Chapter Two: Description of Alternatives

Overview

This section describes two action alternatives and a no-action alternative for expanding recreational opportunities in the South Denali region. Matrices at the end of this section summarize these actions by topic and alternative. Maps at the end of this chapter provide general guidance for the location of proposed facilities. Photos at the end of this chapter show the views from both proposed development sites. Sizes and locations of proposed facilities are approximate. If an action alternative is selected, the exact size of the facility and specific design standards would be developed during the design phase.

Throughout this document, the term "agencies" refers to those entities that have entered into a formal partnership to write this *South Denali Implementation Plan and EIS*: State of Alaska, Matanuska-Susitna Borough, and National Park Service. The term "agency land" refers to land managed by the aforementioned agencies.

ALTERNATIVE A - NO ACTION

Under Alternative A, no new actions would be implemented to support the 1997 Record of Decision for the *South Side Denali Development Concept Plan* except for those projects already approved and initiated. This alternative represents no change from current management direction and therefore represents the existing condition in the South Denali region. However, it does not ensure a similar future condition which could be affected by factors unrelated to this planning effort.

General Actions

In this alternative there would be no approved plan for local, state, and federal agencies to cooperatively improve and increase recreational opportunities and access to the South Denali region. Instead, new facilities and opportunities would be developed at the discretion of the land managing agency with less coordination with other affected agencies. There would be fewer resources available for comprehensive planning to address resource protection in the South Denali planning area. Furthermore, there would be no plan that would commit agencies to preserving quality of life values in the rural South Denali communities. Issues of concern (trespass, vandalism, access, development, etc.) would be addressed separately by land management agencies within the constraints of jurisdictional boundaries and financial resources. Cooperative efforts between agencies would still continue on a case-by-case-basis as issues arose, but in the absence of a comprehensive planning process and with fewer resources.

Visitor Facilities

New visitor facilities such as campgrounds, picnic shelters, or pullouts with interpretive signage would be constructed at the discretion of the Matanauska-Susitna Borough or the State of Alaska as funds become available.

Trail Systems

Under this alternative, there would be fewer resources to construct or improve trail systems in the planning area or initiate trail planning efforts to improve trail or waterway access to Denali State Park or Denali National Park and Preserve.

Implementation of the 2000 *Matanuska-Susitna Trails Master Plan* would occur at the discretion of the Matanuska-Susitna Borough in cooperation with the State of Alaska where the plan applies to State lands, and with fewer resources to design and construct the trails.

Petersville Road Enhancements

Under this alternative, there would be fewer resources to implement the Matanuska-Susitna Borough's *Petersville Road Corridor Management Plan*, in total or in segments, at its discretion but still in cooperation with the State of Alaska.

ACTIONS COMMON TO ALL ACTION ALTERNATIVES

Figure 2-1 provides an overview of the planning area. The following actions would occur under either of the action alternatives.

All proposed facilities, excluding parking areas (and associated trash and human waste facilities), turnouts and trails, would be located outside the Alaska Department of Transportation and Public Facilities (DOTPF) right-of-way. All facilities within the right-of-way would require DOTPF authorization. Additionally, all proposed facilities would comply with current agency agreements, regulations, and ordinances.

The descriptions of many of these proposals are conceptual. The actual location of a facility could change after a thorough site investigation is conducted. Some items could require additional environmental compliance before construction.

Enhance Trail System

- The agencies would cooperatively implement those sections (approved as of December 2004) in the 2000 *Matanuska-Susitna Trails Master Plan* that pertain to the project planning area. Specific actions include:

1) Seek dedicated trail easements and construct a primitive trail for the regionally significant Chulitna Bluff/Rabideux/106 Seismic Winter Trail System. This would allow for the continuation of a north/south corridor on the east side of the Parks Highway, and a route to access recreational areas to the west that does not include use of the Petersville Road. Please refer to the 2000 *Matanuska-Susitna Trails Master Plan*, specifically Maps 4, 5, and 7, which show the locations of these trails.

2) Improve parking area and wayside at MP 121.5 on the east side of the Parks Highway to accommodate up to 50 vehicles with trailers. Install toilet facilities and interpretive and educational signage. Most improvements could be made within the existing footprint.

   The current parking area has fourteen 12 by 53 foot spaces. The new parking area would have up to thirty-six 12 by 53 foot pull-through spaces and vehicle circulation (1.5 ac), and up to twenty-four 12 by 35 foot head-in parking spaces (0.4 ac and use existing circulation). Trails, pedestrian amenities, interpretive facilities, toilets, and picnic pads would require 0.5 acres. The parking area would be expanded in phases depending on the availability of funds and demand for parking as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct result of expanding this lot, the size of the lot would not be increased until resource damage and conflicts are mitigated. See Figure 2-2: MP 121.5 and MP 122 Parking Areas for detailed information.

3) Construct a parking area near MP 122 on the west side of the Parks Highway to accommodate up to 50 vehicles with trailers and install toilet facilities. This parking area would have up to thirty-six 12 by 53 foot pull-through spaces and vehicle circulation (1.5 ac) and up to twenty-four 12 by 35 foot head-in parking spaces (0.4 ac). A short connector trail (approximately 0.1 miles) would be constructed from the parking lot to the East-West Express Trail. The parking area would be expanded in phases depending on the availability of funds and demand for parking as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct result of expanding this lot, the size of the lot would not be increased until resource damage and conflicts are mitigated. See Figure 2-2: MP 121.5 and MP 122 Parking Areas for detailed information.

4) Construct a parking area on the west side of the Parks Highway at Rabideux Creek that is screened from the highway and would accommodate up to 50 vehicles, and provide toilet facilities, trash receptacles, and interpretive/educational signage for year round recreational opportunities. The parking area would require 6 acres to accommodate fifty 12 by 53 foot spaces and vehicle circulation. The parking area would be expanded in phases depending on availability of funds and demand for parking as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct

result of expanding this lot, the size of the lot would not be increased until resource damage and conflicts are mitigated. See Figure 2-3: Rabideux Creek Parking Area for detailed information.

5) Provide safer access to trail systems and parking areas by installing crossing signs near MP 122 of the Parks Highway.

6) Construct an informational kiosk near the Parks Highway/Petersville Road intersection to safely route trail users across the roadway and to provide information to the South Denali region visitor.

7) Add signs along the legally dedicated portions of the trail system in the planning area for user safety (signs would include orientation and mileage information). Seasonal signage would be provided for winter-only trails, and permanent signage would be installed along trails that are used year-round.

- The agencies would provide local groups with technical assistance in securing funds for marking and grooming winter trails in the South Denali region and grooming Petersville Road from Kroto Creek to the Forks Roadhouse.

Provide Other Recreational Opportunities

- Agencies would create access from the Parks Highway to the Chulitna River downstream of the mouth of Troublesome Creek for rafts, kayaks, and other small non-motorized watercraft.

- Agencies would determine the feasibility of a docking facility on the west side of the Chulitna River near MP 121.5 of the Parks Highway.

- Agencies would create a map showing recreational opportunities on public lands west of Petersville Canyon.

Protect Scenic Qualities

- If local communities request assistance in securing the state and federal Scenic Highway designation for the Parks Highway between MP 105-132, the agencies would provide technical support and facilitation for the process.

- The agencies would work cooperatively to create a contiguous scenic buffer on agency held lands adjacent to the Parks Highway from MP 105 - MP 132 for the purpose of protecting the scenic and natural aspects of the highway corridor. The scenic buffer would provide reasonable access to public and private lands, and allow for appropriate uses consistent with the intent of the buffer. Additionally, the agencies would cooperate in developing context-sensitive design standards that would apply to appropriate agency held lands adjacent to the scenic buffer.

- The Matanuska-Susitna Borough would work with the local communities to establish land use controls for private lands along the Parks Highway as necessary.

- The Alaska Department of Natural Resources would work with the Matanuska-Susitna Borough, which is the local government with local authority to zone, to update the current Special Land Use District for Denali State Park to include controls such as specific setback and design standards, building height restrictions, vegetative buffer requirements and requirements for the use of wildlife-proof garbage storage containers.

- In partnership with the local communities, the agencies would seek appropriate methods to retain the scenic and natural qualities of the Petersville Road.

Petersville Road Enhancements

- A campground would be developed near MP 18.6 (Forks Roadhouse) that would accommodate tent and RV camping with a vegetative buffer separating the two types of camping. The campground would include restrooms, a camp host site, up to 20 tent sites and up to 20 RV sites, for a total site requirement of approximately 16 acres. The campground could be privately operated. This area could also be used for parking in winter if the Petersville Road is plowed to the Forks. The campground could be built in phases depending on availability of funds and demand, as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct result of this campground, the campground would not be expanded until resource damage and conflicts are mitigated. Note that the drawing shown in Figure 2-4: Forks Campground is conceptual. The actual location of the campground could change after a thorough site investigation is conducted. This project could require additional environmental compliance before construction.

- As adopted by the Matanuska-Susitna Borough in 1998, the following road improvements in the *Petersville Road Corridor Management Plan* were identified as community and land owner priorities in the *2003 Petersville Road Corridor Management Plan Survey*.

    1) A pedestrian/bike path would be constructed from MP 0 to MP 7 on the north side of Petersville Road. The path would be paved, 10 feet wide, and would be closer to the Petersville Road where it crosses driveways.

    2) The DOT&PF would evaluate the need for a 45 mile-per-hour speed zone on the Parks Highway approximately 2,000 feet north and south of the intersection with the Petersville Road.

    3) Agencies would determine the feasibility of left-hand and right-hand turning lanes at the Petersville Road/Parks Highway intersection.

4) Turnouts would be developed at MP 12.8 and MP 16.3 on the north side of Petersville Road with interpretive panels that highlight the intrinsic qualities of the area. MP 12.8 turnout parking area would accommodate up to 30 vehicles with trailers and up to 10 vehicles without trailers. It would require about 4 acres. MP 16.3 turnout parking area would accommodate 10 vehicles and would require 0.4 acres. See Figure 2-5: MP 12.8 Turnout and Figure 2-6: MP 16.3 Turnout for detailed information.

5) The Kroto Creek parking lot would be redesigned on its existing footprint to safely accommodate more vehicles for year-round use. Interpretive signage would be installed to provide information on safety, trails, private property, and responsible use of the area. A ramp would be installed to facilitate loading and unloading snowmobiles. All developments would occur on the existing footprint.

ALTERNATIVE B - PETERS HILLS

Figure 2-7: Peters Hills Overview Map shows all developments and facilities proposed under this alternative. The descriptions of many of these proposals are conceptual. The actual location of a facility could change after a thorough site investigation is conducted. Some items could require additional environmental compliance before construction.

General Concept

This destination facility would capture package tourism, the independent traveler, local school groups, and Alaskan travelers. The vision is for a high quality facility that offers a range of opportunities for learning and recreating. It would provide visitors of various abilities a chance to experience a subarctic tundra environment and opportunities to view Mount McKinley and the Alaska Range.

The facility could engage visitors for an hour, half-day, or most of a day. Diverse activities (such as interpretation of natural and cultural resources, viewing Mount McKinley, short walks, long hikes, educational programs, hands-on exhibits) and information about regional recreational opportunities, safety, and emergency assistance would be provided to accommodate diverse visitor interests and backgrounds. The facility would be closed in winter.

In this alternative Petersville Road would become an integral part of the visitor experience. Conceptually, visitor attractions could be offered every 20 minutes along the road corridor. Visitor amenities could include scenic pullouts with interpretive signage and toilets, opportunities for recreational gold panning and historical walking tours, opportunities for mountain bike rentals with easy access to trails, and easy access to boating and fishing opportunities on Moose Creek.

Upgrading and widening Petersville Road between MP 9.3 and 28 is a connected action that would be necessary to implement this alternative. Impacts from this action are not evaluated in this plan. Due to wetlands and land ownership issues, additional compliance would be needed to upgrade and widen Petersville Road from MP 9.3 (where the pavement currently ends) to the junction with the access road (MP 28).

Nature Center

A new nature center would be constructed on approximately 2.5 acres in the Peters Hills inside the southern boundary of Denali State Park. The total building requirement would be approximately 7,500 square feet. A facility this size could accommodate about 200 people at a time. The facility would be designed to minimize the visual impact of development on the ridge. See Figure 2-8: Peters Hills Nature Center for detailed information.

Service functions such as housing, maintenance, and storage would be located at the parking area (see description below). The feasibility of water wells would be investigated; however, water may be hauled to the site. It is also likely that the site would not support a traditional septic system so vaulted toilets or porta-johns would be designed into the facility. Generators, fuel tanks, and maintenance buildings would be designed into the visitor facility. Alternative energy sources (solar, wind) would be used to the extent feasible.

Busses would unload, load, and depart. Five parking spaces would be provided for ranger vehicles or to accommodate private vehicles in the off-season.

Visitor Contact	3500 sf*
Exhibits	1600 sf
Bus Shelter	800 sf
Restrooms	800 sf
Generator building	800 sf

Total building requirement (approximate)	**7500 sf**

* square feet

Site required (for buildings, pedestrian circulation, decks)	1.5 ac**
Bus Turnaround, 200 feet by 150 feet	0.7 ac
Ranger Parking/circulation	0.1 ac
Water storage	0.2 ac

Total site requirement (approximate)	**2.5 ac**

** acres

Parking Area

A paved parking area would be constructed on general state land near the junction of Petersville Road and the proposed access road (MP 28 of Petersville Road) to accommodate private vehicles (tour bus, RV, automobile). Lot size would not exceed the space necessary to accommodate 160 automobiles and 64 busses or RVs. A well would be drilled for water and a septic system would be installed. See Figure 2-9: Peters Hills Parking Area for detailed information.

The following facilities would be constructed at the parking area.

Bus Shelter	1000 sf
Office/visitor contact station	1500 sf
Restrooms	1000 sf
Maintenance and storage	2000 sf
Power generation building	800 sf
Ranger quarters	1000 sf

Total building requirements (approximate)	**7300 sf**
Site required, maintenance and operations	2.7 ac
Parking/circulation for autos	1.9 ac
Parking/circulation for 20 busses (12 feet by 45 feet) and 44 RVs (12 feet by 35 to 53 feet)	4.1 ac
Septic drainfield, water, treatment systems	0.5 ac

Total site required (approximate)	**9.2 ac**

The office would serve as a contact station and would have static displays and information that visitors could read while waiting for the shuttle. Information would be provided on natural resources, trails and other recreational opportunities in the South Denali region, safety, and Leave No Trace principles. During the busiest part of the season a park volunteer could assist visitors with questions.

Access Road

An access road approximately seven miles in length would be constructed from MP 28 of Petersville Road to the nature center (the road would primarily be on general state land). Private vehicles would park in the parking area and passengers would take a shuttle bus up to the nature center. The access road would be designed for low volume, low speed traffic (20-25mph), with narrow lanes and tight corners as required to fit the mountainous terrain with minimal cut and fill. Wide spots could be provided for brief viewing stops. The road would be paved but low profile, with gravel shoulders.

The access road would have 9 foot lanes and 1 foot shoulders for a 20 foot top. It could be expanded to a 24 foot top for more safety but 20 feet is the minimum. Grades would

generally be below 8% but could go as high as 16% if needed. Two bridges would be constructed along the access road (200-foot and 100-foot spans).

Overall length new construction	7 miles
Average daily traffic (10 busses/hour x 12 hrs)	120
Design speed	20 mph
Maximum gradient	16% (preferred: 8%)
Minimum radius	125 feet
Width of traveled way	18 feet
Width of shoulder	2 feet

Trail Systems

The hub and spoke concept would provide the general vision for trail systems in the South Denali region: the main parking area and information center at Byers Lake would serve as the transportation and information hub, with access to trails and rivers occurring at strategic locations. All trails are conceptual and would require additional site investigations to determine exact locations, tread widths, brushing distances, and trail lengths. Estimated tread widths, brushing distances, and trail lengths are listed below to strengthen the impacts analysis in Chapter Four. Actual widths and lengths would depend on vegetation, topography, projected volume of use, and purpose. Tread widths would likely be wider closer to facilities and narrower further from the nature center. Tread widths would likely be less than those listed below, except for the trail listed as ADA accessible.

Approximately 31 miles of pedestrian trails would be constructed in the vicinity of the new nature center. Most of the trails would be constructed in Denali State Park, though some trails would be constructed on general state land. Trails would be unpaved.

- A 15-mile hiking trail would be constructed from Petersville Road (at the gravel pit at MP 30.5) to the Tokositna River and Home Lake. It would also connect to the Long Point loop trail. (Tread width would be 2 feet, with brush cleared 3 feet both sides of trail.) See Trail A on Peters Hills Overview Map (Figure 2-7).
- A 10-mile hiking trail loop would be constructed from the nature center to Long Point and back. (Tread width would be 4 feet, with no brush cleared). See Trail B on Peters Hills Overview Map (Figure 2-7).
- A 5-mile interpretive hiking trail loop would be constructed from the access road to Four Lakes and back. (Tread width would be 6 feet, with no brush cleared). See Trail C on Peters Hills Overview Map (Figure 2-7).
- One half-mile developed (ADA accessible) interpretive loop trail would be constructed within the vicinity of the nature center. (Tread width would be 8 feet, with no brush cleared). These trails would provide a relatively short interpretive outdoor facility for visitors. See Trail E on Peters Hills Overview Map (Figure 2-7).

Backcountry Facilities

The following backcountry facilities would be constructed.

- One 120–square-foot three-sided picnic shelter would be constructed at Long Point.
- A 16 by 20 foot public use cabin with a 6 foot covered porch would be constructed in the Peters Hills near Home Lake.

Petersville Road Enhancements

In addition to the enhancements that are described in Actions Common to All Action Alternatives, Petersville Road would be upgraded to a 24-foot wide gravel driving surface from MP 9.3 to MP 18.6 to support the developments proposed in this alternative. (NOTE: An additional upgrade to Petersville Road from MP 9.3 to MP 28 would be necessary to implement this alternative. This would be a more extensive upgrade and would require an additional EIS to evaluate impacts.)

ALTERNATIVE C – PARKS HIGHWAY (Preferred Alternative)

Figure 2-10: Parks Highway Overview Map shows all developments and facilities proposed under this alternative. The descriptions of many of these proposals are conceptual. The actual location of a facility could change after a thorough site investigation is conducted. Some items could require additional environmental compliance before construction.

General Concept

This destination facility would capture package tourism, the independent traveler, local school groups, and Alaskan travelers. The vision is for a high quality facility that offers a range of opportunities for learning and recreating. It would provide visitors of various abilities a chance to experience alpine and subarctic tundra environments and opportunities to view Mount McKinley and the Alaska Range.

The visitor center and trail system could engage visitors for an hour, half-day, or all day long. Diverse opportunities (such as interpretation of natural and cultural resources, viewing Mount McKinley, short walks, long hikes, educational programs, hands-on exhibits, viewing films) and information about regional recreational opportunities, safety, and emergency assistance would be provided to accommodate diverse visitor interests and backgrounds. Opportunities for winter activities would be provided, though not necessarily at the same scale as in summer.

Visitor Center

A new visitor complex would be constructed on approximately 4.1 acres at the highway site in Denali State Park. The total building requirement would be approximately 16,000 square feet. A facility this size could accommodate up to 300-400 people at a time. See Figure 2-11: Parks Highway Visitor Center for detailed information.

The visitor center would be designed to facilitate park visitors' connection with and understanding of the landscape and natural resources. To the extent practicable, development would be hidden and blended into the landscape. Portions of the visitor center could remain open during winter. Agencies would limit development to facilities that would be necessary to provide a quality setting for visitors.

Service functions such as housing, maintenance, and storage would be located at the parking area (see description below). A well would be drilled and wastewater system installed at the site. Generators, fuel tanks, and maintenance buildings would be located at the parking area. Alternative energy sources (solar, wind) would be used to the extent feasible.

Traffic patterns at the visitor center would allow busses to unload, load, and depart. Six parking spaces would be provided for ranger vehicles or to accommodate private vehicles in the off-season.

Visitor contact	5000 sf
Theater	2400 sf
Exhibits	2400 sf
Food service	2400 sf
Bus shelter	1500 sf
Restrooms	1500 sf
Building for generator	800 sf

Total building requirement (approximate)	**16000 sf**
Site required (for buildings, pedestrian circulation)	2.8 ac
Bus turnaround, 200 feet by 150 feet	0.7 ac
Ranger parking/circulation	0.1 ac
Septic drainfield	0.5 ac

Total site requirement (approximate)	**4.1 ac**

Parking Area

A paved parking area would be constructed in Denali State Park on the natural bench across from the Denali View South Wayside near Parks Highway MP 134.6. Lot size would not exceed the space necessary to accommodate 300 automobiles and 150 busses or RVs. A water well would be drilled and a wastewater system would be installed. See Figure 2-12: Parks Highway Parking Area and Campground for detailed information.

The office located in the parking area would also serve as a contact station and would have static displays and information that visitors could read while waiting for the busses. Information would be provided on natural resources, trails, recreational opportunities in the South Denali region, safety, and Leave No Trace principles. The contact station would serve as a shuttle transfer site in summer and would accommodate winter visitation. Staffing would depend upon visitation levels.

Potential would exist to include other shuttle bus stop locations in the state park in order to better serve visitors and to reduce the size of the parking lot. The shuttle busses could pick up passengers from nearby sites including Byers Lake campground, Denali View South wayside, Mary's McKinley View Lodge, and the Mt. McKinley Princess.

The following facilities would be constructed at the parking area.

Bus shelter, for 150 people	1500 sf
Office/visitor contact station	2200 sf
Restrooms	1500 sf
Maintenance and storage	2000 sf
Power generation building	800 sf
Ranger quarters	1000 sf
Total building requirements (approximate)	**9000 sf**
Site required, maintenance, operations	3.6 ac
Parking/circulation for autos	5.0 ac
Parking/circulation for 30 busses (12 feet by 45 feet) and 120 RVs (12 feet by 35 to 53 feet)	8.0 ac
Septic drainfield	0.5 ac
Total site required (approximate)	**17.1 ac**

Access Road

An approximately 3.5 mile long access road would be constructed from the parking area to the visitor center. During busy times of the day, private vehicles would park in the parking area and passengers would take a shuttle bus up to the visitor center. The access road would be designed for low volume, low speed traffic (20-25mph), with narrow lanes and tight corners as required to fit the mountainous terrain with minimal cut and fill. Wide spots could be provided for brief viewing stops. The road would be paved but low profile, with gravel shoulders.

The access road would have 9 foot lanes and 1 foot shoulders for a 20 foot top. It could be expanded to a 24 foot top for more safety but 20 feet is the minimum. Grades would generally be below 8% but could go as high as 16% if needed.

Overall length of new construction	3.5 miles
Average daily traffic (10 busses/hour x 12 hrs)	120
Design speed	20 mph
Maximum gradient	16% (preferred: 8%)
Minimum radius	125 feet
Width of traveled way	18 feet
Width of shoulder	2 feet

Campground

A campground would be constructed in Denali State Park adjacent to the proposed parking lot at MP 134.6 of the Parks Highway. The campground would include restrooms, a camp host site, up to 50 tent sites and up to 50 RV sites, for a total site requirement of approximately 19 acres. The campground could be built in phases depending on availability of funds and demand, as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct result of this campground, the campground would not be expanded until resource damage and conflicts are mitigated. See Figure 2-12: Parks Highway Parking Area and Campground for detailed information. The campground could be privately operated.

Trail Systems

The hub and spoke concept would provide the general vision for trail systems in the South Denali region: the main parking area at the highway site at MP 134.6 would serve as the transportation and information hub, with access to trails and rivers occurring at strategic locations. All trails are conceptual and would require additional site investigations to determine exact locations, tread widths, brushing distances, and trail lengths. Estimated tread widths, brushing distances, and trail lengths are listed below to strengthen the impacts analysis in Chapter Four. Actual widths and lengths would depend on vegetation, topography, projected volume of use, and purpose. Tread widths would likely be wider closer to facilities and narrower further from the visitor center. Tread widths would likely be less than those listed below, except for the trail listed as ADA accessible.

Approximately 13 miles of pedestrian trails would be constructed in Denali State Park in the vicinity of the new visitor center. Trails would be unpaved.

- A 4-mile interpretive hiking trail (tread width would be 4 feet; brushed 8 feet on both sides) would be constructed from the parking area at MP 134.6 of the Parks Highway to the visitor center. This trail would be removed from the access road corridor. There would be 2-3 pullouts/bus stops/trailheads along the access road, and loop trails would be constructed from one pullout and return to a second one. See Trail A on Figure 2-10 for more information.
- One half-mile developed (ADA accessible) interpretive trail loop would be constructed from the visitor center to the alpine area (tread width would be 8 feet;

brushed 4 feet on both sides). This trail would provide a relatively short interpretive trail for visitors. See Trail B on Figure 2-10 for more information.

- A 3-mile hiking trail would connect the visitor center with the Curry and Kesugi Ridge Trail systems (tread width would be 2 feet; brushed 4 feet on each side). See Trail C on Figure 2-10 for more information.
- A 5-mile easy interpretive loop trail would be constructed from the visitor center to Lake 1787 and around the lake (tread width would be 4 feet; brushed 6 feet on both sides). This trail would also connect to the access road. See Trail D on Figure 2-10 for more information.
- A trail from the visitor center to private property in the area could be constructed to protect natural resources and enhance recreational opportunities on Curry Ridge.
- The summer hiking trails near the visitor center could be maintained in winter for Nordic skiing.
- In Denali State Park, winter trails would be developed and select trails would be improved for winter use. Winter uses of the park in some areas could be separated or restricted to minimize conflicts between user groups and protect park resources.

Petersville Road Enhancements

Enhancements that would be made to Petersville Road are described in Actions Common to All Action Alternatives.

Other Facilities

A Department of Transportation and Public Facilities limited maintenance area for equipment and materials storage would be constructed near Byers Creek to create efficiencies for maintenance of the Parks Highway, existing State Park facilities, and the new visitor center.

ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

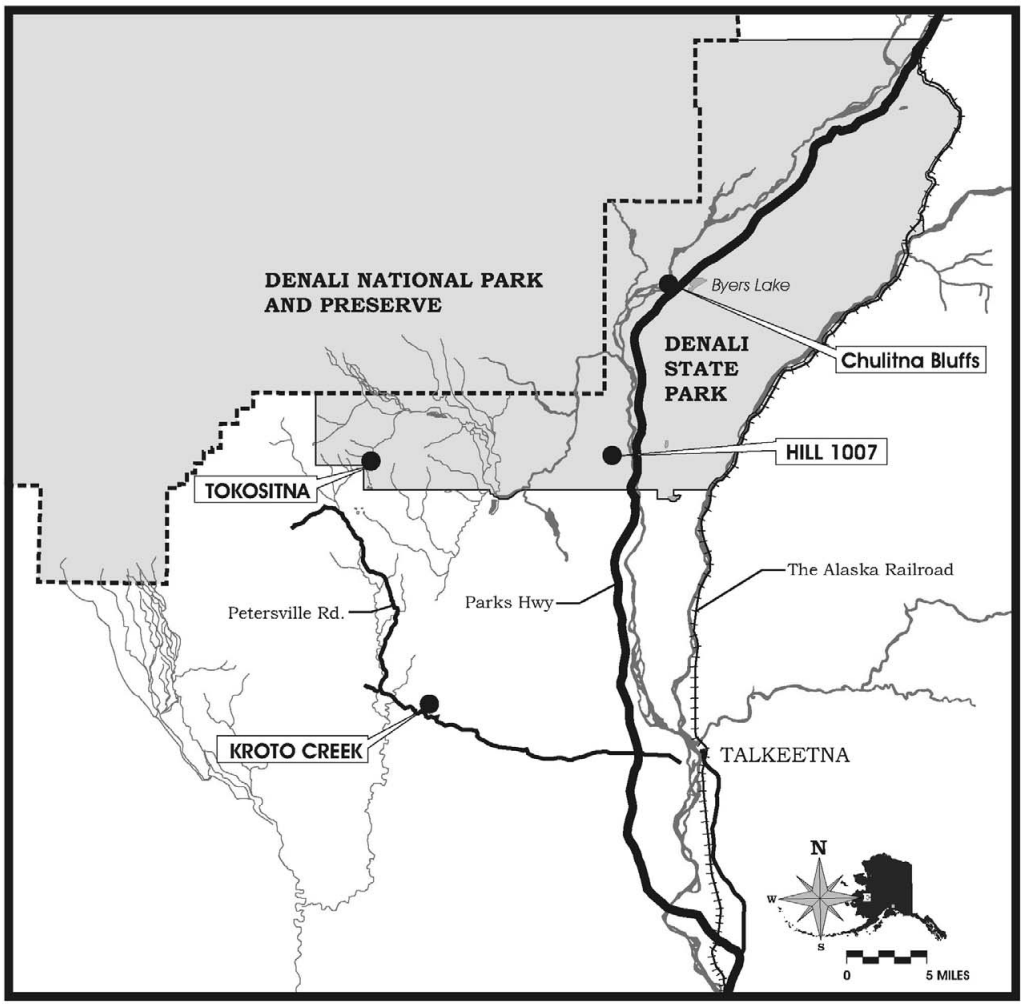

Figure 2-13: Alternatives Considered but Dismissed from Further Consideration

Facility Development at Tokositna

(See Figure 2-13: Alternatives Considered but Dismissed from Further Consideration) The time and expense that would be involved in implementing this alternative is beyond the scope of what the agencies hope to accomplish through this planning effort; that is, a project that can be implemented immediately. For example, Alaska Department of Transportation and Public Facilities estimates the cost for improving access to Tokositna at $30 million, which would be in addition to the $68 million necessary for road improvements from MP 9 to 28. Development at Tokositna would require a new DOT&PF maintenance facility along Petersville Road. Development, operation, and

maintenance costs associated with a road upgrade through Petersville Canyon and access to a remote facility at Tokositna would be higher than for a facility located closer to existing infrastructure. Mitigating impacts to wetlands, and resolving issues with mining claims in the area, would take additional time and expense.

Facility Development at Kroto Creek

(See Figure 2-13: Alternatives Considered but Dismissed) Investigation and field work by the agencies during 2003-2004 revealed that this site would not provide a quality visitor experience, nor would it enhance recreational opportunities for a wide variety of visitors including Alaskans, independent travelers, and package tour travelers due to mediocre views of the Alaska Range, and marshy, lowland areas with plentiful mosquitoes. This site would not offer new access opportunities to both the state and national parks, and could not be considered a wilderness destination. The view from the site consists of thick spruce forests, wetlands, and distant views of the Alaska Range. The site is located 13 aerial miles south of the state park and 20 aerial miles south of the national park boundary.

Facility Development at Hill 1007

(See Figure 2-13: Alternatives Considered but Dismissed) Investigation and field work by the agencies during 2003-2004 revealed that approximately 80% of the area considered for developments is too steep or too wet. Much of the remainder of the area considered for development is private property. It would be difficult to provide a quality visitor experience and trail system in the vicinity of the facility because of a shortage of high, dry ground. Spin-off development would be difficult to control because the site is located at the southern boundary of the state park and very close to private property. There are currently no restrictions on development south of the state park, and there is not enough vegetation to protect the viewshed.

Facility Development at Chulitna Bluffs

(See Figure 2-13: Alternatives Considered but Dismissed) Investigation and field work by the agencies during 2003-2004 revealed that this site does not have the characteristics necessary to provide a quality visitor experience. Less than ¾ of a mile from the highway, it cannot be considered a destination, and noise from the highway precludes the site from providing a setting for a quality visitor experience. The site cannot provide anything different than what is currently provided at the Veteran's Memorial. There is also very little room on the bluffs for trail development, and views of Mount McKinley are mediocre.

Private, Year-round Vehicular Access to the Visitor Facility

Private, year-round vehicular access to the visitor facility was considered and dismissed in favor of a shuttle system in order to minimize construction in the fragile alpine and tundra ecosystems. Constructing a parking lot at the visitor facility to accommodate

private vehicles during all hours would create major adverse impacts to the alpine and tundra environments near the proposed visitor facilities and would degrade the viewshed and the quality of the visitor experience. The access road could still be available to private vehicles during off-hours. A limited number of parking spaces would be available at the visitor facility for this purpose.

Provide Access to a Visitor Facility via Tram

This alternative was dismissed due to geographic and financial constraints of construction and operation of a tram (for example, the Portland Aerial Tram, currently under construction in an area with existing infrastructure, will be less than ¾ of a mile long and will cost $40 million). There were also concerns about the noise and visual impacts associated with an aerial tram.

Site Facilities on Native Lands

ANILCA Section 1306 calls for locating National Park Service administrative and visitor facilities on Native land in the vicinity of the NPS unit where practicable and desirable. Native lands were considered for this project but none were available within the planning area that could meet the goals of this project.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined as "the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act" (CEQ "Forty Most Asked Questions on CEQ NEPA Regulations"). Section 101 states "…it is the continuing responsibility of the federal government to...

1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

2) ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.

3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

4) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources."

Based on these criteria, the National Park Service has determined that Alternative A is the Environmentally Preferred Alternative because it causes the least adverse impact to natural and cultural resources.

PLAN IMPLEMENTATION

This section is included to emphasize the importance of coordinated implementation and to illustrate the commitments being made by the agencies, both individually and collectively. Implementation would be closely coordinated to meet state, NPS, borough, and local community needs. The partnership team would serve as an implementation and monitoring group, with substantial community involvement, to evaluate the progress of implementation activities and associated mitigation actions and to keep these functions linked. The partnership would be strongly committed to continued citizen/public meetings and other means of public involvement throughout plan implementation.

Implementation would occur under a cost-effective phasing scheme. The partners are committed to developing a feasible funding strategy, which is key to the implementation of this South Denali plan.

Appendix C describes the coordinating agency for each action item, the phasing strategy, and additional compliance requirements. Appendix D describes staffing needs for plan implementation and includes an estimated cost analysis for each alternative.

MITIGATION

This section describes measures that would be used to minimize the adverse effects of facility construction and later activities associated with use of the facilities. These measures would apply only in the case of actions taken as part of this plan; other actions taken outside of this plan or as part of other unrelated plans do not require implementation of these mitigating measures. No proposals would be implemented unless, and until, necessary mitigating measures could be taken. Unless otherwise noted, mitigating measures would apply under all development alternatives, regardless of whether the proposed actions take place on state or borough lands. These mitigation measures are general in nature; more detailed, site-specific mitigation measures would be developed during the design phase of this project.

General Considerations

During the main summer season, Alaska Department of Natural Resources would restrict vehicular access on the new access road proposed in Alternatives B and C. Vehicular access would be restricted to busses and administrative vehicles in order to minimize the effects of traffic on viewshed, wildlife, air quality, and quality of the visitor experience. During off-hours when busses aren't running and traffic is expected to be minimal, the road may be open to private vehicles. This option would provide opportunities to off-hour visitors without incurring the expense of running shuttle busses additional hours when demand is low. Current State Parks regulations would prohibit off-road vehicles on the proposed access road in Alternative C. When there is adequate snow depth to protect vegetation adjacent to and beyond the end of the road, snowmachines may be allowed on the road during the winter.

Construction would be restricted to the minimum area required. During all phases of construction a project supervisor would review the work to ensure that work methods minimize impacts on lands near the construction site and that mitigating measures written into the contract were followed.

The visitor center and other facilities would be rustic in appearance, reflecting the wild setting. While detailed design solutions would emerge through subsequent planning, solutions would consider the effects of scale, natural/rustic appearance, materials, color, texture, continuity, furniture, and other issues related to the built environment that would contribute to the visitor experience and minimize visual and natural resource impacts.

Appropriate water and energy conservation technologies, sustainable practices, and materials recycling would be incorporated into the design and construction of the proposed facilities.

The visitor facility would be designed to absorb energy from its natural surroundings to the benefit of visitors. For example, daylight could be used extensively to reduce the need for energy–consuming lighting systems. Solar panels could receive energy from the sun and convert it to electricity to assist in powering the visitor programs and non-passive building systems.

To the extent practical, the visitor facility would be constructed with sustainable building materials. For example, the roofing could be constructed of materials comprised of recycled industrial waste products, the structural members could be composed of "engineered" wood products, and finish materials (wall finishes, flooring, etc.) could be specified with rapidly renewable or recycled content materials.

Parking areas at Rabideux Creek, Parks Highway MP 121.5, Parks Highway MP 122, and campgrounds near the Forks Roadhouse and Parks Highway MP 134.6 would be expanded in phases depending on availability of funds and demand, as determined by the agencies. If unacceptable resource damage or conflicts occur as a direct result of expanding parking lots or developing campgrounds, the size of the lot or campground would not be increased further until resource damage or conflicts are mitigated.

To reduce impacts from ORV use on natural resources in the South Denali region, measures would be taken at new and expanded trailheads and parking areas (including, but not limited to, Parks Highway MP 122) to control access and use during summer. For example, these areas could be gated in the summer to discourage ORV use in areas that attract winter recreation but may not be suitable for motorized summer recreation. Minimum-impact information targeted to ORV users would be provided at all new and existing trailheads, parking areas, and pullouts in the planning area along the Parks Highway and Petersville Road (including the Forks Campground and Kroto Creek parking lot) where agency staff believe signage would be beneficial in protecting natural resources.

Physical Resources and Aquatic Resources

Best management practices (BMPs) would be used during construction to minimize potential erosion and sedimentation. Silt fences and settling ponds would be in place during construction to protect water quality. Proper siting and treatment of human waste would occur to ensure levels of nutrients entering the water are minimal. BMPs to minimize spills and leaks during pumping of sanitary facilities (checking hoses and equipment prior to pumping, ensuring connections are tight, using drip pans or absorbents at connection locations) and checking of holding tanks on a regular basis to ensure integrity would also serve to minimize spills of sanitary waste to nearby water bodies. Construction BMPs such as use of hay bales to block turbid runoff and timing to avoid construction during high flow periods and the presence of anadromous fish would lessen the magnitude of construction impacts.

Impacts to soils could be mitigated by bank and ground stabilization using geotextiles or revegetation. Additional soil testing prior to construction would be required to determine specific construction methods and BMPs.

A program to reduce dust and soil loss would be instituted, as appropriate, for excavation, grading, construction, and other dust-generating and soil-disturbing activities. This program could include (1) sprinkling unpaved construction areas with water to reduce fugitive dust emissions; (2) imposing speed limits for construction vehicles in unpaved areas; (3) covering trucks hauling dirt and debris; and (4) salvage and reuse of native soils.

Where feasible, local fill material, preferably from the original site, would be used for trail construction activities. Material excavated during trail construction would generally be used as fill in other trail segments or construction areas.

Vegetation and Wetlands

Vegetation removed during construction would be salvaged to the extent possible for use in restoring areas disturbed by construction.

A disturbed area revegetation plan would be formulated that would require the use of native species. Specifications for soil preparation, native plant/seed mixes, fertilizer, and mulching would be provided for all areas disturbed by construction activities. A monitoring plan would be developed and implemented to ensure revegetation is successful, plantings are maintained, and unsuccessful plant materials are replaced.

All facilities would be sited to avoid wetlands, or if that is not practical, to otherwise comply with Executive Order 11990 ("Protection of Wetlands") and regulations of the Clean Water Act. In areas with sensitive natural resources, such as wetlands, muskeg, or streambanks, increased caution would be exercised to protect these resources from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect these resources. Measures would be taken to keep fill material from escaping work areas especially near streams or natural drainages.

Trails would be designed and constructed concurrently with the other facilities so that social trails will be less likely to form. Fragile wetland and alpine environments must be protected; agencies could use such things as decks, boardwalks, and railings to protect these environments.

Wildlife

Agencies will adhere to the statewide timing guidelines for migratory bird nesting which are prepared by U.S. Fish and Wildlife Service. These guidelines represent time periods when vegetation clearing and other site preparation activities should be avoided. These site preparation guidelines will assist the agencies in complying with the Migratory Bird Treaty Act.

In an effort to reduce wildlife conflicts and displacement, agencies will conduct vegetation surveys and a bear habitat assessment prior to facility construction. This information would be used in the design and construction phase of this project to properly site facilities away from high conflict zones. The agencies would work together to establish a baseline monitoring program for the park to study the effects of development on park resources. The Alaska Department of Fish and Game, the agency responsible for wildlife management in the park, would be an integral part of the design and construction phase of this project to assure that the facilities are sited in such a fashion to minimize the long-term impacts of development on park resources.

Measures would be taken to reduce the potential for bear/human encounters. Visitors would be educated on the proper behavior when recreating in bear country. Wildlife education and interpretation would be provided at the visitor center, campgrounds, and all new trailheads to reduce negative wildlife-human encounters. Use of bear-proof garbage containers would continue to be required around visitor centers, picnic areas, trails, interpretive waysides, and camping facilities in Denali State Park, and use of these containers could be required on private lands within or adjacent to Denali State Park. Backcountry users would be encouraged to carry bear-resistant food containers on state park lands. Trails or trail sections may be closed temporarily or during certain seasons to

protect wildlife. As visitation increases, existing trails may be rerouted to further reduce the potential for bear/human conflicts.

To further reduce the chance of bear/human encounters, trail segments in high-density bear habitat would maximize sight distances, and brushy vegetation would be cleared from trail edges and in areas around other visitor facilities. Where linear trail sections are not appropriate (e.g., due to an area being too wet to allow for a straight route), less densely vegetated sites would be selected. Areas of highly concentrated bear use such as salmon spawning streams would be avoided.

Cultural Resources

If any previously unknown archeological remains were discovered during construction, all work would be halted in the discovery area until the significance of the finding could be determined by cultural resource staff. For state actions, project planning must comply with state statutes that prohibit the excavation, damage, and removal of archeological and historic resources located on state land without proper permits. All projects should be coordinated through the Alaska Office of History and Archeology. For borough actions**,** as a certified local government, the Matanuska-Susitna Borough would comply with local preservation ordinances and state statutes. If any proposed development would involve direct modification, preservation, or use of a structure or district on or eligible for the National Register of Historic Places, such development would be carried out according to the 1992 *Secretary of the Interior's Standards and Guidelines for Historic Preservation Projects*.

Curry Lookout would be evaluated and repaired to ensure that the building is in stable and good condition. Preparation of a building condition assessment following the Secretary of the Interior's Standards for Rehabilitation would be conducted to provide appropriate guidance for making repairs while maintaining the historic integrity. Education/interpretation efforts would focus on the structure's preservation and significance.

The Curry Ridge Trail and associated features would be evaluated for potential eligibility for listing on the National Register of Historic Places.

Monitoring

The agencies are committed to improving the long-term protection of natural and cultural resources in the South Denali region. Monitoring is an essential component of resource management because it provides information on the relative success of management strategies. Monitoring may be accomplished through formal research projects.

Monitoring could be coordinated through the Central Alaska Network Monitoring Program and follow the National Inventory and Monitoring guidelines to enhance the efficiency and usefulness of the results. The Alaska Department of Fish and Game, the agency responsible for wildlife management on state lands, would be an integral part of

the monitoring program for fish and wildlife resources on state lands. Land and wildlife management agencies would follow these general principles in implementing a monitoring program:

- Monitoring would integrate information about natural and cultural resources, including weather, air, land, water, soundscape, geoindicators, exotic plants, and other flora and fauna. These broad areas include monitoring for species listed under the Endangered Species Act; and activities subject to the Clean Water Act, Clean Air Act, and National Historic Preservation Act; and other laws, regulations, and policies.

- Monitoring would measure the impacts of actions on resources as identified in this environmental impact statement.

- Monitoring results would provide managers with the information to determine whether a goal has been met and whether to continue or to modify the management direction.

- Monitoring would be periodically evaluated to ascertain whether the monitoring questions and standards are still relevant and would be adjusted appropriately.

- Some monitoring activities and projects may be discontinued and others added as knowledge and issues change with implementation.

- Monitoring would be conducted at multiple levels and scales.

- Existing and previous monitoring activities would be considered for inclusion in this program if they provide appropriate information and employ appropriate protocols.

- The monitoring program would involve a long-term commitment to gathering and evaluating data.

- Monitoring information would be made available using tools such as Synthesis, Geographic Information Systems Theme Manager, Natural Resources Database template, and interconnected web and distributed databases.

Summary Table of Alternatives

Facility	Alternative A: No Action	Alternative B: Develop a Nature Center at Peters Hills	Alternative C: Develop a Visitor Center off the Parks Highway (Preferred Alternative)
Visitor Facility	New visitor facilities would be constructed at the discretion of the individual agencies.	A new nature center would be constructed on approximately 2.5 acres in the Peters Hills inside the southern boundary of Denali State Park. Approximately 31 miles of trails would be constructed in the vicinity of the new nature center.	A new visitor complex would be constructed on approximately 4.1 acres near the southern part of Curry Ridge. Approximately 13 miles of trails would be constructed in the vicinity of the new visitor center.
Parking	Parking areas would be constructed at the discretion of the individual agencies.	A paved parking area would be constructed near the junction of Petersville Road and the proposed access road (MP 28 of Petersville Road) to accommodate private vehicles. The lot would accommodate up to 160 automobiles and 64 busses or RVs. A well would be drilled for water and a wastewater system would be installed.	A paved parking area would be constructed on the natural bench across from the Denali View South Wayside near Parks Highway MP 134.6. The lot would accommodate up to 300 automobiles and 150 busses or RVs. A well would be drilled and a wastewater system would be installed.
Access to Visitor Facility	Access to new visitor facilities would be constructed at the discretion of the individual agencies.	An access road approximately 7 miles in length would be constructed from MP 28 of Petersville Road to the nature center. Private vehicles would park in the parking area and passengers would take a shuttle bus up to the nature center.	An access road approximately 3.5 miles in length would be constructed from the parking area to the visitor center. Private vehicles would park in the parking area and passengers would take a shuttle bus up to the visitor center.

Summary Table of Alternatives Continued

Facility	Alternative A: No Action	Alternative B: Develop a Nature Center at Peters Hills	Alternative C: Develop a Visitor Center off the Parks Highway (Preferred Alternative)
Trail Systems	The agencies would have fewer resources available to cooperatively construct or improve trail systems in the planning area. Implementation of the 2000 *Matanuska-Susitna Trails Master Plan* would be at the discretion of the individual agencies.	Agencies would seek a dedicated trail easement and construct a primitive trail for the regionally significant Chulitna Bluff/Rabideux/106 Seismic Trail System. Agencies would improve the parking area and wayside at MP 121.5 on the east side of the Parks Highway and create a new parking area on the west side of the highway near MP 122 to accommodate up to 50 vehicles with trailers, install toilet facilities and interpretive and educational signage. Agencies would construct a parking area on the west side of the Parks Highway near Rabideux Creek that would accommodate 50 vehicles, and provide toilet facilities, trash receptacles, and interpretive/educational signage. Agencies would provide safer access to trail systems and parking areas by installing crossing signs near MP 122 of the Parks Highway. Agencies would construct an informational kiosk near the Parks Highway/Petersville Road intersection to safely route trail users across the roadway and to provide information to the South Denali region visitor. Agencies would sign the legally dedicated portions of the trail system in the planning area for user safety. Seasonal signage would be provided for winter-only trails, and permanent signage would be installed along trails that are used year-round. Agencies would support local groups in marking and grooming winter trails in the South Denali region and grooming Petersville Road from Kroto Creek to the Forks Roadhouse.	

Summary Table of Alternatives Continued

Facility	Alternative A: No Action	Alternative B: Develop a Nature Center at Peters Hills	Alternative C: Develop a Visitor Center off the Parks Highway (Preferred Alternative)
Provide Other Facilities and Recreational Opportunities	Other facilities to support visitor use and economic development would be constructed at the discretion of the individual agencies.	One 120 sf three-sided picnic shelter would be constructed at Long Point. A 16 x 20 foot public use cabin with a 6 foot covered porch would be constructed near Home Lake. Agencies would determine the feasibility of a docking facility on the west side of the Chulitna River near MP 121.5 of the Parks Highway. Agencies would create access from the Parks Highway to the Chulitna River downstream of the mouth of Troublesome Creek. Agencies would create a map showing recreational opportunities on public lands west of Petersville Canyon.	A campground would be constructed adjacent to the proposed parking lot at MP 134.6 of the Parks Highway. The campground would include restrooms, a camp host site, up to 50 tent sites and up to 50 RV sites. Agencies would determine the feasibility of a docking facility on the west side of the Chulitna River near MP 121.5 of the Parks Highway. Agencies would create access from the Parks Highway to the Chulitna River downstream of the mouth of Troublesome Creek. Agencies would create a map showing recreational opportunities on public lands west of Petersville Canyon. A DOTPF limited maintenance area facility would be constructed near Byers Creek.

Summary Table of Alternatives Continued

Facility	Alternative A: No Action	Alternative B: Develop a Nature Center at Peters Hills	Alternative C: Develop a Visitor Center off the Parks Highway (Preferred Alternative)
Protect Scenic Qualities	The agencies would have fewer resources available to cooperatively work to protect scenic qualities of the Parks Highway and Petersville Road corridor.	If local communities request assistance in securing the state and federal Scenic Highway designation for the Parks Highway between MP 105-132, the agencies would provide technical support and facilitation. The agencies would work cooperatively to create a contiguous scenic buffer on agency held lands adjacent to the Parks Highway from MP 105 - MP 132 for the purpose of protecting the scenic and natural aspects of the highway corridor. The scenic buffer would provide reasonable access to public and private lands, and allow for appropriate uses consistent with the intent of the buffer. Additionally, the agencies would cooperate in developing context-sensitive design standards that would apply to appropriate agency held lands adjacent to the scenic buffer. The Matanuska-Susitna Borough would work with local communities to establish land use controls for private lands along the Parks Highway. The Alaska Department of Natural Resources would work with the Matanuska-Susitna Borough, which is the local government with local authority to zone, to update the current Special Use District in Denali State Park to include controls such as specific setback and design standards, building height restrictions, vegetative buffer requirements and requirements for the use of wildlife-proof garbage storage containers. In partnership with local communities, the agencies would seek appropriate methods to retain the scenic and natural qualities of the Petersville Road corridor.	

Summary Table of Alternatives Continued

Facility	Alternative A: No Action	Alternative B: Develop a Nature Center at Peters Hills	Alternative C: Develop a Visitor Center off the Parks Highway (Preferred Alternative)
Enhancements to Petersville Road	The Mat-Su Borough would implement the Petersville Road Corridor Management Plan at their discretion.	Petersville Road would be upgraded to a 24-foot wide gravel driving surface from MP 9.3 to MP 18.6 (ONLY for Alternative B - Peters Hills). A campground would be developed on Matanuska-Susitna Borough land near MP 18.6 (Forks Roadhouse) that would accommodate tent and RV camping with a vegetative buffer separating the two types of camping. A pedestrian/bike path would be constructed from MP 0 to MP 7 on the north side of Petersville Road. The DOT&PF would evaluate the need for a 45 mile-per-hour speed zone on the Parks Highway approximately 2,000 feet north and south of the intersection with the Petersville Road. Agencies would determine the feasibility of left-hand and right-hand turning lanes at the Petersville Road/Parks Highway intersection. Turnouts would be developed at MP 12.8 and MP 16.3 on the north side of Petersville Road with interpretive panels that highlight the intrinsic qualities of the area. The Kroto Creek parking lot would be redesigned on its existing footprint to safely accommodate more vehicles for year-round use.	

Summary Table of Environmental Consequences

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Soils	No effect on soils in the planning area	The direct and indirect impact on soils would result from developing facilities, and increasing opportunities for cross-country ORV use throughout the planning area. Direct impacts would be confined to soils in the immediate vicinity of the developments and could be easily mitigated with typical construction BMPs; however, indirect impacts from increased use would be more difficult to mitigate. For these reasons, impacts to soils would be considered moderate.	
Water Quality	No impacts to water quality	The impact on water quality associated with developments would be minor in magnitude because it is unlikely that Alaska Water Quality Standards or other regulatory limits would be exceeded. Direct impacts would be localized to water bodies adjacent to the proposed facilities. Direct and indirect impacts would be long-term, lasting through the life of the plan.	
Aquatic Resources and Fish	No impacts on aquatic resources and fish	Direct impacts would be confined to water bodies in the immediate vicinity of the developments. Direct and indirect impacts would not be expected to cause population level effects and would only affect common habitat, resulting in a minor impact. Impacts to fish habitat could be mitigated with typical construction BMPs to protect water quality.	
Wetlands	No effect on wetlands	The developments proposed for Alternative B would impact about 14 acres of wetlands in the Peters Hills and along the Petersville Road and Parks Highway. The impact on wetlands in the planning area from these developments and from associated recreational activities associated would be moderate because habitat would be lost throughout the planning area.	The developments proposed for Alternative C would impact about 6 acres of wetlands in the Curry Ridge area and along the Petersville Road and Parks Highway. The impact on wetlands in the planning area from these developments and from associated recreational activities would be moderate because habitat would be lost throughout the planning area.

Summary Table of Environmental Consequences Continued

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Vegetation	No effect on terrestrial vegetation	The developments proposed for Alternative B would impact about 117 acres of terrestrial vegetation in the Peters Hills and along the Petersville Road and Parks Highway. Acreage affected from indirect impacts from increased use is more difficult to quantify; linear impacts (from ORV use) would likely occur throughout the planning area. The impact on terrestrial vegetation in the planning area from these developments and from recreational activities associated with these developments would be moderate because widespread loss to non-sensitive vegetation would occur.	The developments proposed for Alternative C would impact about 143 acres of terrestrial vegetation in the Curry Ridge area and along the Petersville Road and Parks Highway. Acreage affected from indirect impacts from increased use is more difficult to quantify; linear impacts (from ORV use) would likely occur throughout the planning area. The impact on terrestrial vegetation in the planning area from these developments and from recreational activities associated with these developments would be moderate because widespread loss to non-sensitive vegetation would occur.
Wildlife	No effect on wildlife	Development of new visitor facilities is likely to have minor direct and indirect impacts on local wildlife. Although construction activities may cause temporary displacement of wildlife due to disturbance, the proposed mode of operation with shuttle busses and pedestrian trails is likely to cause minimal disturbance so that resident birds and mammals are likely to remain in the vicinity of the visitor facilities and access road. Increased ORV and snowmachine use would displace individuals but is not expected to cause population-level changes throughout the planning area.	

Summary Table of Environmental Consequences Continued

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Cultural Resources	No effect on cultural resources	Alternative B would have moderate adverse impacts to cultural resources because of increases in the number of visitors in areas where cultural resources exist.	Alternative C would have moderate adverse impacts on cultural resources because of increases in the number of visitors in areas where cultural resources exist. Some of these affected resources are eligible or could be eligible for the NRHP.
Socioeconomics	No effect on the socioeconomic environment	Construction effects would be considered a major beneficial impact on industry, employment, and income. The construction impacts on planning area population and demographics would be minor. Housing impacts would likely be minor if on-site housing were provided. If on-site housing were limited, the impacts would be moderate to major. The operations impacts on housing and real estate would be minor. The construction impacts on borough and municipal revenues and expenditures would be minor because the construction would be of a short duration and largely untaxed.	Construction effects would be considered a major beneficial impact on industry, employment, and income. The construction impacts on planning area population and demographics would be minor. Housing impacts would likely be minor to moderate if on-site housing were provided. If on-site housing were limited, the impacts would be moderate to major. The operations impacts on housing and real estate would be minor. The construction impacts on borough and municipal revenues and expenditures would be minor because the construction would be of a short duration and largely untaxed. Alternative C would have major impacts on the planning area's quality of life indicators. Five

Summary Table of Environmental Consequences Continued

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Socioeconomics, cont.		Alternative B would have a major impact on the planning area's quality of life indicators, particularly in the Petersville area. A majority of the quality of life indicators could be affected by developments proposed in Alternative B; in fact, all indicators except self-sufficient lifestyle could be affected. Impacts on land ownership and use would be moderate because the land uses would shift, but the proposed changes would be consistent with existing plans or controlled by land use restrictions.	quality of life indicators could be affected by developments proposed in Alternative C, including rural character, community cohesiveness, economic characteristics, government interaction, and recreation opportunities. Impacts on land ownership and use would be moderate because the land uses would shift, but the proposed changes would be consistent with existing plans or controlled by land use restrictions.

Summary Table of Environmental Consequences Continued

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Visitor Opportunity	This alternative would have no impact on opportunities for self-reliant recreation. This alternative would have no effect on visitors who require services and facilities, as none are proposed under this alternative. This alternative would not affect visitor safety as there would be no education or outreach to visitors in the South Denali region outside of the state and national parks.	The actions proposed in this alternative would have a major positive impact on visitor opportunities for individuals who require assistance with access, facilities, and services, especially in the Peters Hills, along Petersville Road, and on the Chulitna River by increasing access, interpretation, visitor services, and trails. Actions in this alternative would improve access for some recreational activities, would enhance the experience for snowmachine users, and would retain current opportunities for primitive recreation near Curry Ridge. It would simultaneously create a major negative impact by degrading the quality of the experience for non-motorized winter recreation throughout the planning area and introducing adverse impacts to primitive, self-reliant recreational opportunities in the Peters Hills, along Petersville Road, and on the Chulitna River by providing opportunities for increases in types and levels of use which could create user	The actions proposed in this alternative would have a major positive impact on visitor opportunities for individuals who require assistance with access, facilities, and services throughout the South Denali region and especially at Curry Ridge, along Petersville Road, and on the Chulitna River by increasing access, interpretation, visitor services, and trails. Actions in this alternative would improve access for some recreational activities, would enhance the experience for snowmachine users, and would retain current opportunities for primitive recreation in the Peters Hills. It would simultaneously create a major negative impact by degrading the quality of the experience for non-motorized winter recreation throughout the planning area and introducing adverse impacts to primitive, self-reliant recreational opportunities on Curry Ridge and on the Chulitna River by providing opportunities for increases in types and levels of use which could create user conflicts. Visitor safety would be improved by education associated with interpretive panels,

Summary Table of Environmental Consequences Continued

Alternative/ Topic	Alternative A (No Action)	Alternative B (Peters Hills)	Alternative C (Parks Highway, Preferred Alternative)
Visitor Opportunity, cont.		conflicts. Visitor safety would be improved by education associated with interpretive panels, information kiosks, and agency staffing. Visitor safety would be adversely affected by conflicts between motorized and non-motorized users.	information kiosks, and agency staffing. Visitor safety would be adversely affected by conflicts between motorized and non-motorized users.