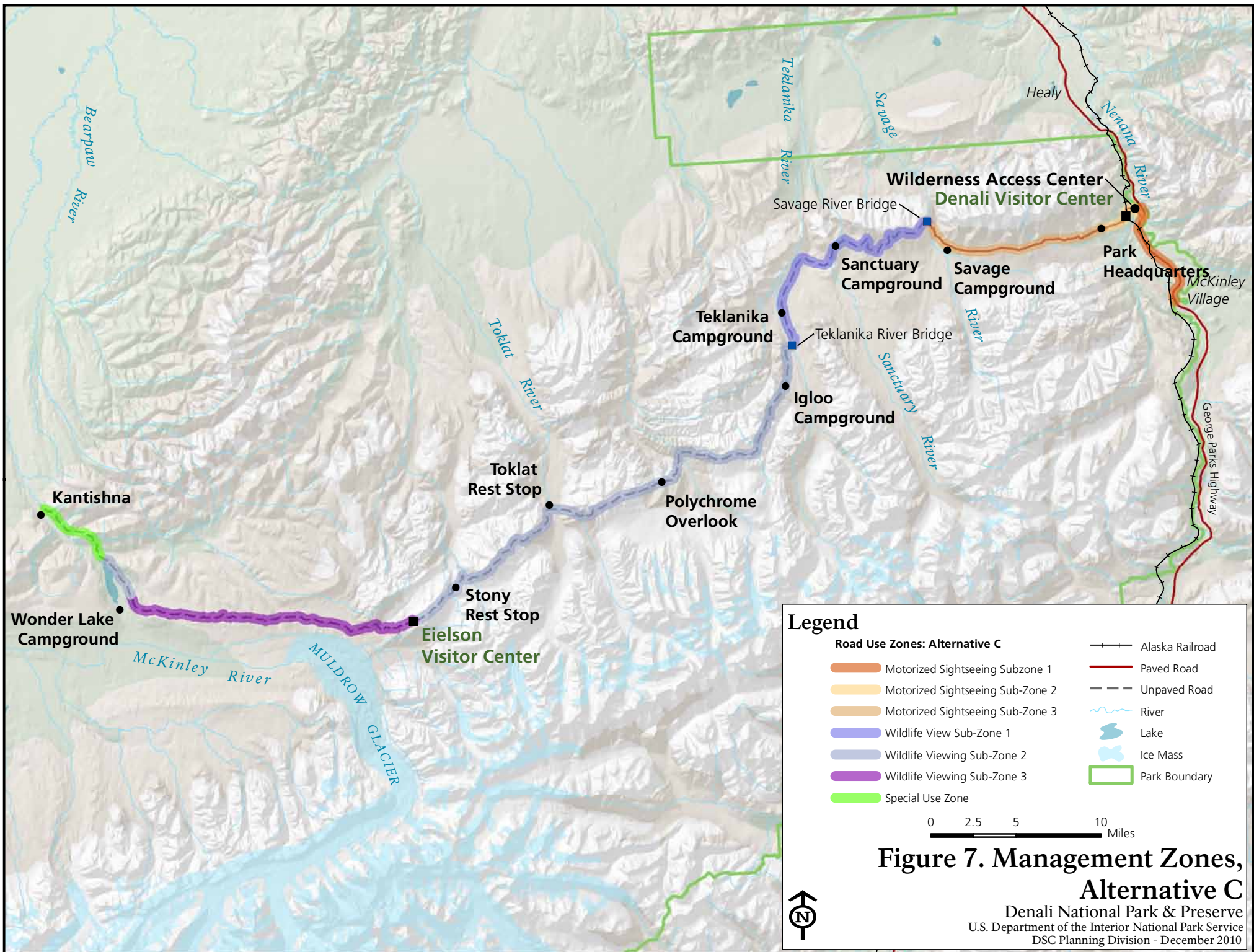
Teklanika River Campground

Private vehicles used to access Teklanika River Campground would travel on the Park Road only during designated time periods of low traffic volume to minimize displacement of visitors and prevent resource impacts.

COSTS

Operating costs (responsibility of the concessioner) and National Park Service costs are summarized in “Table 3: Summary of Alternative Elements.” Operating costs were estimated through a financial feasibility analysis, which is on file at the park. A detailed breakdown of NPS costs is provided in appendix B. All costs are presented in 2011 dollars and are not adjusted for inflation. Although some expenses would not be incurred annually and some expenses could change year to year, average annual NPS costs for vehicle management activities were estimated for comparison purposes only by dividing the total cost by the life of the plan—assumed to be 20 years for the purposes of these calculations.





THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify the environmentally preferable alternative(s) in its NEPA documents for public review and comment. Guidance from the Council on Environmental Quality states that the environmentally preferable alternative(s) is the alternative that “causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves and enhances historic, cultural and natural resources” (CEQ 1981).

As described in chapter 1, all of the alternatives would have minimal impact on biological or physical resources such as vegetation, soundscape, air quality, water resources, geology, and soils. However, all alternatives would continue to cause impacts on wildlife because of the presence of vehicles and people along the Park Road. These could include effects on wildlife behavior, habituation, movement, or stress levels.

Under alternatives B and C, use of the Park Road could increase should the demand exist, which could both benefit and adversely affect wildlife. For example, the transportation model for these alternatives indicates there could be a reduction in bus volumes on the road during the peak daytime hours (benefit), but there could be an increase in volume through what are currently shoulder periods of the day (early-to mid-morning and late afternoon through evening). Therefore, this effect would extend the overall daily duration of wildlife disturbance and reduce the amount of “downtime” for wildlife to be free from bus/human disturbances (an adverse impact).

However, both alternatives B and C would provide environmental benefits compared to alternative A through the implementation of monitoring and adaptive strategies for

managing vehicle use and protecting wildlife, wilderness values, and other park resources.

Unlike alternative A, alternatives B and C would incorporate a formal program of indicators, standards, and adaptive management strategies for the protection and preservation of desired conditions for natural resources. For example, under both of these alternatives, sheep gap spacing would be monitored to minimize impacts on Dall sheep, nighttime traffic would be monitored to minimize disturbances to wildlife, and studies would be used to monitor and assess natural resource conditions. Based on the results of the monitoring, management actions could then be taken to ensure that standards are met. This formal program would provide better long-term protection and preservation of natural resources when compared to alternative A.

Alternative C also includes the application of a new management zone—Wildlife Viewing Subzone 3 from the Eielson Visitor Center to the Wonder Lake junction. The intent of this zone is to further preserve wilderness resource values and contemplative visitor experiences. It would be managed for the lowest traffic volume on the Park Road and notable growth in traffic beyond the current condition would not be allowed. Establishing this management zone could have the indirect effect of minimizing disturbances to wildlife in this area over the length of this plan.

As described in chapter 1, none of the alternatives would have more than negligible effects on cultural resources, as there would be no ground-disturbance, construction activities, or any other alterations that would affect archeological sites, historic structures, or cultural landscapes. None of the alternatives would impede access to places of traditional religious, ceremonial, or other

customary activities, nor would any of the alternatives affect how museum collections are managed. As a result, all alternatives provide the same level of protection and preservation of historic and other cultural resources.

Considering the potential for alternatives B and C to better protect and preserve natural

resources, they were considered to be less damaging to park resources than alternative A. However, because alternatives B and C are considered to be so similar in terms of impacts on wildlife and other natural resources, the National Park Service has determined they are both environmentally preferable.

SUMMARY TABLES

As required by the National Environmental Policy Act, the alternatives described in this chapter represent a full spectrum of options for managing vehicles along the Park Road at Denali National Park and Preserve. Table 3

shows a summary of actions proposed under each alternative, while table 4 provides a summary of the environmental consequences associated with each alternative.

Table 3. Summary of Alternative Elements

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
General Concept	This concept reflects current conditions at Denali, and provides a baseline against which to compare the other management concepts. Currently, vehicle use on the restricted section of the Park Road is managed to maintain a 10,512 seasonal limit that was set in the 1986 general management plan and then formalized in regulations in 2000.	This concept promotes maximizing seating on all transit and tour vehicles to offer the largest number of visitors the opportunity to travel the Park Road. Visitors would have access to a highly structured transportation system that offers predictability, efficiency, and greater opportunity to have a park experience of choice, while meeting set standards for natural resource protection and visitor experience.	This concept promotes a variety of visitor opportunities that range from brief experiences in the park's entrance area, to short and long visits along segments of the Park Road, to multi-day experiences in the park's backcountry. Visitors would have opportunities for spontaneity and freedom during their park visit, while set standards for resource condition and visitor experience are met.
Management Zoning	Management zones along the Park Road would remain as described in the 1997 <i>Entrance Area and Road Corridor Development Concept Plan</i> . Current management zoning could allow for an increase from the current condition in vehicle use west of Eielson to Wonder Lake.	Same as alternative A.	A Wildlife Viewing Subzone 3 would be created west of Eielson Visitor Center to Wonder Lake; it would be managed for the lowest traffic volume on the Park Road and would not allow significant growth beyond the current condition.
Transportation System			
Transit	<ul style="list-style-type: none"> • Would provide access along the Park Road, where visitors can get off and re-board at any point • Price would be determined by destination • Could be used by a high percentage of riders who choose to remain on the bus which reduces the number of seats available to 	<ul style="list-style-type: none"> • Transit and self-guided economy tour services would be combined on the same bus to provide the greatest number of visitors an affordable option to accessing the park • Transit riders could get off and re-board at any point, but tour passengers would have the opportunity to retain a seat on the same bus throughout. The NPS would explore tools (e.g., reservation 	<ul style="list-style-type: none"> • Purpose would be to facilitate a full range of off-bus experiences • Riders could get off and re-board at any point, and ticket prices would be prorated by distance to the bus destination • Run on a regular schedule from the Wilderness Access Center and scheduled to meet demand

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Transit (continued)	<p>pick up hikers along the Park Road</p> <ul style="list-style-type: none"> • Would run on a regular schedule from the Wilderness Access Center and scheduled to meet demand • Some open seats would be retained to allow for spontaneous trip planning for walk-in visitors and to pick-up eastbound travelers • Some buses would be dedicated as “camper buses” and have less seating, but more room for recreational equipment. • Interpretation would be on-demand and driver determined • Visitors could register for scheduled off-bus activities such as Discovery Hikes 	<p>placards) to allow economy tour passengers the opportunity for more desirable seating.</p> <ul style="list-style-type: none"> • Ticket prices would be prorated by distance to destinations (tour prices would likely be higher than transit) • Would be operated like a municipal bus system (e.g. runs on regular schedule) • Transit riders depart from the Wilderness Access Center; tour riders depart from the Denali Visitor Center after a park orientation • Some open seats would be retained to allow for spontaneous trip planning for walk-in visitors and to pick-up eastbound travelers • Strategies would be explored for carrying recreational equipment on the bus exterior. • Interpretation is on-demand and driver determined, with interpretive materials included for tour passengers • Visitors could register for scheduled off-bus activities such as Discovery Hikes 	<ul style="list-style-type: none"> • Buses would turn around at various destinations which may require a change of buses for traveling farther into the park • The Denali Visitor Center would be a regular stop on the transit schedule for eastbound • Some seats would be retained to allow for spontaneous trip planning for walk-in visitors and to pick-up eastbound travelers • Interpretation would be on-demand and through non-personal services (e.g., printed materials) • Visitors could register for scheduled off-bus activities such as Discovery Hikes
Economy Tours	<ul style="list-style-type: none"> • There would be no offering of a self-guided economy tour 	<ul style="list-style-type: none"> • Combined with Transit; see above 	<ul style="list-style-type: none"> • Self-guided economy tours would be provided via a dedicated bus system and would reach various destinations along the Park Road

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Economy Tours			<ul style="list-style-type: none"> • Passengers would retain a seat on the same bus throughout the tour • Self-guided economy tours would originate at both the Wilderness Access Center and Denali Visitor Center • If space is available, eastbound tour buses could pick up hikers • Interpretation would include self-guided economy tour materials included in the ticket price; supplemental electronic media; and site-specific, driver-determined narration
Premium Tours	<ul style="list-style-type: none"> • Guided premium tours would include: • Tundra Wilderness Tour (Toklat at Mile 53 is final rest stop, but 80% of this tour continues to Stony Overlook) • Denali History Tour (goes to Primrose at Mile 17) • Kantishna Experience (goes to Kantishna at Mile 92) • All tours would have at least one opportunity for interaction with an NPS interpretive facility or NPS staff member • All tours would be fully narrated by a driver and/or 	<ul style="list-style-type: none"> • Guided premium tours would include: • Premium Short Tour: up to half a day in duration; offered to designated locations throughout Wildlife Viewing Subzone 1 (Savage River to Teklanika) with standardized topics and activities, and stop at the Denali Visitor Center • Premium Long Tour: full-day tour offered to destinations the length of the Park Road, but predominately operates within Wildlife Viewing Subzone 2 (Teklanika to Wonder Lake); a variety of tour topics and activities would be offered and tour destinations would be driven by visitor demand. Offerings 	<ul style="list-style-type: none"> • Guided premium tours would include: • A variety of options of different lengths and topics (e.g., general park overview, birding, wolves) to meet the needs of diverse audiences • At least one opportunity for interaction with an NPS interpretive facility or NPS staff member • Fully narrated tour by a driver and/or naturalist providing the highest standard of interpretation, which may be supplemented by media and technology

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Premium Tours (continued)	naturalist providing the highest standard of interpretation, which may be supplemented by media and technology	could include off-bus activities with professional interpretive programs, guided talks at key locations, the use of media and technology, and opportunities to visit Denali Visitor Center, Toklat, or Eielson Visitor Center <ul style="list-style-type: none"> All tours would have at least one opportunity for interaction with an NPS interpretive facility or NPS staff member 	<ul style="list-style-type: none"> Additional learning opportunities through off-bus experiences (e.g., guided walks, demonstrations)
Bus Size	<ul style="list-style-type: none"> There would be no changes to the size of the buses travelling the Park Road 	<ul style="list-style-type: none"> The National Park Service may conduct a study to explore the effects of larger buses than the current design for use in Wildlife Viewing Subzone 1 (Savage River to Teklanika) 	<ul style="list-style-type: none"> Size and construct of premium tour bus equipment would be directed by the type of tour, but would not exceed the current design standard
Other Vehicle Use (The following management strategies represent the most restrictive actions that could be taken over the life of the plan)			
NPS Vehicles	<ul style="list-style-type: none"> Of the 10,512 vehicles allowed on the Park Road per season, 1,754 permits would be allocated for daily NPS operations NPS access to duty stations on the restricted portions of the Park Road (Savage River to Wonder Lake) would be allowed via private vehicle Contractor traffic needed for road repair or construction 	<ul style="list-style-type: none"> NPS access to duty stations on the restricted portions of the Park Road (Savage River to Wonder Lake) via an employee shuttle system The transit system would be used by employee guests for access Contractors and NPS operations would be managed (i.e., scheduling, volume of vehicle use) to minimize displacement of visitors and prevent resource impacts 	<ul style="list-style-type: none"> NPS employees could use private vehicles to access duty stations on the restricted portions of the Park Road (Savage River to Wonder Lake) during periods of low traffic volume During periods of high traffic volume, employees would use the transit system. Employee guests could travel with employees or use the transportation system for access Contractors and NPS operations would be

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
NPS Vehicles (continued)	projects would be permitted to drive the Park Road and is not counted against the 10,512 limit		managed to minimize displacement of visitors and prevent resource impacts
Professional Photography/ Commercial Filming Vehicles	<ul style="list-style-type: none"> Professional Photography: up to five road permits per day would be distributed through a lottery system Commercial Filming: managed through special use permits which would be distributed at the discretion of park management 	<ul style="list-style-type: none"> Programs combined to provide greater equity in permit distribution and to gain efficiencies in administration and oversight Two private vehicle permits would be allowed each day for the entire Park Road, but managed for two distinct areas: Savage River to Toklat and Toklat to Wonder Lake During periods of high traffic volume, permit holders would be required to use the transit system to avoid displacement of visitor opportunities and administrative functions 	<ul style="list-style-type: none"> Programs combined to provide greater equity in permit distribution and to gain efficiencies in administration and oversight Up to three permits would be available for the entire road, as long as the vehicles do not displace buses (or administrative vehicles if travelling at night); however, at no time may two or more professional photographer vehicles be stopped at the same location, except at night. During periods of high traffic volume, permit holders would be required to use the transit system to avoid displacement of visitor opportunities and administrative functions
Commercial Use for Kantishna Inholders	<ul style="list-style-type: none"> Kantishna lodge permits for vehicle use of the Park Road, including day use, would be based on the general management plan and other management documents 	<ul style="list-style-type: none"> Commercial authorizations would be issued to retain current levels of day tour service to each Kantishna lodge (not to exceed four per day total for all lodges combined). 	<ul style="list-style-type: none"> One or more commercial authorization(s) would be issued for commercial day tours to Kantishna.

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Commercial Use for Kantishna Inholders (continued)	<ul style="list-style-type: none"> Specific allocations for inholder vehicle use would be set annually in the Park's Compendium 		
Teklanika River Campground Vehicles	<ul style="list-style-type: none"> Visitors driving their own vehicles out to Teklanika River Campground would be required to pay for a three-night minimum stay, and to otherwise use the transportation system to move throughout the park 	<ul style="list-style-type: none"> Private vehicles used to access Teklanika River Campground would travel westbound on the Park Road during a designated time period If needed, Teklanika River Campground would phase in a tents-only campground over a 10 year period with visitors using the transportation system for access 	<ul style="list-style-type: none"> Private vehicles used to access Teklanika River Campground would travel westbound on the Park Road only during designated periods of low traffic volume
Other Elements			
User Capacity and Adaptive Management	No formal program for adaptively managing user capacity	Formal program using indicators, standards, and adaptive management tools to protect the exceptional condition of the park's resources and values, as well as visitor experience	Formal program using indicators, standards, and adaptive management tools to protect the exceptional condition of the park's resources and values, as well as visitor experience
Costs	Operating Costs at system capacity (Concessioner): approximately \$16,900,000 per year NPS Costs: approximately \$4,159,000--\$4,205,000 per year (approximately \$83,180,000--\$84,100,000 over the life of the plan)	Operating Costs (Concessioner): approximately \$21,300,000 per year NPS Costs: approximately \$5,070,510--\$5,188,135 per year (approximately \$101,410,200--\$103,762,700 over the life of the plan)	Operating Costs (Concessioner): approximately \$23,900,000 NPS Costs: approximately \$5,008,460--\$5,126,085 per year (approximately \$100,169,200--\$102,521,700 over the life of the plan)

Table 4. Summary of Environmental Consequences

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Visitor Use and Experience	<p>Alternative A would have a long-term, minor, beneficial impact on visitors' interpretive experience and safety, as the current system provides access to interpretive services, and provides a safe bus experience governed by strict adherence to road rules.</p> <p>It would have long-term, minor, adverse impacts on other elements of visitor use and experience (access to wilderness and other park features, cost of access, visitors' transportation opportunities).</p> <p>The cumulative impacts of alternative A would be long-term, moderate, and beneficial. The impact of alternative A would make a significant contribution to the cumulative effects.</p>	<p>Alternative B could have a minor, adverse impact on access to wilderness due to transportation changes such as combining the transit system with an economy tour and not having configured camper buses.</p> <p>It would have long-term minor, beneficial impact on all other elements, including on the cost of access, access to park features, visitors' transportation and interpretive experience, and visitor comfort.</p> <p>When combined with past, present, and reasonably foreseeable future actions, there would be long-term, moderate beneficial cumulative effects under alternative B, which would contribute substantially to the cumulative benefits.</p>	<p>Alternative C would have long-term, minor beneficial impact on visitor access and a moderate beneficial impact on visitor use and experience.</p> <p>The actions under alternative C would contribute substantially to the long-term, moderate, beneficial cumulative effects.</p>
Transportation System and Traffic	<p>Alternative A would have a local, long-term, minor, adverse impact on the transportation system due to transit bus capacity and Tundra Wilderness Tour, bus capacity being exceeded some days during the peak season due to the existing vehicle limits.</p> <p>Overall, the local, long-term, minor, adverse impact of alternative A, when combined with the local, long-term, moderate, beneficial impacts of the other cumulative actions would result in local, long-term, moderate, beneficial</p>	<p>Overall, alternative B would have a local and regional, long-term, moderate, beneficial impact on the transportation system and traffic by providing the framework for a modest increase in the seasonal capacity of the transportation system.</p> <p>Overall, the local, long-term, moderate, beneficial impact of alternative B, when combined with the local, long-term, moderate, beneficial impacts of these other actions would result in local, long-term, moderate,</p>	<p>Alternative C would have a local, short-term, moderate, adverse impact on the transportation system due to the need to incorporate a separate self-guiding tour bus system, the potential need to acquire different-sized buses to meet the demand of the various premium tours, and the need for increased coordination among transit buses, self-guiding tour buses, and premium tour buses. Over the life of this plan, alternative C would have a moderate local and regional beneficial impact</p>

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Transportation System and Traffic (continued)	impacts to the transportation system. Alternative A would contribute a small, adverse increment to overall cumulative impacts.	beneficial impacts to the transportation system. Alternative B would contribute a substantial benefit to overall cumulative impacts.	on the transportation system and traffic by providing for a focus on opportunities for specialty-themed tours, establishing an economy tour, and providing a slight increase to the seasonal capacity of the transportation system. Overall, the impacts of alternative C, when combined with the local, long-term, moderate, beneficial impacts of the actions described above would result in local, long-term, moderate, beneficial impacts to the transportation system. Alternative C would contribute a substantial beneficial increment.
Wildlife and Wildlife Habitat	Alternative A would continue to result in a long-term, moderate, adverse, and local impact to wildlife and wildlife habitat. These effects would primarily result from moving vehicles and parked vehicles along the Park Road and off-bus human activity at transportation nodes. The effects would involve adverse impacts to wildlife behavior and habitat use, movement, and stress levels. Overall, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wildlife and wildlife habitat when the likely effects of alternative A actions are added to the effects of other past, present, and reasonably	Alternative B would have a long-term, moderate, adverse, and local effect on wildlife and wildlife habitat along the Park Road corridor. This effect would primarily result from the continued, and probably increased, number of vehicles (moving or parked) on the Park Road and associated increases in off-bus human activity at transportation nodes. This impact includes likely increase in adverse effects to wildlife during the daily off-peak hours and during the shoulder seasons due to increased traffic during those periods. The effects would involve adverse impacts to wildlife behavior, movement, and stress levels. However, this alternative would also benefit wildlife and wildlife habitat from actions such	Alternative C would have a long-term, moderate, adverse, and local effect on wildlife and wildlife habitat along the Park Road corridor. This effect would primarily result from the continued, and likely increased, number of vehicles on the Park Road throughout the season (moving or parked) and associated probably increase of off-bus human activity at transportation nodes. This impact includes likely increase in adverse effects to wildlife during the daily off-peak hours and during the shoulder seasons due to increased traffic during those periods. The effects would involve adverse impacts to wildlife behavior, movement, and stress levels. However, this alternative would also

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Wildlife and Wildlife Habitat (continued)	foreseeable future actions. Alternative A would contribute a medium, long-term, adverse increment to this cumulative impact.	<p>as adaptive management measures (e.g., use of indicators and standards, BACI¹ studies) and reductions in private vehicle use.</p> <p>Overall, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wildlife and wildlife habitat when the effects of alternative B actions are added to the effects of other past, present, and reasonably foreseeable future actions. Alternative B would contribute a medium, long-term, adverse increment to this cumulative effect.</p>	<p>benefit wildlife and wildlife habitat from actions such as adaptive management measures (e.g., indicators and standards, BACI studies), a more protective management zone between Eielson and Wonder Lake, and reductions in private vehicle use.</p> <p>Overall, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wildlife and wildlife habitat when the likely beneficial and adverse effects of alternative C actions are added to the effects of these other past, present, and reasonably foreseeable future actions. Alternative C would contribute a medium, long-term, adverse increment to this cumulative effect.</p>
Wilderness	Alternative A would result in a long-term, moderate, adverse, and local effect on opportunities for wilderness solitude and the undeveloped, natural, untrammeled qualities of the surrounding wilderness lands along the Park Road. These adverse effects would primarily relate to the continued visual and noise disturbances to wilderness and the area's ecological system from vehicle use along the Park Road, and from the continued concentrated human activity and	Alternative B would result in a long-term, moderate, adverse, and local effect on opportunities for solitude and the undeveloped, natural, untrammeled qualities of the surrounding wilderness lands along the Park Road. These adverse effects would primarily relate to the continued (and occasionally increased) visual and noise disturbances to wilderness and the area's ecological system from vehicle use along the road, unnatural conditions, and concentrated human	Alternative C would result in a long-term, moderate, adverse, and local effect on opportunities for solitude and the undeveloped, natural, untrammeled qualities of the surrounding wilderness lands along the Park Road. These adverse effects would primarily relate to the continued (and occasionally increased) visual and noise disturbances to wilderness and the area's ecological system from vehicle use along the road, unnatural conditions, and concentrated human

¹ Before-After-Control-Impact

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Wilderness (continued)	<p>imprints at and around the park's transportation nodes and road.</p> <p>Overall, when the effects of alternative A actions are added to the effects of other past, present, and reasonably foreseeable future actions, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wilderness. Alternative A would contribute a substantial, long-term, adverse increment to this cumulative impact.</p>	<p>activity.</p> <p>When compared to alternative A, this alternative could worsen the disturbances to solitude and natural conditions due to possible increases in bus traffic and increased off-bus activity. However, alternative B would also improve the preservation of wilderness character relative to alternative A from actions such as adaptive management measures and some reductions in private vehicle use.</p> <p>Overall, when the effects of alternative B actions are added to the effects of other past, present, and reasonably foreseeable future actions, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wilderness. Alternative B would contribute a substantial, long-term, adverse increment to this cumulative effect on wilderness.</p>	<p>activity.</p> <p>When compared to alternative A, this alternative could worsen the disturbances to solitude and natural conditions due to possible increases in bus traffic and increased off-bus activity. However, Alternative C would also improve the preservation of wilderness character relative to alternative A due to actions such as adaptive management measures, the establishment of a more protective management zone between Eielson and Wonder Lake, and some reductions in private vehicle use.</p> <p>Overall, when the effects of Alternative C actions are added to the effects of other past, present, and reasonably foreseeable future actions, there would be a long-term, moderate, adverse, and local to regionwide cumulative impact on wilderness. Alternative C would contribute a substantial long-term, adverse increment to this cumulative effect on wilderness.</p>
Park Management and Operations	<p>In general, continuing park operations under the no-action alternative would have local, long-term, minor adverse impacts to park operations along the Park Road.</p> <p>When other past, present, and future actions are combined with the impacts</p>	<p>While there could be some short-term, moderate, adverse impacts on park operations and management as a result of implementing a new vehicle management program, it is ultimately anticipated that alternative B would increase the effectiveness and efficiency</p>	<p>There would be some short-term, moderate, adverse impacts on park operations and management as a result of limiting staff travel during high volume periods. It is ultimately anticipated that alternative C would increase the effectiveness and efficiency of managing</p>

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Park Management and Operations (continued)	of alternative A, the cumulative effects would be short-term, moderate, and adverse, and long-term, minor, and beneficial. The no-action alternative would contribute minimally to these cumulative effects.	of managing vehicles along the Park Road, resulting in long-term, moderate, beneficial effects. When the effects of past, present, and reasonably foreseeable future actions are combined with the impacts of alternative B, the cumulative effects would be long-term, moderate, and beneficial. Alternative B would contribute substantially to these cumulative impacts.	vehicles along the Park Road, resulting in long-term, minor, beneficial effects. When the effects of past, presently, and reasonably foreseeable future actions are combined with the impacts of alternative C, the cumulative effects would be long term, moderate, and beneficial. Alternative C would contribute substantially to these impacts.
Socioeconomics	<p>Implementation of the no-action alternative would have little, if any, effect on future local population growth, but would contribute to the major temporary, seasonal population influx to the local area. Alternative A would also sustain existing linkages between park visitation, transit and tour system operations, the local and regional economy, the local communities, public facilities and services, and local government revenues over the foreseeable future. These linkages and their effects are major, primarily beneficial, and long term at the local level, and moderate, beneficial, and long term at the regional level.</p> <p>Combined with these effects, the no-action alternative would result in long-term, major, beneficial, local and regional cumulative effects. The no action alternative would contribute substantially to these</p>	<p>The economic effects, including those on employment and income, related to alternative B would be major, local and regional in scope, long term and beneficial. Long-term social consequences include minor increases in temporary/seasonal population and demands on community infrastructure and services. Potential long-term consequences would also include indirect effects on lodging tax revenue, a key revenue source for the Denali Borough. The net effect of the increases in demand and revenue on the borough would be beneficial given the existing facility and service capacity to serve current levels of seasonal visitation in the local area.</p> <p>When compared to alternative A, alternative B would result in minor incremental beneficial effects stemming from the increases in park and concessioner employment, payroll and other operating</p>	<p>The economic effects related to Alternative C, including the effects on employment and personal income, would be major, local and regional in scope, long term and beneficial. Long-term social consequences include major temporary/ seasonal population influxes and demands on community infrastructure and services. Potential long-term consequences would also include indirect effects on lodging tax revenue, a key revenue source for the Denali Borough. The net effect of the increases in demand and revenue on the borough would be beneficial given the existing facility and service capacity to serve current levels of seasonal visitation in the local area.</p> <p>When compared to alternative A, alternative C would result in minor, incremental, beneficial effects stemming from the increases in park and concessioner employment, payroll and other operating</p>

	Alternative A: No Action	Alternative B: Optimizing Visitor Access	Alternative C: Maximizing Visitor Opportunities
Socioeconomics (continued)	effects.	<p>expenditures associated with the operation of the transit and tour system. The incremental effects would begin to materialize upon implementation of alternative B.</p> <p>The cumulative effects from an economic and social perspective including alternative B, would be major, long term, and beneficial at both a local and regional level. Alternative B would contribute substantially to these effects.</p>	<p>expenditures associated with the operation of the transit and tour system. The incremental effects would begin to materialize upon implementation of alternative C.</p> <p>The cumulative effects, from an economic and social perspective including alternative C, would be major, long term, and beneficial at both a local and regional level. Alternative C would contribute substantially to these effects.</p>

USER CAPACITY AND ADAPTIVE MANAGEMENT

Generally, the process of managing user capacity in national parks involves not only an assessment of visitor numbers, but also analyzes where they go, what they do, and the “footprints” they leave behind. It is a dynamic process of planning for and managing the various characteristics of visitor use and park areas, and employing a variety of adaptive management strategies and tools to sustain desired conditions.

The decision-making process for addressing user capacity is a form of adaptive management and can be summarized by the following major planning and management steps (see figure 8):

1. Determining WHY an area was established as a national park.
2. Determining WHAT desired conditions for resources, visitor experiences, and types/levels of development should exist within the park.
3. Further articulating desired conditions by identifying indicators and standards that help direct management actions and serve as long-term measures of success at achieving desired conditions.
4. Determining HOW the park will be managed to achieve the desired conditions by defining and implementing visitor use management strategies and actions.
5. Monitoring existing conditions using indicators and standards.
6. Adjusting management actions to maintain desired conditions.

The goal of this adaptive management process is to protect the exceptional condition of the park's resources and values, as well as visitor experiences, through informed, proactive, and transparent management. The strategy is designed to

detect changes to important indicators that may be caused by adjustments in the transportation system on the park road, and to provide park managers with a method to adaptively manage traffic to address any changes in conditions.

Steps 1 and 2 have already been established for the park as part of other planning efforts and are included in chapter 1. During the planning phase for this project, the interdisciplinary planning team identified indicators and standards (step 3) for managing vehicles based on the park's purpose, significance, special mandates, desired conditions identified for management zones along the park road, and information gathered during ongoing studies (see table 1). An indicator is a measurable variable that can be used to track changes in resource and social conditions related to human activity so that existing conditions can be compared to desired conditions. A standard is the minimum acceptable condition for an indicator. The indicators and standards help translate the broader qualitative descriptions of desired conditions in the management zones into measureable conditions. As a result, park managers can track changes in resource conditions and visitor experiences, and provide a basis for the park staff to determine whether desired conditions are being met.

A number of discrete social and wildlife indicators would be monitored as part of this strategy. In addition, a Before-After, Control-Impact (BACI) study design would be employed to detect changes in natural conditions. A BACI study is based on the principle that if two locations (control and impact) are monitored before and after a human-caused disturbance (in this case an experimental change in the transportation system) the impact location may show a different pattern after the disturbance than

the control site (Underwood 1994, Smith 2002). BACI studies measure the change in the differences among sites between the two time periods (before and after impact) rather than measuring the overall magnitude of difference between the sites, thereby controlling for differences unrelated to the impact of interest. Park managers can then attribute changes in conditions to the management action if, after the action, the conditions at the impact site differ substantially from the control.

Prior to implementing any proposed change in schedule (step 4), a micro-simulation model (developed using GPS data from buses and other vehicles) would be used to test if a new schedule and the corresponding change (either increase or decrease) in traffic volume may meet the standards set for the indicators (Morris et al. 2010). After testing, the schedules could be adjusted such that, based on the simulations, they appear to meet the standards.

Given the inherent uncertainty in this system, implementation of either action alternative would be done in phases, building up to the full increase in traffic volume suggested possible by the simulation model. Of the full increase over current levels considered possible, only a portion of that difference in traffic volumes would be realized at any one time, and the impacts monitored and analyzed before additional increases are attempted.

Upon implementation of a new schedule, monitoring (step 5) would be conducted to ensure standards are being met with the corresponding change in traffic volume (whether that change is an increase or a decrease).

Subsequently, if trends indicate standards are or could be exceeded, the National Park Service would respond with a decrease in traffic levels, as necessary. Various management strategies (step 6) could be used depending on the specific indicator(s)

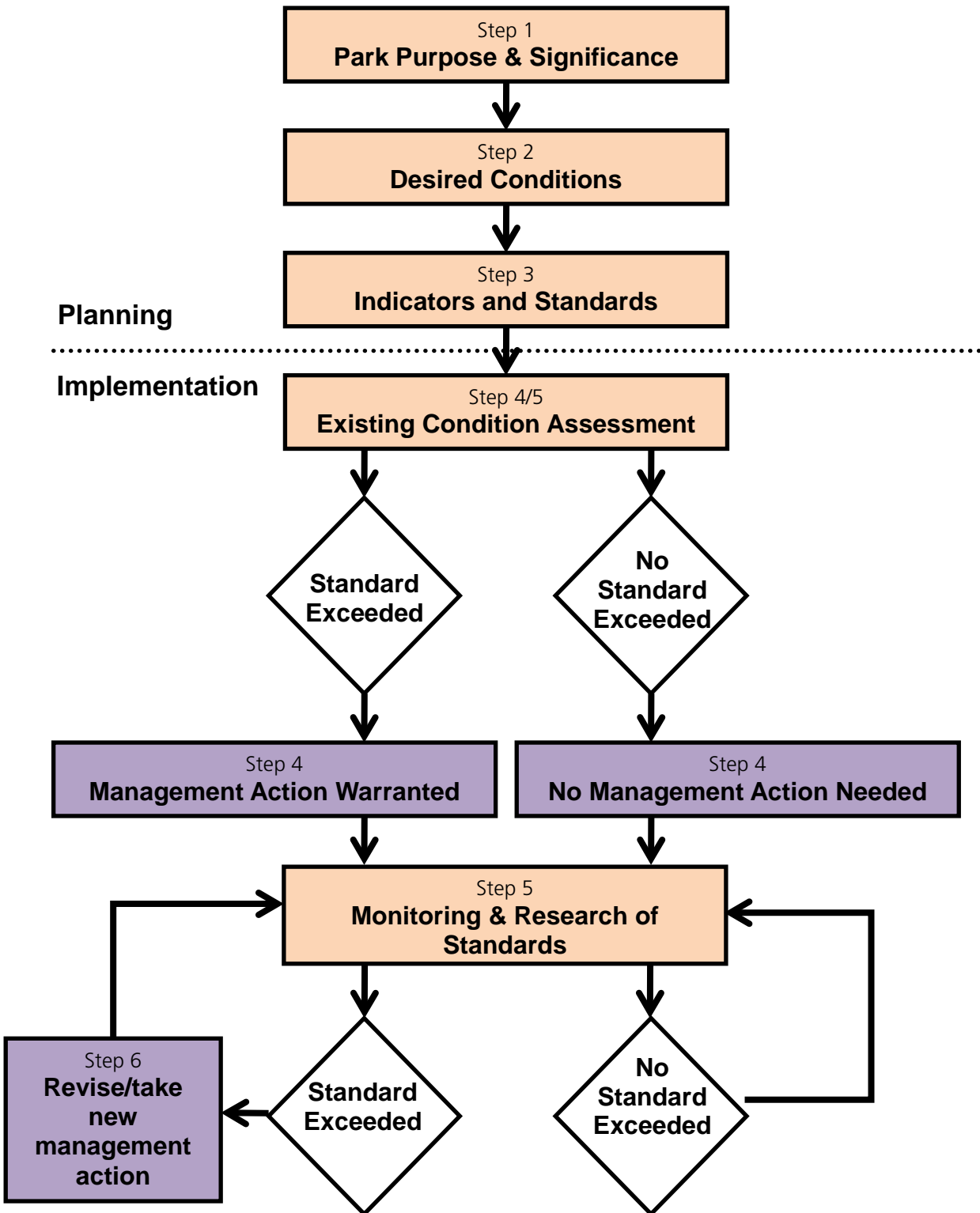
of concern, as identified in the following sections.

Initial monitoring of the indicators would also help determine if they are accurately measuring the conditions of concern and if the standards truly represent the minimally acceptable condition of the indicator. Park staff might decide to modify the indicators or standards and revise the monitoring program if better ways are found to measure changes caused by visitor use. Most of these types of changes should be made within the first several years of initiating monitoring. After this initial testing period, adjustments would be less likely to occur. However, given the level of assessment that has already been done on the proposed indicators for the park road, it is unlikely that much adjustment would be needed.

If conditions do change appreciably, the park staff might need to identify new indicators to ensure desired conditions are achieved and maintained. This iterative learning and refining process is a strength of the NPS user capacity and adaptive management program. Information on the NPS monitoring efforts, related visitor use management actions, and any changes to the indicators and standards would be made available to the public. All revisions to established indicators and standards would be subject to compliance with the National Environmental Policy Act, the National Historic Preservation Act, and other laws, regulations, and policies.

The following sections describe each of the indicators, their rationale for selection, and proposed monitoring techniques. More detail is provided in appendix C. These sections are then followed by a table summarizing the standards associated with each indicator.

Figure 8. Adaptive Management Framework



VISITOR EXPERIENCE INDICATORS AND STANDARDS

Indicators and standards for visitor experience would be associated with the following issues:

- numbers of vehicles at wildlife stops
- numbers of vehicles in viewsheds
- numbers of vehicles at rest stops
- hiker wait time

As part of the Road Capacity Study, researchers from the University of Vermont conducted qualitative visitor surveys in 2006 to identify factors that are important to visitor satisfaction and that would make for readily measurable indicators. Based on the results of this survey, and subsequent quantitative surveys in 2007, the selected factors were the number of vehicles at wildlife stops, in iconic viewscapes, and at rest stops. Four viewsheds—Teklanika, Highway Pass, Stoney, and Grassy Pass—were identified as the indicator viewscapes, and each contains one or more miles of the park road (the exact length of road visible for each viewcape varies). The Teklanika rest stop, Toklat rest stop, and Eielson Visitor Center were identified as the indicator rest areas that would be monitored.

Once a schedule is implemented, monitoring would occur multiple times per season for these indicators, both remotely (i.e., using GPS on vehicles, traffic counters) and directly (i.e., periodic staff monitoring along the road, at viewsheds, and at rest stops, in government vehicles and on buses). If trends indicate the standards for these indicators are or could be exceeded, the National Park Service could respond with a decrease in traffic levels as necessary. As described in actions common to all alternatives, transit opportunities would be given priority over tour opportunities if a decrease was necessary, and various management strategies could be used to achieve this.

These strategies could include changes to non-system uses described in the alternatives or changes to the transportation system schedule, such as removal of buses from the schedule or stepping the system back to the level it was last operating at when not exceeding the standards. Any such changes would occur between seasons.

Controlling the wait time for eastbound hikers re-boarding buses requires an adequate number of buses passing by in a given hour along the full length of the road and those buses having room on them to pick up additional passengers. Because of this, wait time for hikers is also an effective indicator for the ability of visitors to acquire a seat. If hiker wait times begin to consistently approach or exceed the standard, it would be an indication that there is not adequate transit service.

Regularly throughout the season, the operator of the transportation system would be required to monitor wait times on an ongoing basis along the park road with spot checks by park staff. If trends indicate the standard for this indicator is or could be exceeded, the National Park Service would respond with various management strategies, including leaving more empty seats on buses; adding more buses (only if it would not cause crowding standards to be exceeded); using “deadheads” or empty buses that would minimize impacts to the crowding standards; or reducing tour and non-system use to add transit.

As noted previously, if modeling or monitoring indicate the potential for an increase in traffic volume on the Park Road, and the demand for the increase exists, any such increase would be done in phases. The impacts of each incremental increase would then be monitored and analyzed relative to the indicators and standards before additional increases are attempted.

RESOURCE INDICATORS AND STANDARDS

Indicators and standards for resources would be associated with the following issues:

- sheep gap spacing
- night time traffic levels
- natural resource condition

Studies of sheep behavior in the park have shown that traffic can inhibit sheep from crossing the road in their migratory or daily movements. As a result, the park is proposing an indicator which would require that a gap in traffic occur each hour for a minimum length of time. There are critical locations along the road corridor that are known crossing points and these would be monitored to ensure that the gap is occurring. Once a schedule is implemented, monitoring would occur multiple times per season, both remotely (i.e., using GPS on vehicles, traffic counters) and directly (i.e., periodic staff monitoring at critical sheep crossing sites during peak traffic volumes).

If trends indicate the standards for sheep gap spacing are or could be exceeded, the National Park Service would respond with a decrease in traffic levels as necessary. As described in actions common to all alternatives, transit opportunities would be given priority over tour opportunities if a decrease were necessary, and various management strategies could be used to achieve this. These strategies could include changes to non-system uses described in the alternatives, changes to the transportation system schedule, removal of buses from the schedule, or stepping the system back to the level it was last operating at when not exceeding the standards. Any such changes would occur between seasons.

Currently, normal nighttime traffic levels (10:00 pm to 6:00 am) are very low (0-2 vehicles per hour based on traffic counters). Analyses have shown that unusually high nighttime traffic levels (greater than four vehicles per hour) have a strong correlation with decreased wildlife sightings the

following morning, indicating a disturbance to wildlife along the road corridor. These data are from days after quiet nights (a night when the Park Road was closed to all traffic) as well as after construction projects on the Park Road and periods of low night traffic; these data would continue to be used to refine associated standards.

Different standards would occur for large vehicles (vehicles greater than a gross vehicle weight rating of 80,000 pounds at no more than four per hour (i.e. a semi truck hauling fuel)) and for other traffic levels, because the nature of these vehicles (large construction vehicles produce more noise and move more quickly than visitor buses typically do) make them a greater concern for park management. Remote monitoring of vehicle numbers would be conducted using traffic counters along the park road multiple times per season.

If trends indicate the standards for nighttime traffic are or could be exceeded, various strategies could be used, such as modifying behavior (e.g., limiting movements and travel speed), increased signage, increased ranger patrols, or limits on the amount of nighttime traffic that can be on the restricted section of the road.

Although their complex nature does not allow for a particular standard to be identified, indicators for natural resource conditions would also be established because changes in vehicle numbers and traffic behavior may affect natural resources, such as wildlife. As a result, the purpose of this indicator is to ensure no degradation or change in natural resource conditions occurs due to traffic patterns.

By using a BACI study, park managers can attribute resource impacts to the management action if, after the action, there is a substantial change in the observations before the action. Multiple parameters would be monitored after a change is

implemented as part of the BACI study:

- distribution, number, and type of wildlife sightings, including distance from the road (based on ongoing park staff and bus driver observation)
- discrete studies of grizzly bear and Dall sheep movement rates when crossing the park road, distribution of bear inactive periods relative to the road, and the probability and timing of sheep crossings (all based on GPS data)
- ongoing population surveys for caribou, moose, Dall sheep, and wolves along with the collection of certain demographic data

A science advisory team would be formed and would review BACI study monitoring data to analyze whether or not observed changes are of concern. If trends indicate substantial changes in wildlife parameters after changes to the transportation system

are implemented, traffic levels could be reduced, and various management actions could be taken to accomplish this. These actions could include changes to non-system uses described in the alternatives or changes to the transportation system schedule, including removal of buses from the schedule or stepping the system back to the level it was last operating at when not exceeding the standards. These changes would occur between seasons.

As with visitor experience indicators and standards, if modeling or monitoring of resource indicators and standards indicates the potential for an increase in traffic volume on the Park Road, and the demand for the increase exists, any such increase would be done in phases. The impacts of each incremental increase would then be monitored and analyzed relative to the indicators and standards before additional increases are attempted.

Table 5. Standards for Visitor Experience and Resource Indicators

Indicator	Standard		
	Wildlife Viewing Subzone 1	Wildlife Viewing Subzone 2	Wildlife Viewing Subzone 3
Number of vehicles at a wildlife stop	At least 75% of wildlife stops will have 3 or fewer vehicles, averaged over 5 years. No one year will have less than 70% of wildlife stops with 3 or fewer vehicles.	At least 75% of wildlife stops will have 2 or fewer vehicles, averaged over 5 years. No one year will have less than 70% of wildlife stops with 2 or fewer vehicles.	At least 75% of wildlife stops will have 1 or fewer vehicles, averaged over 5 years. No one year will have less than 70% of wildlife stops with 1 or fewer vehicles.
	At least 90% of wildlife stops will have 4 or fewer vehicles, averaged over 5 years. No one year will have less than 85% of wildlife stops with 4 or fewer vehicles.	At least 90% of wildlife stops will have 3 or fewer vehicles, averaged over 5 years. No one year will have less than 85% of wildlife stops with 3 or fewer vehicles.	At least 90% of wildlife stops will have 2 or fewer vehicles, averaged over 5 years. No one year will have less than 85% of wildlife stops with 2 or fewer vehicles.
	At least 95% of wildlife stops will have 5 or fewer vehicles, averaged over 5 years. No one year will have less than 90% of wildlife stops with 5 or fewer vehicles.	At least 95% of wildlife stops will have 4 or fewer vehicles, averaged over 5 years. No one year will have less than 90% of wildlife stops with 4 or fewer vehicles.	At least 95% of wildlife stops will have 3 or fewer vehicles, averaged over 5 years. No one year will have less than 90% of wildlife stops with 3 or fewer vehicles.
Number of vehicles in a viewscape	At least 85% of the time during bus operating hours, there will be 3 or fewer vehicles visible in the Mile 26 viewshed. No one year will have less than 80% of the time during bus operating hours having 3 or fewer vehicles visible in the Mile 26 viewshed.	At least 85% of the time during bus operating hours, there will be 2 or fewer vehicles visible in the Miles 55 and 62 viewsheds. No one year will have less than 80% of the time during bus operating hours having 2 or fewer vehicles visible in the Miles 55 and 62 viewsheds.	At least 85% of the time during bus operating hours, there will be 1 or fewer vehicles visible in the Mile 68 viewshed. No one year will have less than 80% of the time during bus operating hours having 1 or fewer vehicles visible in the Mile 68 viewshed.

Indicator	Standard		
	Wildlife Viewing Subzone 1	Wildlife Viewing Subzone 2	Wildlife Viewing Subzone 3
Number of vehicles in a viewscape (continued)	At least 95% of the time during bus operating hours, there will be 4 or fewer vehicles visible in the Mile 26 viewshed. No one year will have less than 90% of the time during bus operating hours having 4 or fewer vehicles visible in the Mile 26 viewshed.	At least 95% of the time during bus operating hours, there will be 3 or fewer vehicles visible in the Miles 55 and 62 viewsheds. No one year will have less than 90% of the time during bus operating hours having 3 or fewer vehicles visible in the Miles 55 and 62 viewsheds.	At least 95% of the time during bus operating hours, there will be 2 or fewer vehicles visible in the Mile 68 viewshed. No one year will have less than 90% of the time during bus operating hours having 2 or fewer vehicles visible in the Mile 68 viewshed.
Number of vehicles parked at one time at			
Teklanika Rest Stop	No more than 12 buses at one time with a total of no more than 16 vehicles		
Toklat Rest Stop		No more than 11 buses at one time with a total of no more than 16 vehicles	
Eielson Visitor Center		No more than 10 buses at one time with a total of no more than 19 vehicles	
Hiker Wait Time	At least 75% of hikers will have wait times of less than 30 minutes for pick-up by a bus, averaged over 5 years.		
	No one year will have less than 70% of hikers with wait times of less than 30 minutes.		
	At least 95% of hikers will have wait times less than 60 minutes for pick-up by a bus, averaged over 5 years.		
	No one year will have less than 93% of hikers with wait times of less than 30 minutes.		
	At least 99% of hikers will have wait times of less than 90 minutes for pick-up by a bus, averaged over 5 years.		
	No one year will have less than 98% of hikers with wait times of less than 90 minutes.		

Indicator	Standard		
	Wildlife Viewing Subzone 1	Wildlife Viewing Subzone 2	Wildlife Viewing Subzone 3
Sheep Gap Spacing	<p>Milepoint 21.6 will have at least a 10 minute gap in traffic every hour with a 95% success rate (23 of 24 hours with gaps), averaged over 5 years.</p> <p>No one year will have less than a 90% success rate (22 of 24 hours).</p>	<p>Milepoints 37.6, 52.8 and 60.6 will have at least a 10 minute gap in traffic every hour with a 95% success rate (23 of 24 hours with gaps), averaged over 5 years.</p> <p>No one year will have less than a 90% success rate (22 of 24 hours).</p>	<p>Milepoint 68.5 will have at least a 10 minute gap in traffic every hour with a 95% success rate (23 of 24 hours with gaps), averaged over 5 years.</p> <p>No one year will have less than a 90% success rate (22 of 24 hours).</p>
Nighttime traffic	<p>There will be an average 3 vehicles or fewer per hour (total westbound and eastbound) passing any of the traffic counters west of Savage between 10 pm and 6 am, with never more than 6 vehicles in any one hour. This limit will undergo further analysis to ensure it does not impact wildlife sightings the following morning and will be lowered if an impact is detected.</p>		
Large vehicles	<p>There will be no more than 4 vehicles (total westbound and eastbound) larger than 80,000 lbs gross vehicle weight rating (GVWR) in any one hour passing any of the traffic counters west of Savage. This limit will undergo further analysis to ensure it does not impact wildlife sightings the following morning and will be lowered if an impact is detected. These limits will undergo further analysis to ensure they do not impact wildlife sightings the following morning and will be lowered if an impact is detected.</p>		

Notes:

To accommodate unique circumstances, all standards (except those associated with BACI indicators) consider a desired success rate that would allow for a small percentage of violations before management action is taken.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

Other alternatives and actions to address vehicle management within the park were discussed based on the results of internal and external scoping. However, these options were dismissed from further consideration for one or more of the following reasons, as described below:

- Their inability to meet the purpose of and need for the project, and support the planning goals and objectives.
- Lack of a direct connection to the protection of park resources and enhancement of visitor experiences
- Having more adverse impacts than other alternatives being considered
- Technical or economic infeasibility

TRANSIT ONLY

The goal of this alternative would be to emphasize transit, thus providing increased access to wilderness recreation opportunities, one of the park's fundamental resources and values. By providing transportation on the Park Road only on transit buses, all visitors would be encouraged to get on and off the bus, maximizing their freedom to interact with and discover park resources. Minimal interpretation would be provided, encouraging independent learning opportunities.

Maintaining transit access is a critical component to the Denali transportation system. However, many visitors come to Denali because guided tours are offered along the Park Road. The tours provide a high level of education and support services, which is appealing to a large segment of the visiting public. In addition, facilitated access to the park's wilderness resources is desirable by many, particularly those who may have limited outdoor skills or mobility.

Denali is considered one of the most accessible of Alaska's national parks in large part because of these tour opportunities.

By excluding tour opportunities in a "transit only" alternative, some visitors' needs would not be met, and it is likely that some portion of future, potential visitors to Denali would be displaced. Those who do visit would have limited options for tailoring a trip on the Park Road to meet their particular needs. Further, the level of educational opportunities available along the Park Road would be significantly reduced. Finally, the current tour operations subsidize the transit system (pers. comm. with Denali National Park Commercial Services Division). If tours were eliminated, these subsidies would be eliminated as well, compromising the ability to sustain transit operations without subsidies from another source.

This alternative was dismissed prior to full analysis because it would not meet the purpose and need for this planning effort. In particular, this alternative would not meet several of the planning objectives, including providing opportunities for the full range of park visitors, allowing visitors to easily choose the experience that meets their needs, and providing an affordable and financially sustainable transportation system.

ALL SERVICES ON ONE BUS

The goal of this alternative would be to combine services on one bus and promote greater choice in scheduling. It would necessitate that all visitors traveling the Park Road ride a bus on which a premium tour is conducted by a trained interpreter. This alternative would provide two distinct services (premium tour and transit) on one bus with services reaching Teklanika, Toklat,

Eielson, Wonder Lake, and Kantishna. Space for transit riders would be reserved on every bus. Affordability would be maintained through a differential pricing structure based on when a ticket was purchased and the destination.

The benefits of this alternative include more scheduling choices for visitors and increased efficiency of the transportation system. Further, it would ensure that all visitors receive interpretation, and that visitors to Kantishna would have equal bus access. However, this alternative was not well received during public review of the preliminary management concepts. Several commented that it penalized those visitors who plan ahead, since the differential pricing structure was based on when the ticket was purchased, as well as the location served. Many visitors could postpone confirming reservations in order to secure a lower-priced seat, complicating trip planning and system operations.

The public also expressed concerns about potential conflicts between tour and transit riders when combined on the same bus. In particular, stopping frequently to pick up transit passengers, and making room for hiking and camping gear, may detract from tour riders' experiences. The potential reduction in seating availability to pick up transit riders and boarding a fuller bus oriented towards educational opportunities may detract from transit riders' experiences. Because this alternative would not enhance visitor experience along the Park Road, and could even degrade it, this alternative would not meet the purpose and need for this planning effort, and was dismissed from further analysis.

AN ADAPTIVE MANAGEMENT FRAMEWORK INTEGRATED WITH CURRENT VEHICLE USE LIMITS

The goal of this alternative would be to integrate an adaptive management framework, using indicators and standards, with the park's existing use limit for vehicles on the Park Road. This alternative would continue current management strategies of limiting the number of vehicles based on the 1986 general management plan, which established an allowable seasonal limit of 10,512 vehicles on the Park Road. In addition, indicators and standards related to the park's physical, biological, and social environment would be used to help managers adjust the transportation system operations within the 10,512 vehicle limit.

The purpose of the adaptive management approach is to effectively protect resources and provide high quality visitor experiences through informed, proactive, and transparent management. Through the use of science, monitoring, and modeling techniques, park managers have the flexibility to adjust operations in response to observed resource protection or visitor use issues.

The value of this approach would be the ability to greatly improve the expected performance of the managed system by reducing uncertainty about possible influences to resources and visitor experiences. Managing the permitted volume of vehicles on the Park Road, based on an understanding of current and desired conditions, is an important part of this adaptive management approach, along with other strategies such as managing the frequency, timing, and type of vehicles.

Although the adaptive management approach would include managing the permitted volume of vehicles, the current limit of 10,512 vehicles per season is not directly tied to desired conditions, or an expanded understanding of the impacts of traffic volume and traffic patterns on the park's physical, biological, and social environment. Continued adherence to this

existing vehicle limit reduces the ability of park managers to fully enhance performance of the park's transportation system, to protect resources, and to provide high quality experiences. As a result, although the concept of adaptive management was carried forward in the plan as part of the action alternatives, the alternative that combined adaptive management with the park's existing use limit for vehicles on the Park Road was dismissed prior to full analysis.

OTHER ALTERNATIVE ELEMENTS

Key elements from the "Experience Key Park Destinations" and "Diversity of Opportunities" concepts presented in the early 2010 planning workbook were incorporated into the current action alternatives. Therefore, these alternatives were dismissed as stand-alone alternatives.

During public scoping, comments were received indicating the National Park Service should return to a free shuttle bus system. However, NPS transportation

systems need to support themselves, so collectively, the shuttle and tours must be financially sustainable (pers. comm. with Denali National Park Commercial Services Division). Currently, the tours subsidize the transit system, and to keep tour prices reasonable and contribute to sustainability of the overall system, a fee is assessed for use of the shuttles. Therefore, this alternative element was not considered further.

Other elements of alternatives discussed during public scoping (e.g., fuel efficiency, comfort, quieter buses, family-friendly opportunities, flexibility, better access to information about visitor opportunities) are all addressed as elements common to both action alternatives, and would be pursued through the concessions prospectus.

Management of vehicles during the shoulder season and winter use of the road were not considered because they are outside of the scope of this draft plan/EIS, which pertains to management during the peak season (i.e., May through September).

CONSISTENCY OF THE ALTERNATIVES WITH THE PURPOSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) requires an analysis of how each alternative meets or achieves the purposes of the act, as stated in section 101(b). Each alternative analyzed in a NEPA document must be assessed as to how it meets the following purposes:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Council on Environmental Quality has promulgated regulations for federal agencies' implementation of the National Environmental Policy Act (40 CFR Parts 1500–1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the

United States in accordance with the policies set forth in the act (sections 101(b) and 102(1)); therefore, other acts and NPS policies are referenced as applicable in the following discussion.

Criterion #1. Fulfill the Responsibilities of Each Generation as Trustee of the Environment for Succeeding Generations

All alternatives considered in this plan/environmental impact statement, including the no-action alternative (alternative A), must comply with NPS laws and policies (e.g., the Organic Act of 1916, *Management Policies 2006*) that require the agency to manage parks by such means and in such a manner “that will leave them unimpaired for the enjoyment of future generations.” Other laws also apply at Denali National Park that require management of wilderness to ensure resources are protected for future generations, including the Wilderness Act.

The Wilderness Act, states that it is “...declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness.”

Each alternative meets this criterion, although adaptive management per scientifically based indicators and standards under alternatives B and C would likely enhance the National Park Service's ability to meet this criterion.

Criterion #2. Assure for All Americans Safe, Healthful, Productive, and Esthetically and Culturally Pleasing Surroundings

Adherence to road design and maintenance standards, required under all alternatives, would assure safe conditions along the Park Road, while protecting the historic features of the road. These standards would also ensure the experience along the road is esthetically and culturally pleasing. The requirement that all bus drivers, including inholder lodge drivers, have the same level of safety training for driving the Park Road under alternatives B and C would likely enhance the National Park Service's ability to meet this criterion when compared to alternative A. Also, the management of user capacity and implementation of an adaptive management program under the action alternatives would increase the ability of the National Park Service to ensure natural resources are protected and visitor satisfaction is maintained, further assuring healthful and esthetically pleasing surrounding.

Criterion #3. Attain the Widest Range of Beneficial Uses of the Environment without Degradation, Risk of Health or Safety, or Other Undesirable and Unintended Consequences

All three alternatives would attain a wide range of visitor uses along the Park Road, from access to wilderness recreational opportunities to guided tour experiences. As described for criterion #2, adherence to road design and maintenance standards would ensure all alternatives provide for the safety of visitors, while protecting the historic character of the Park Road, including protection from undesirable and unintended consequences. When compared to alternative A, the management of user capacity and the adaptive management program under alternatives B and C would provide managers with the flexibility to better

ensure that visitor activities along the Park Road would occur without degradation of natural resources, and would minimize undesirable and unintended consequences for visitor satisfaction.

Criterion #4. Preserve Important Historic, Cultural, and Natural Aspects of Our National Heritage and Maintain, Wherever Possible, an Environment that Supports Diversity and Variety of Individual Choice

Adherence to applicable laws and policies, as described for criteria 1 and 2, would ensure that all alternatives preserve the historic and cultural aspects of the Park Road, as well the natural resources along the Park Road. By managing user capacity and implementing an adaptive management program, alternatives B and C would provide flexibility to better preserve these resources when compared to alternative A. Although all alternatives provide a variety of individual choices, from access to wilderness recreational opportunities to guided tour experiences, alternatives B and C better support diversity and variety of individual choice by optimizing visitor access and maximizing visitor opportunities, respectively.

Criterion #5. Achieve a Balance Between Population and Resource Use that Will Permit High Standards of Living and a Wide Sharing of Life's Amenities

Although all three alternatives would provide opportunities to experience the wilderness of Denali National Park while protecting park resources and values, alternative B would provide the most opportunity for a variety of users to access the park. The management of user capacity and the adaptive management program under alternatives B and C would better ensure a balance is achieved when compared to alternative A, by providing managers with the flexibility to adjust the transportation system as necessary to meet desired conditions.

Criterion #6. Enhance the Quality of Renewable Resources and Approach the Maximum Attainable Recycling of Depletable Resources

This criterion is not applicable to this draft plan for management of vehicles along the Park Road at Denali National Park and Preserve.