ENVIRONMENTAL ASSESSMENT
FOR THE CONSTRUCTION OF A NEW EIELSON VISITOR CENTER
AND A
PERMANENT TOKLAT REST STOP

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

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PURPOSE AND NEED

The National Park Service (NPS) is proposing to replace the Eielson Visitor Center at Mile 65 of the park road in Denali National Park and Preserve (Denali), as authorized by the 1997 Record of Decision for the *Entrance Area and Road Corridor Development Concept Plan* (DCP/EIS). The new visitor center would be constructed on the same site as the existing building, would be sized to appropriately serve the functions necessary at the site, and it would be designed to use the sloping site topography to blend in as much as possible with the landscape. The Eielson Visitor Center is the main stop and turnaround site for most of the visitors using the park's shuttle bus system.

The objectives of this proposal would be to construct an appropriate facility to enhance the use of the Eielson site for on-site park resource interpretation and as a base for off-site interpretation, as a bus passenger rest stop, and as a bus turnaround and transfer station. The main floor of the new facility would be benched into the site, with a daylighted window side opening toward the views of Mt. McKinley and the Alaska Range. A sustainability requirement stated in the DCP/EIS is that the facility should incorporate alternative energy systems to eliminate as much as possible the use of a diesel generator. Photovoltaic panels, a small hydro plant and wind turbines are proposed as alternative energy systems.

The existing Eielson Visitor Center gets extremely crowded each time two or more buses arrive at the same time. The facility is undersized, the two halves of the building settle differentially, there are not enough toilets for the pulse visitation, there is not any protected space for eating during inclement weather, there is not enough exhibit space, there is no real office space, and the downstairs areas are not accessible. Running a large diesel generator to supply power has been a concern for the public and staff since the building was first opened.

The functions performed at the Eielson Visitor Center would need to be continued during the construction period, and the proposal includes constructing improved facilities near the present Toklat Rest Stop at Mile 54 to serve during the two summers of construction at the new visitor center. During the two construction summers, shuttle buses would drive to Stony at Mile 62 for the views. The new Toklat Rest Stop would be made a permanent facility when additional funding becomes available. A related proposal to construct bank stabilization of the Toklat River to protect the visitor and administrative facilities downstream of the west Toklat River bridge would be completed.

This EA analyzes the NPS preferred action and alternatives for the Eielson and Toklat areas of Denali National Park and Preserve and has been prepared according to the National Environmental Policy Act of 1969 and regulations of the Council of Environmental Quality (40 CFR 1508.9).

Background

The Eielson Visitor Center (Eielson) is located on dry alpine tundra at Mile 65 of the Denali Park Road (Figures 1 and 2) with a spectacular view of Mt. McKinley and the Alaska Range. Opened in 1959, Eielson was built on the former site of Camp Eielson, a concessioner and Armed Forces camp that operated from the opening of the road in that area in 1934 until 1950. During the 1930s the site was also a leading candidate for a park hotel. The visitor center was constructed as part of a ten-year plan called Mission 66 to upgrade facilities nation-wide, and was constructed just after completion of the gravel Denali Highway in 1957 allowed

visitors for the first time to drive their cars to see the park. Previously visitors had to put their automobiles on a rail car to get them to the park. Visitation increased dramatically after 1957 and then stabilized at about 30,000 visits. It increased dramatically again when the Parks Highway opened in 1972, connecting the paved road system to the park. At that time, the park instituted the public shuttle bus system and limited the number of private vehicles on the park road.

Eielson is approximately 3700 square feet and is undersized for the use it gets today and would be further undersized should some of the tour buses travel 4 miles further than they do today and turnaround there. The present building was opened in 1959 when travel on the park road was less than 5% of today's totals. Eielson was constructed during an era of light visitation, with perhaps no more than 50 families arriving by automobile per day. The shuttle buses of the Visitor Transportation System started moving visitors on the park road in 1972, when Alaska Highway #3 was completed to connect Anchorage and Fairbanks and brought an easy automotive connection to the park entrance. Today, Eielson is visited by over 1000 people per day for most of the summer.

In 1972 a shuttle bus system replaced most private vehicle use on the park road and established Eielson as the major visitor destination in the park. Construction at Eielson in 1976 added more restrooms and an outside, covered, wildlife-viewing platform. Concessioner-operated bus tours stopped going to Eielson in June, 1981, after a fatal bus accident at mile 64, and have since turned around at Toklat (mile 54), Stony (mile 62), or Primrose (mile 17). Approximately 70,000 visitors on the park shuttle buses, however, visited the exhibits and facilities at Eielson in 2003, in addition to 11,000 guests of the Kantishna lodges riding private buses. The 35,000 visitors traveling to Wonder Lake and Kantishna stopped at Eielson more than once during their trip. Eielson receives up to 1200 visits per day.

Three main constructed trails are available at Eielson (Figures 2 and 3). A short trail was constructed south of the building in 1991, using pieces of social trails, to establish a maintained facility for the visitors who wanted a 15-20 minute tundra trail experience during their 30 minute bus trip lunch break. However, this 20 minute trail has sections up to 18% in grade. A less-steep trail was constructed in 2001 from the east side of Eielson to a flat bench south of the visitor center. The trail is 1900 feet long and has a maximum grade of 7.5%, which met standards of accessibility for a recreational trail. Approximately 1200 feet of previously existing trail was reclaimed and revegetated. A trail to the top of the ridge above Eielson (1000 feet vertically above) will be completed in June, 2004 and replaces a popular social trail that had sections approaching 60% slope. Additional social trails have developed at Eielson, including a trail generally following the water pipe to the visitor center from the water source at a spring, and two trails leading downhill to Gorge Creek.

The Toklat area has been used for facilities since a road construction camp was established at the west end of the bridge site by the Alaska Road Commission in 1932. It is likely that a road maintenance camp was established downstream of the bridge as early as 1946, although permanent housing was not built there until the early 1970s.

For over 50 years, Toklat has been the main administrative center in the interior of the park (Figure 6). Over 30 seasonal and permanent employees work out of there each summer, including roads and buildings maintenance workers, rangers, park naturalists, and researchers. Contract employees working on major road repair projects or other construction projects often are housed there. Gravel extraction has been a major effort at Toklat, first from 1987-1989 at the alluvial fan near the west Toklat Bridge, and since 1992 in the active floodplain of the Toklat River near the road camp. The gravel extraction site at the lower end of the alluvial fan

has not been restored to natural conditions and includes minor stockpiles of processed gravel. This extraction area includes an acre of ground below the park road near the alluvial fan drainage ditch.

For many years, through 1989, the visitors on the Tundra Wildlife Tour buses would have their lunch at a pullout near a soapberry patch east of the east Toklat Bridge. The chemical toilets from this site were moved to a site below the alluvial fan gravel processing site in 1990, and both the Tour Buses and the Shuttle Buses have been stopping there for a rest break since then. The chemical toilets sit in a very exposed location that often is hit by strong winds carrying sand and grit from the glacial river floodplain.

The Toklat River is a major glacial stream, with an active floodplain almost 2000 feet across. The braided river carries over 200,000 tons per summer of bedload and is usually opaque. The East and West Branches of the Toklat River come together just above the east Toklat bridge. A project to install steel sheetpile bank stabilization to protect the new gravel processing area downstream of the road camp was authorized in the DCP/EIS and was completed in 2003. The flow under the west Toklat Bridge is usually a small channel of clear water that emerges out of the vast gravel floodplain in the low spots near the bridge and is likely mostly water draining down from Highway Pass.

The Stony Hill Parking Lot (Stony) at mile 62 is often the first place that visitors see the grand expanse of Mt. McKinley framed by a spectacular section of the Alaska Range. The parking lot is small and the site is managed to stay rustic, without permanent improvement.

The DCP/EIS (USDOI, NPS, 1996) is incorporated by reference and summarized below. This plan amended the 1986 GMP for the entrance area and road corridor or "frontcountry" of Denali to provide specific direction for facility development to meet the needs of the public for the next 15-20 years. The plan provides for visitor facilities and services in the frontcountry to meet a wide range of visitor needs and interests. In that plan, changes in the frontcountry were limited to actions in which the NPS has traditionally specialized, such as interpretive centers, environmental education opportunities, trails, campgrounds, and resource protection programs.

For the areas included in this proposal, the DCP/EIS calls for:

> *Eielson Visitor Center would be replaced with a facility of appropriate size and function and would incorporate alternative energy systems such as photovoltaic to supplement or replace the diesel generator.*
>
> *Wayside exhibits would not be installed at Stony Overlook; it would continue to function as an undeveloped picnic area.*
>
> *An additional permanent rest area would be constructed at Toklat.*
>
> *Sheetpile would be installed at Toklat to protect the facilities there from river erosion.*
>
> *Construct an onsite waste water disposal system for the proposed Toklat rest area.* (Not under consideration at this time.)

The limits on the acreage to be affected were given on page 214 in the Draft DCP/EIS. They include:

Eielson Visitor Center: replace and expand existing structure – 2.0 acres of new ground disturbance and 1.0 acres to be Restored or Landscaped. Construct picnic area – 0.1 acres of new ground disturbance.

Toklat: relocate Toklat rest area – 2.0 acres of new ground disturbance and 0.25 acres to be Restored or Landscaped. Construct 0.5 mile loop trail – 0.3 acres of new ground disturbance.

Legal Context

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

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

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

In 1917, Congress established Mount McKinley National Park:

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

Additions to the park were made in 1922 and 1932 to provide increased protection for park values and, in particular, wildlife.

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

"The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided for by Congress." (16 U.S.C. 1-a1.)

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

Figure 1. Project Location

Figure 2. Eielson Visitor Center Area – Existing Conditions

Figure 3. Eielson Visitor Center – Existing Conditions

The NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The 2001 NPS Management Policies uses the terms "resources and values" to mean the full spectrum of tangible and intangible attributes for which the park is established and managed, including the Organic Act's fundamental purpose and any additional purposes as stated in the park's establishing legislation. The impairment of park resources and values may not be allowed unless directly and specifically provided by statute. The primary responsibility of the NPS is to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

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

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

Impact Topics

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

Vegetation and Soils

Project construction would remove vegetation in the project area. Specific concerns include:

- Removal of species-rich vegetation communities.
- Vulnerability of soils to erosion due to high summer precipitation in the project area.
- All facilities at Toklat need to have permanent protection from Toklat River erosion.

Wetlands

Project construction could affect wetlands along an Eielson-area drainage and in the Toklat River floodplain.

Wildlife Values and Habitat

Project construction could affect wildlife values and habitat. Specific concerns include:

- Construction activities would temporarily produce activity levels that would disturb wildlife and cause them to disperse from adjacent areas.
- The new facilities would remove habitat.

Air Quality

Project construction could affect local air quality. Specific concerns include:

- Additional heavy machinery would be operating during the two summers of construction.
- Use of alternative energy sources at Eielson would improve local air quality.

Water Quality

Project construction at Eielson site or at the hydro plant could affect local water quality.

Floodplains
Project construction would affect floodplains in the project area. Specific concerns include:

- A flash flood hazard exists in the alluvial fan area of the proposed rest stop.
- The dynamic edge of the Toklat River floodplain would be affected by the project.

Sound Quality
Project construction and operation and use could affect natural sounds in the area. Specific concerns include:

- Noise from a wind turbine and hydro plant could be heard at the Eielson site.
- Noise from the diesel generator could be heard at the Eielson site.

Cultural Resources
Project construction could potentially affect currently unknown cultural or historic resources, especially artifacts from the era of Camp Eielson (1934-1950) which may be unearthed during construction.

Visual Resources
Project construction could result in impacts to visual resources. Specific concerns include:

- A redesigned Eielson could have less impact on the landscape.
- A new Toklat Rest Stop could be better screened from the park road.
- The new EVC could be made to blend in more with the landscape.
- New facilities at Toklat would need more visual and wind screening.

Visitor Use and Enjoyment
Project construction could result in impacts to recreation and visitor use. Specific concerns include:

- The new visitor center should provide an expanded facility to meet the basic needs of visitors – adequate restrooms and shelter during inclement weather.
- The new visitor center should provide an expanded opportunity for visitors seeking information about the park and how to enjoy a wilderness recreation experience.
- Visitors standing in line at the toilets at Toklat should have some wind protection.
- Visitors to Toklat facilities should be protected from flood events.
- The building would meet accessibility guidelines.
- The use of temporary facilities during the two years of construction at Eielson could affect visitor satisfaction.

Park Management
Project construction could result in impacts to park management. Specific concerns include:

- Alternative energy sources would reduce reliance on a diesel generator and reduce fuel costs.
- New materials, such as for the roofing systems, would be easier to maintain.
- The building would be constructed so that it would be easier to heat and ventilate.

Local Communities/Socioeconomic Resources
Replacing the Eielson Visitor Center and Toklat Rest Stop could affect the length of stay of visitors, which would have a positive economic effect on local communities outside the park.

Issues Considered and Eliminated from Further Consideration

Wilderness Resource Values

Project sites are in development nodes excluded from wilderness designation. Impacts to wilderness would be similar to those from normal operations along the park road.

Effects on Threatened and Endangered Species

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

Subsistence Use

Subsistence uses are not allowed in the Eielson or Toklat areas or on any of the lands of the former Mt. McKinley National Park, and no adverse affects to subsistence activities would occur. See Appendix A for an ANILCA 810 subsistence evaluation and finding.

Environmental Justice

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

Permits and Approvals Needed to Complete the Project

Executive Order 11988 (Floodplain Management) requires the NPS, and other federal agencies, to evaluate the impacts its actions are likely to have on floodplains. This executive order requires that short and long-term adverse impacts associated with occupancy, modification or destruction of floodplains be avoided whenever possible. Indirect support of development and new construction in such areas should also be avoided wherever there is a practicable alternative.

To comply with these orders, the NPS has established procedures for implementing floodplain protection and management actions in units of the National Park System. The revised Procedural Manual #77-2 Floodplain Management Guideline provides guidance for managing activities which result in the modification or occupation of floodplains, or which result in impacts to floodplain values. This evaluation is found in the Statement of Findings (SOF) in Appendix B.

An Individual Permit under Section 404 of the Clean Water Act would be needed from the Corps of Engineers to allow installation of the bank stabilization along the edge of the Toklat River floodplain.

A permit from the State Department of Conservation would be needed to alter the water supply system at the Eielson Visitor Center.

II. DESCRIPTION OF THE ALTERNATIVES

Actions Common to all Alternatives

The leachfield at Eielson would be replaced under all alternatives. The leachfield was installed in 1985 and has a life expectancy of 20 years. Under the no-action alternative, either a separate project to replace the leachfield, or an emergency response to a leachfield failure would shut down the building water-based systems. Two chemical toilets would be installed in the parking lot during construction though the visitor center itself would not be shut down. Under the action alternatives, the leachfield would be replaced during construction of the new visitor center. The replacement leachfield site is parallel to, and immediately downhill of, the existing leachfield, and would involve approximately 0.5 acres of disturbance to the tundra.

Alternative 1 –No Action Alternative

Under this alternative, there would be no new construction at Eielson (except for the leachfield) or at Toklat. The Eielson Visitor Center would continue to operate as the main interpretive facility west of the Savage River and would not be replaced. Interpretive programs in the west end of the park would continue to be based out of Eielson. Approximately 50% of shuttle bus visitors would turn around after a break at Eielson, and visitors riding Wonder Lake buses would make two stops at Eielson. Electrical power would be generated for Eielson from a diesel generator. There would continue to be an outdoor uncovered picnic area, and the 1976 addition would provide a limited outdoor covered picnic area. Annual maintenance to fix leaky roofs and differential subsidence between the two halves of the building would continue.

The temporary rest stop at Toklat would continue to serve as the site of a major turnaround point for the Shuttle buses and as the primary turnaround point for the tour buses. Additional bank protection would not be installed at Toklat upstream of the present southern limit.

Alternative 2 –Replace Eielson Visitor Center on site and Construct Toklat Rest Stop at Downstream site (NPS Preferred Alternative)

Under this alternative, the Eielson Visitor Center would be replaced with a new facility of approximately 9000 square feet that would incorporate alternative energy supply systems. Over a period of two summers the existing Visitor Center would be demolished and a new structure would be constructed on the same site (Figures 4 and 5). The structure would be designed so that the main floor would be below ground level on the uphill side, with the parking lot at grade with a roof functioning as a picnic and observation area. The roof surface would be broken up by large raised planters containing local tundra vegetation. Benches would also be inset into the planters. The side of the planters facing the parking lot would be faced with stone and would direct visitors to a main entranceway leading to the roof and to a stair or ramp entrance to the path leading down to the main floor. The new building would continue the functions of the present building as a visitor contact center, interpretive program center, bus transit center, rest stop, picnic site, book store, maintenance facility, and seasonal housing.

Access to the building would be by an ADA compliant outside ramp leading down from the parking lot to the restrooms and main entrance. Functional areas on the main floor closer to the building entrance would include an information counter, exhibit areas, book store, observation areas, picnic areas and staff office. Functional

areas further away from the entrance would include most mechanical and maintenance areas, bus driver break room, and seasonal quarters.

The existing parking lot would be enlarged to accommodate circulation room for nine permanent bus spaces arranged in echelon, and for ten private and administrative parking spaces. Private vehicle parking would be formally separated from bus parking. The present lot has room for six cars and up to eight buses, if the buses park nose-to-tail along both sides of the parking lot. The existing septic system and leach field would be replaced. Existing trails would be re-connected to the new site facilities.

Using hand tools, the existing wood spring box and galvanized pipe water line would be replaced at the same site with newer materials. At some point in the future, one or two ten-meter towers to hold wind power generators could be erected 100-200 feet west of the visitor center, and a slice or trench would be made for the power line to the building.

A small 4'x4'x5'hydro power plant structure would be installed 300-400 feet below the park road near the stream that flows just east of Eielson. A 2'x2'x2' collecting box would be dug into the creek bed above the park road and another collecting box would be dug below the park road into the bed of the little stream that emerges from the spring box area. Surface buried four inch diameter water pipes would carry water from both collection boxes to the hydro power plant. A power line would be laid next to the water pipe from the hydro power plant up to the park road and it would be trenched in conduit into the road shoulder from there to the visitor center.

Areas of alpine tundra to be disturbed by construction would be saved for use during site reclamation.

The functions performed at the Eielson Visitor Center would need to be continued during the construction period, and this alternative includes constructing improved facilities near the present Toklat Rest Stop at Mile 54 to serve during the two summers of construction at the new visitor center (Figures 7 and 8). The new facility at Toklat would include parking for 15 buses and 10 cars, three large vault toilets (SSTs or Sweet-Smelling Toilets such as were recently installed at the Primrose Rest Stop), temporary installation of the chemical toilets used at the present Toklat Rest Stop, a 24'x24' visitor contact center with a staff office, and a 16'x24' bus dispatch office. Photovoltaic panels would be installed to power electric lights and small propane heaters would also be installed. From three to five gravel berms up to 8 feet in height would be constructed to reduce visibility of the facility from the park road and to help protect the facilities from stream course changes in the alluvial fan above the facility. The gravel berm constructed uphill of the service road would have a gabion core to ensure that any flood in the alluvial fan would be diverted away from the rest stop facility. Use of Toklat River gravel for the site work has already been approved in the park's 2003 Gravel Acquisition Plan. Some functions at the site could be initially housed in weatherports or other similar soft-sided structures, but the new Toklat Rest Stop would be made a permanent facility with hard-sided structures replacing the temporary ones when additional funding becomes available.

The site for the Toklat Rest stop would be 600 feet downstream of the west Toklat Bridge and 450 feet downstream of the present facility, and would be bounded on the downstream side by the present channel for the alluvial fan drainage. The existing service road would be re-routed above the new facility through the area of the alluvial fan disturbed for gravel extraction in the late 1980s. The uphill side of the re-aligned road prism would be reinforced with bank erosion protection consisting of wire-enclosed rock (gabions) extending to the limits of the alluvial fan.

A related proposal to construct bank stabilization of the Toklat River to protect the facilities between the west Toklat River bridge and the Toklat Road Camp would be completed. The bank of the Toklat River is 6-10 feet high at this point and steel sheet piling would be installed to connect the sheet pile wall at the Road Camp up to a point approximately 400 feet downstream of the bridge. Between that point and the bridge, the bank stabilization would be either sheet pile or a gabion (rock basket) wall, with the top one to two feet above the adjacent stream bed and buried under a veneer of gravel. Protected breaks in the sheet pile would be installed every 300-400 feet to allow animal passage to and from the river floodplain.

A trail would be defined from the parking lot and facilities to the edge of the river where it would continue along the top of the bank stabilization to the present rest stop. The trail would be made ADA compliant.

During the two summers of construction at Eielson, shuttle buses would stop at Toklat for the lunch and rest stop break, and would also drive to Stony for the mountain views and additional wildlife viewing. Shuttle buses would use the Little Stony pullout as a turn-around point and would stay longer on the edge of the park road at Stony for the views from that site.

Alternative 3 – Replace Eielson Visitor Center on site and Construct Toklat Rest Stop at Upstream Site

The same proposal as in Alternative 2 for a new Eielson Visitor Center would be part of the alternative.

The functions performed at the Eielson Visitor Center would need to be continued during the construction period, and this alternative includes constructing improved facilities near the present Toklat Rest Stop at Mile 54 to serve during the two summers of construction at the new visitor center. The new facility at Toklat would include parking for 15 buses and 10 cars, three large vault toilets (SSTs or Sweet-Smelling Toilets such as were recently installed at the Primrose Rest Stop), temporary installation of the chemical toilets used at the present Toklat Rest Stop, a visitor contact center, a bus dispatch office, and a staff office. Photovoltaic panels would be installed to power electric lights and small propane heaters would also be installed. Three to four gravel berms up to 10 feet in height would be constructed to reduce visibility of the facility from the park road and to help protect the facilities from stream course changes in the alluvial fan above the facility. Some functions at the site could be initially housed in weatherports or other similar soft-sided structures, but the new Toklat Rest Stop would be made a permanent facility with hard-sided structures replacing the temporary ones when additional funding becomes available.

The site for the Toklat Rest stop would be 200 feet downstream of the west Toklat Bridge and would enlarge and cover the present facility site (Figure 9). The site design would be very similar to the one shown for alternative 2, with changes in berms or layout to accommodate the slightly different topography. The gravel berm constructed uphill of the parking lot would have a gabion core to ensure that any flood in the alluvial fan would be diverted away from the rest stop facility. The existing service road would be partially re-routed through the previously disturbed area of the alluvial fan to end up above the new facility. The uphill side of the road prism would be reinforced with bank erosion protection consisting of wire-enclosed rock (gabions) extending to the middle of the alluvial fan. The bank of the Toklat River in this area slopes gradually to the clearwater stream flowing under the west bridge.

A related proposal to construct bank stabilization of the Toklat River to protect the facilities between the west Toklat River bridge and the Toklat Road Camp would be completed. The bank of the Toklat River is 6-10 feet

high at this point and steel sheet piling would be installed to connect the sheet pile wall at the Road Camp up to a point approximately 400 feet downstream of the bridge. Between that point and the bridge, the bank stabilization would likely be a sheet pile or gabion (rock basket) wall with the top one to two feet above the adjacent stream bed and buried under a veneer of gravel.

During the two summers of construction at Eielson, shuttle buses would stop at Toklat for the lunch and rest stop break, and would also drive to Stony for the mountain views and additional wildlife viewing. Shuttle buses would use the Little Stony pullout as a turn-around point and would stay longer on the edge of the park road at Stony for the views from that site.

Alternatives Considered and Dismissed

Eielson

Six schemes were initially developed by the A&E firm for the Eielson design and were presented to the park in October 2002. **Scheme #1** reused the existing restrooms and expanded the viewing area and support facilities by adding 5000 square feet to the existing facility; it was a two-story building and would minimally expand the footprint of the building. **Scheme #2** required the existing visitor center be demolished and replaced by a 9000sf traditional log lodge type facility with a formal two story design and traditional floor plan. **Scheme #3** was an underground building or Earth Berm Landscape and was a single story design with an open floor plan. This design developed a previously undisturbed area but reduced the visual impact of the built environment at the site. **Scheme #4** was entitled Form Expressive Function and was a modern, multi-shaped building. The floor plan was completely open and created multi-faceted roof and wall angles. The design was located at the site of the existing building and expanded the footprint of development. **Scheme #5** was the Village concept and consisted of a group of five buildings clustered together forming a campus type arrangement of buildings. The buildings were modern and angular in form, each building housing a discreet building program element. The buildings were located at the existing visitor center site and expanded the area of impact. **Scheme #6** was the Wall or Pavilion Scheme and was the largest multi-level two story scheme located at the existing building site but expanded the building footprint. The Wall design called for a two and a half story glass wall on the south side.

As part of the process, three schemes were selected for further development and refinement: Scheme #1 Re-use, Scheme #3 Earthberm and Scheme #6 Wall or Pavilion Scheme.

Figure 4. Eielson Visitor Center – Proposed Site Plan

Figure 5. Proposed Floor Plan for Main Floor

Figure 6. Toklat Area – Existing Conditions

Figure 7. Toklat Schematic Design

Figure 8. Alternative 2 – Toklat Proposed Site Plan

Figure 9. Alternative 3 – Toklat Proposed Site Plan

A value analysis was performed in March 2003. The Value Analysis team reviewed each of the three schemes and used "Choosing by Advantages" and Life Cycle Cost Analysis for evaluation. A preferred alternative was developed that includes a hybrid design, incorporating the low profile of the Earth Berm and the location and layout of the Wall design. Compared to the developed Schemes, this design offered the following advantages:

- Building is the least visible on site
- 6,600 SF less new site disturbance
- Less adverse impact to birds after construction
- Best degree of visitor dispersion in building
- Best variety of eating spaces and best views of mountain, very best quantity of sheltered exterior eating space
- Shortest distance from curb to restroom
- Best viewing of buses by nervous visitors and best overall dedicated functionality
- Best views to the mountain and largest amount of sheltered viewing opportunities
- Best circulation space efficiency, best location for information desk to avoid bottlenecks
- Best accessibility to trails and best accessibility to outdoor viewing
- Best amount of interior exhibit opportunities, best degree of exhibit integration with architecture
- Best interaction with ranger and most efficient interpretative space relationships/ circulation
- Easiest delivery, best separation of maintenance & visitors, best maintenance accessibility
- Most sustainable facility

The preferred alternative design was revised and presented and approved by the NPS Development Advisory Board in August 2003. The preferred alternative is the Relocated Earth Berm and provides the following advantages:

- The final schematic design is light on the land.
- The design reduces the visual impact by placing the building on the existing visitor center site at a lower terrace level, out of sight from approaching visitors and buses.
- The upper viewing plaza is exposed to the elements and consists of a subtle safety railing, paved walking/viewing areas and tundra landscape with seating areas.
- The visitor center is situated one level below the entry plaza and is entered either by an exterior ramp or exterior stairs.
- The visitor restrooms are adjacent to the ramp and accessible throughout the season even when the visitor center is closed.
- The exhibit hall is a large open space with a central information desk for park naturalists.
- The interpretive exhibits will consist of video displays, interpretive panels and displays, roll out discovery carts, a weather station/kiosk and tundra research space.
- A sales area is located adjacent to the exhibit hall.
- Anchoring all of the public spaces is a centrally-placed topographic model of the mountain and landscape with a skylight to above.
- The southwest side of the building incorporates windows angled down and in to provide views, enhance energy efficiency and reduce impacts to birds.
- Various support spaces for staff, building services and the caretaker's apartment are removed from the center of the hall

- The overall layout is efficient, utilizing rectangular geometry to the greatest extent possible to allow for economical construction in this remote site.
- The building, exhibits and utilities will be designed to "go cold" during the winter months.

Toklat

It was determined that Toklat would be a more logical site than Stony (too small) or the Mile 70 gravel pit (too far and too much conflict with road project use) for temporarily re-locating the Eielson visitor facilities during the two summers of construction. Toklat is also scheduled for a permanent rest stop facility when funding allows and extensive development has already occurred in this general area. Six possible sites were suggested and presented to the park for review in the early summer of 2003.

Option A was chosen as the preferred alternative and would be located farthest north of the park road and bridge along the Toklat service road. This option would be closest to the road camp, would require the service road be re-aligned to separate most pedestrian traffic from automotive traffic, and would be farthest from easy river access. Locating the rest area at this location would greatly reduce the visibility of the facility as the visitor travel the park road and would increase the capability of screening the facility for visibility and wind protection.

Option B would be centrally located at the existing crusher site and alluvial fan drainage. This site would take advantage of existing disturbed area but would be highly visible from the road, would be difficult to screen and would require a more difficult road re-alignment (uphill) to separate pedestrian and vehicular traffic.

Option C would be located on the south toe of the alluvial fan, on the existing crusher site. This site would take advantage of utilizing a previously disturbed area but would be uphill of the road and river and close to the park road, thus increasing the visibility of the site from the park road.

Option D would expand the existing rest area site toward the park road. This location would allow the easiest access to the river and would use a previously disturbed area. The site also would allow maximum visibility of the site from the park road.

Option E would be located just north of the park road on the island between the two Toklat River bridges. The site would allow for premier views of the river and mountains in the area. This site was dismissed because of high visibility, potential for river damage or flooding and the amount of wind experienced at the site would prohibit visitor comfort on any level.

Option F would be located along the park road, west of the Toklat Access road entrance and closest to the historic Toklat Ranger Cabin. This site would allow for good views, would be the farthest away from the active area of the alluvial fan and would remove the visitors from the Toklat road camp traffic. However, this location is in tall shrub vegetation and is not a previously disturbed area, and the bear activity in the area suggests this is not an optimal area of development.

The main design criteria for selecting the preferred site for the Toklat Rest Area include:

- Reducing the visibility of the facility from the park road
- Screening the facilities and visitors from wind
- Separating the pedestrian and vehicular traffic

- Limited new site disturbance
- Limiting adverse impacts to wildlife
- Clear sight lines for wildlife viewing
- Access to the river
- Overall dedicated functionality
- Good separation of maintenance & visitors and good maintenance accessibility
- Sustainable facility

Environmentally Preferred Alternative

Both action alternatives are considered to be the environmentally preferred alternative because: the installation of alternative energy sources at Eielson would greatly reduce the dependence on fossil fuels; the replacement of Eielson with a structure that blends better with the landscape would reduce existing visual impacts; the provision for enhanced interpretive displays would allow visitors to become better educated about park resource values which would enable them to be better land stewards; the installation of bank stabilization at Toklat would allow necessary park support development to concentrate at Toklat rather than need to find new areas to develop along the west end of the park road; the replacement of Eielson with an ADA facility would broaden the population that could enjoy the interpretive opportunities or who could work at the site.

Mitigation and Monitoring

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

Vegetation and Soils- Silt fences and straw bales or other Best Management Practices (BMP) barriers would be placed around the Eielson work area to limit erosion and other direct impacts to vegetation and soils. Landscaping and replanting native vegetation would occur around the new development area. Replanting with native vegetation would replace portions of the habitat lost from the construction operations. Periodic surveys will be conducted to determine the presence of exotic plants. Actions to replace the spring box and water line would be accomplished using hand tools.

Wetlands - Silt fences and straw bales would protect meadows and riparian zones in the areas not directly affected by construction. In order to keep the riparian zone soils in the streambed east of Eielson at least damp, the collection boxes for the hydro plant would be closed when dry conditions reduce the stream discharge to less than one and one-half times the pipe discharge.

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

Water Resources – Water drainages would be avoided to the extent possible in the design of the new facilities.

Floodplains – Fuel spill kits would be carried with heavy equipment when the vehicles are being used in floodplains.

Air Quality - Contractors would be required to use BMP, such as to control vehicle and equipment pollution. Equipment not in use would be turned off.

Sound Quality – Contractors would be required to use BMP equipment, such as mufflers to control vehicle and equipment noise.

Cultural Resources – Additional archeological investigations at Eielson and Toklat will be carried out in the summer of 2004. If previously unknown cultural resources are located during construction, the project would be halted in the discovery area until cultural resource staff could determine the significance of the finding.

Visual Resources - Gravel berms up to 8 feet in height would be established or maintained between the Denali Park Road and new Toklat Rest Stop to minimize visual impacts to park visitors from the park road. No antennas would be permitted above the roof line of the new Eielson Visitor Center.

Visitor Use and Recreation - Construction phasing would be coordinated with the park bus systems to minimize traffic delays on the park road. Visitor impact is expected, so an educational program with information and interpretive signs would be implemented. Barricades would be placed around the construction sites to prevent visitor entry, although some rest room facilities at the Eielson site may continue to be open to the public.

Safety - Visitors would generally not be allowed within the Eielson or Toklat construction limits without permission from the superintendent or delegate. If a gravel berm is constructed uphill of the service road would have a gabion core to ensure that any flood in the alluvial fan would be diverted away from the rest stop facility.

Table 1. Comparison of the Alternatives

Facilities	Alt. 1 (No Action)	Alt. 2 Replace Eielson and Construct new Toklat Rest Stop at Downstream Site	Alt. 2 Replace Eielson and Construct new Toklat Rest Stop at Upstream Site
Eielson Visitor Center	No replacement planned. Existing 3700 square foot building would receive annual maintenance and emergency maintenance as required, depending on available funding. Lower floor not accessible. Diesel generator used ¼ of summer hours for electricity.	Construct new 9000 square foot VC on same site during 2005-2006. Building would be fully accessible. Propane generator would be back-up to new Solar and Hydro power installations.	Same as Alternative 2
Facilities During Construc-tion Years	No extra facilities required. Bus turnaround still at EVC, Mile 66. Wonder Lake shuttle buses would still go to Wonder Lake.	New Rest Stop at Toklat would substitute for Visitor Center for 2 summers. Bus turnaround would be at Little Stony, Mile 63. Wonder Lake shuttle buses would still go to Wonder Lake.	Same as Alternative 2
EVC Leach-field	Existing field replaced with new leach lines within 5 years on adjacent ground.	Existing field replaced as part of larger VC replacement, on adjacent ground.	Same as Alternative 2
New Toklat Rest Stop	Temporary rest stop consisting of 10 chemical toilets and a parking lot would be retained. No new riverside trail; site has access to clearwater stream.	Permanent rest stop would be built at location 600 feet downstream of present site. Permanent buildings would be built for toilets and visitor information. Gravel berms would be used for wind and visibility screening and to protect site from extreme alluvial fan floods. Riverside trail would be built from new rest stop to present rest stop.	Permanent rest stop would be built at present site. Permanent buildings would be built for toilets and visitor information. Gravel berms would be used for wind and visibility screening and to protect site from extreme alluvial fan floods. No new riverside trail; site has access to clearwater stream.
Toklat Bank Stabiliza-tion	Steel sheet pile installed in 2003 to protect gravel processing area and lower Road Camp. No bank protection for rest stop or service road would be installed.	Steel sheet pile installed in 2003 to protect gravel processing area and lower Road Camp. Sheet pile or gabion basket wall to extend upstream from existing pile to the west Toklat Bridge to protect all developments.	Steel sheet pile installed in 2003 to protect gravel processing area and lower Road Camp. Sheet pile or gabion basket wall to extend upstream from existing pile to the west Toklat Bridge to protect all developments.

Table 2. Summary Impacts of the Alternatives

IMPACT TOPIC	ALT. 1 – No Action	ALT. 2 – Replace EVC and Construct Toklat Rest Stop at Downstream Site	ALT. 3 Replace EVC and Construct Toklat Rest Stop at Downstream Site
Vegetation/Soils	0.5 acres of alpine tundra removed for new leachfield.	1.3 acres of alpine tundra removed for new EVC. 3.25 acres of thinly vegetated alluvial fan would be disturbed by construction at Toklat. Another 1.65 acres of presently disturbed ground would also be used at Toklat. Restoration of existing disturbed sites would include 0.5 acres at EVC and 4.65 acres at Toklat.	1.3 acres of alpine tundra removed for new EVC. 1.45 acres of thinly vegetated alluvial fan would be disturbed by construction at Toklat. Another 1.4 acres of presently disturbed ground would also be used at Toklat. Restoration of existing disturbed sites would include 0.5 acres at EVC and 4.5 acres at Toklat.
Wetlands	No impact	Negligible effect from installation of new EVC Hydro Power Plant and replacement of EVC springbox and waterline. Negligible impact from installation of bank protection at Toklat.	Same as alternative 2
Wildlife/Habitat	No impact	Loss of up to 4.55 acres of wildlife habitat, combined with restoration of 5.15 acres results in minor impact to wildlife.	Loss of up to 2.75 acres of wildlife habitat, combined with restoration of 5 acres results in minor impact to wildlife.
Air Quality	Negligible impact from continued use of diesel generator during 1/4 of summer hours.	Temporary local minor adverse impacts during construction. Improved air quality at EVC from increased used of Solar and Hydro energy for electricity.	Same as alternative 2..
Water Quality	No Impact	Impacts to water quality negligible due to mitigation during construction.	Impacts to water quality negligible due to mitigation during construction.
Floodplains	No impact	Edge of Toklat River floodplain stabilized by bank protection. Flooding potential at new Rest Stop mitigated by protection structures.	Edge of Toklat River floodplain stabilized by bank protection. Flooding potential at new Rest Stop mitigated by protection structures.
Sound Quality	Minor adverse impact due to running the diesel generator 1/4 of the time.	Minor adverse impact during construction. Minor benefit afterwards from reduced generator noise.	Minor adverse impact during construction. Minor benefit afterwards from reduced generator noise.
Cultural Resources	No impact	No Impact	No impact
Visual Resources	Continued minor adverse impacts from EVC relationship to landscape and from unscreened chemical toilet rest stop at Toklat.	Minor-moderate benefit to visual landscape from new design that settles the VC into the ground. Moderate benefit to visual landscape at Toklat from a screened rest stop at a greater distance from the road along with reclamation at disturbed sites.	Minor-moderate benefit to visual landscape from new design that settles the VC into the ground. Moderate benefit to visual landscape at Toklat from a screened rest stop along with reclamation at disturbed sites.

Visitor Use & Recreation	Moderate adverse impact from continuing activities in a visitor center that is too small and has toilets rooms that are coming apart in the middle. Minor adverse impact from a rest stop that does not provide protection from the elements.	Improved interpretive exhibits and services, improved building accessibility, and improved picnic areas would benefit the visitor experience on the bus trip. A new Toklat rest stop and trail would benefit the visitor experience. The visitor experience would be adversely affected during the two years of construction by shortening the bus trip, and by the minimalist facilities.	Improved interpretive exhibits and services, improved building accessibility, and improved picnic areas would benefit the visitor experience on the bus trip. A new Toklat rest stop at grade with the clearwater stream would benefit the visitor experience. The visitor experience would be adversely affected during the two years of construction by shortening the bus trip, and by the minimalist facilities.
Park Management	Moderate adverse impact from costs of maintaining a building that is too small for the use and is falling apart. A moderate impact if the Toklat service road and upstream end of the existing sheet pile is not shielded from river erosion.	Beneficial effect on Eielson interpretive programming, building maintenance, sustainability, and accessibility. Benefits to Toklat include a protected site for permanent facilities at the rest stop, reclamation of disturbed ground, and protection of the whole development area from Toklat River erosion.	Beneficial effect on Eielson interpretive programming, building maintenance, sustainability, and accessibility. Benefits to Toklat include permanent facilities for the rest stop, reclamation of disturbed ground, and protection of the whole development area from Toklat River erosion.
Local Communities-Socioeconomic Resources	Negligible adverse effect.	Could be a moderate benefit to local economy if new Eielson VC provides memorable experiences.	Could be a moderate benefit to local economy if new Eielson VC provides memorable experiences.

AFFECTED ENVIRONMENT

The following documents contain descriptions of the environment of the road corridor in the Eielson-Toklat vicinity. They are incorporated by reference and summarized below:

- The 1986 Denali General Management Plan (GMP), Land Protection Plan, and Wilderness Suitability Review, guides the general management of the park and the protection of park natural and cultural resources. The plan contains a review of the suitability of park lands for wilderness preservation. It also describes the park's natural and cultural environments and existing visitor use.

- The 1997 Park Entrance Area and Road Corridor Development Concept Plan /EIS amends the park's 1986 GMP. It contains an updated description of the park's natural and cultural environments and visitor use, focusing on the park road corridor.

Park Resource Information Summary

Climate and Snowfall

The Eielson Visitor Center is situated at 3733 feet elevation on the western side of the outer ranges, north of the central Alaska Range. Moist air from Bristol Bay, to the southwest, arcs around along the north side of the Alaska Range and pushes up against the outer ranges, causing significantly more summer precipitation than at park headquarters further east and lower in elevation. Park records are incomplete, but over the period 1972-2002, Eielson has averaged about 19 inches of precipitation from early June through mid-September. Over this same period park headquarters (elevation 2070) averaged approximately 8 inches, and Wonder Lake Ranger Station (elevation 2119) averaged approximately 11 ½ inches of precipitation. Hard storms can arrive regularly, with five days per month with over one inch of precipitation per day not uncommon. Maximum values of over twelve inches of precipitation in a month have occurred three times since 1972. The mean daily maximum temperature for June, July and August at Eielson is 57 degrees F.

The Toklat sites are at 3000 feet elevation. Because of the higher landforms to the west and south, Toklat is often in a rain shadow of precipitation events occurring at Eielson and Stony Hill. Toklat may average about 10-12 inches of precipitation during the summer months. The temperature average would be somewhat warmer than at Eielson. Both sites can be windy, but in the summer of 2003 the wind at Eielson averaged 5 miles per hour while at Toklat it averaged 3.1 miles per hour.

Air and Water Quality

Denali National Park and Preserve is designated as a Federal Class 1 air quality area. Air quality in the park is generally very good, and no cases of exceeding the National Ambient Air Quality Standards have been documented. The exceptional air quality provides conditions that are outstanding for daytime panoramic views. The park and preserve is managed to achieve the highest attainable air quality levels and visibility standards consistent with mandates specified by ANILCA, the NPS Organic Act, and the Clean Air Act.

The surface waters near Eielson are generally pristine and have not been adversely affected by development. Some of the nearby creeks run turbid during storms or days of heavy snowmelt.

The Toklat River has glacial headwaters. The typical hydrological pattern is to have the highest flows either during the greatest snowmelt on the upper glaciers and snowfields – during late June and early July – or during individual rainfall events. The Toklat River is a braided stream and "transport-limited," which means that there is more sediment than the stream can move. This condition results in many unstable, anastomosing channels that make up the active floodplain. The channels can change location and form seasonally, and usually do so during the peak runoff period of the year.

A small tributary of the Toklat River has created an alluvial fan immediately west of the temporary rest stop. About 15,000 cys of borrow material was extracted from the fan between 1987 and 1989, and some processed gravel is still stockpiled there. The creek flows during snowmelt in late spring and again during rainfall events. It flows mostly to the north side of the fan, but past rainfall events have caused it to jump channels and move to the middle of the fan.

Vegetation, Soils, and Wetlands

At 3733 feet, the Eielson area exemplifies dry tundra, with low forbs and shrubs predominating. Mountain avens, alpine heather, blackish oxytrope, blueberries, numerous saxifrages and composites and a wide variety of other forbs and shrubs cover the slopes. Tall shrubs, such as feltleaf and other tall willows, are common in the creekbeds and in a narrow band adjacent to the fill slope of the park road where warmer soils and runoff from the road increases the water and nutrients available to plants at the toe of the slope.

Springs above the road east and west of Eielson combine with the dry environments to produce a mosaic of microhabitats. This range of wet and dry soils has provided an unexceeded variety of plant species within a short distance from the visitor center, including the parking island. Mountain or tundra soils form directly from bedrock and the slow accumulation of organic matter. The sparseness of these soils is attributable to cold weather extremes and steepness of slopes. The soils in the project area are generally thin and dry.

Wetlands in meadows (mixed herb vegetation on seasonally saturated soil) border the project area. Permafrost has not been studied in the area but can be continuous at higher elevations north of the Alaska Range.

Vegetation at the Toklat project areas is mostly very sparse. Much of the site has been disturbed by active river erosion, gravel extraction activities, or prior bulldozing associated with road construction. What soils have accumulated in places are very thin, and support some wild sweet pea and other legumes, some composites and some low willows.

Wildlife Values and Habitat

Two primary reasons Mount McKinley National Park was established in 1917 were to protect the intact assemblage of sub-arctic wildlife resources and to allow natural processes to continue unaltered by human activities. Outstanding opportunities exist at Eielson to view Dall sheep, caribou, and grizzly bear, as well as more elusive species such as wolves and wolverine. Red fox, arctic ground squirrel, hoary marmot, red-backed vole, collared pika, golden eagles, northern harrier, willow ptarmigan, lapland longspurs, cliff swallows and long-tailed jaegers are also common, while gyrfalcon and northern wheatear are seen. Moose are relatively uncommon, but dispersers are seen.

In mid-summer caribou often seek late-lying snowbanks or windy areas in order to decrease their personal bot fly population. They will feed in the meadows and creek bottoms near Eielson, however, all summer long.

Dall Sheep move into the heights visible above the visitor center for foraging, but generally move on within a few days because the slopes don't provide enough escape terrain.

Grizzly bears are commonly seen from Eielson, both during bear movement to find the latest ripening vegetation and during the bears' quest to dig out the ground squirrels, which are plentiful on the dry slopes around Eielson.

Although the habitat at Toklat is markedly different from that at Eielson, many of the same species are seen there, including grizzly bears, Dall sheep, caribou, wolves, golden eagles, ptarmigan and others. The white spruce forest on the west side of the river also has habitat for moose, lynx, hares, merlins, and kestrels.

Caribou are found in the area and travel in the drainage course during movement between use areas. Primary habitat does not exist in the immediate vicinity of the proposed rest area.

Grizzly bear utilize the drainage course for travel between use areas and for opportunistic scavenging. Pea vine (Hedysarum alpinum) grows well on the alluvial fan above the present rest stop and is a favored food of bears. Poisonous sweet pea (Hedysarum mackenzii) grows well on inactive gravel within the floodplain but is not favored by bears.

A Dall sheep nursery is located on a broad ridge overlooking the drainage course and Park road, immediately east of the east span of the Toklat River bridge. The nursery is 3,000 feet east of and 800 feet above the proposed rest stop.

A wolf den which is used intermittently is located a few miles downstream of the proposed extraction site. Wolves are occasionally seen in the drainage course near the road camp.

The Toklat River does not contain a fishery in the area of proposed operations. Grayling (Thymallus arcticus) have been seen swimming past the Toklat bridge area toward small tributaries upstream in September after the glacial silt in the main river clears up (C. Sheldon, p.35, The Wilderness of Denali, 1930). The abrasive bedload and constant channel changes in the Toklat during most of the summer prevent development of significant aquatic resources in the active area. The streams near the Eielson Visitor Center are too steep to support fish populations.

Cultural Resources

The Denali region of Alaska has fostered a rich prehistory and history of human occupation. The exact extent of human activity is not yet fully known. Early bands of inhabitants were likely migratory, following herds such as caribou, and leaving scanty remains at their temporary camps and game lookout points.

Surveys for cultural resources in the Eielson area have taken place over the past two decades. Two lithics have been found. A single grey chert waste flake was found 15 years ago a few hundred feet below the visitor center and another lithic was found hundreds of yards uphill of the site. No other material was found in the vicinity, indicating that this use was very short-term or that if the sites were larger, they have now eroded away. A determination of eligibility was prepared for Eielson, and the site, as a visitor use area, has been determined by the State Historic Preservation Officer to be eligible for the National Register of Historic Places.

No archeological or historic resources are known from the Toklat area. Additional archeological investigations at Eielson and Toklat will be carried out in the summer of 2004.

Recreation, Visitor Use, and Wilderness Values
The possibility of seeing bears, wolves, caribou, Dall sheep, and other animals against the backdrop of a spectacular subarctic, alpine landscape and vegetation is the cornerstone of a multimillion-dollar tourism industry in Alaska, and the Eielson area fulfills this possibility as well as any area along the road corridor. The views of the Alaska Range are spectacular from the visitor center, but the opportunities to see natural predator-prey interactions are also a primary visitor attraction to the park, especially when the other main attraction, Mt. McKinley, is often behind clouds.

About 95 % of the former Mt. McKinley National Park was designated as wilderness by Section 701 of the Alaska National Interest Lands Conservation Act. Wilderness is an area "without permanent improvements" and with outstanding opportunities for solitude. An 80 acre area straddling the park road at Eielson was excluded from wilderness designation to provide room for the visitor center grounds and to provide the area for a threshhold experience for those visitors willing to leave the buildings and buses and who desire an introduction to classic alpine tundra.

The Toklat area is in a Park development management zone. NPS manages this zone to accommodate major development and intensive use. The wilderness boundaries are upstream of the park road, over 4000 feet downstream, and 800 feet upstream of the proposed sites.

In 1990 the NPS located a temporary rest stop containing 10 portable chemical toilets and picnic tables in the floodplain at the west end of the Toklat River bridges. The primary users of the rest stop are concession tour bus riders, who generally have a box lunch at this site, but all bus riders use the site as a rest stop. The Toklat Road Camp is 2000 feet downstream and is partially visible from the downstream end of the proposed sites.

Park Management
Located on a small dry alpine tundra bench at Mile 65 of the Denali Park Road with a spectacular view of Mt. McKinley and the Alaska Range, the Eielson Visitor Center is the main destination site in Denali National Park and Preserve. The visitor center was constructed in 1959, just after completion of the gravel Denali Highway in 1957 allowed visitors for the first time to drive their cars to see the park. Eielson is approximately 3700 square feet and was constructed during an era of light visitation, with perhaps no more than 50 families arriving by automobile per day.

Today, Eielson is visited by over 1000 people per day for most of the summer. It is a place where over 50% of the shuttle buses and visitors reach the farthest part of their visit to the interior of the park. Short interpretive programs are given throughout the day and the naturalist desk and bookstore are busy also. Many visitors have their lunch at the picnic tables during good weather and look for near and distant animals from the observation deck.

Water for visitor center is piped from a spring uphill and just east of creek 200 yards from the building. A septic tank and leach field are underground in the tundra east of the building below the parking lot. A diesel generator in a small structure at the east end of the parking lot now runs 12 hours out of every 48 to power the building and charge a battery bank to power the building for the other 36 hours.

For over 50 years, Toklat has been the main park maintenance and administrative center west of park headquarters. Over 30 seasonal and permanent employees work out of there each summer, including roads and buildings maintenance workers, rangers, park naturalists, and researchers. Contract employees working on

major road repair projects or other construction projects often are housed there. Gravel extraction has been a major effort at Toklat, first from 1987-1989 at the alluvial fan near the west Toklat Bridge, and since 1992 in the active floodplain of the Toklat River near the road camp. The gravel extraction site at the lower end of the alluvial fan has not been restored to natural conditions and includes minor stockpiles of gravel. A gravel processing site was finally established below the Toklat Road Camp in 2003 with the installation of 1700 feet of sheetpile to protect the site from erosion by the Toklat River. A Gravel Acquisition Plan was also finalized in 2003 and the park plans to extract 11,100 cubic yards of river gravel each year from the Toklat River floodplain for processing and use on the park road.

For many years, through 1989, the visitors on the Tundra Wildlife Tour buses would have their lunch at a pullout near a soapberry patch east of the east Toklat Bridge. Because of increasing concerns about use of the site while grizzly bears were eating soapberries, the chemical toilets from this site were moved to a site below the alluvial fan gravel processing site in 1990, and both the Tour Buses and the Shuttle Buses have been stopping there for a rest break since then. Both the Shuttle and Tour systems generally stop at the Toklat Rest stop and Polychrome Rest Stop once during their round trip.

IV. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Assumptions for Impact Analysis

This section contains an evaluation of the direct and indirect environmental impacts of the proposal alternatives. The analysis assumes that the mitigation identified in the *Mitigation and Monitoring* section (pages 12-13) of this environmental assessment would be implemented under any of the action alternatives.

Cumulative impacts were analyzed to add up the incremental impacts to the environment resulting from adding the alternatives to other past, present, and reasonably foreseeable future actions. The cumulative impacts relate primarily to a predicted steady visitation to the park and use of the park bus systems or a slight growth in visitation.

Alternative 1 – Existing Conditions (No Action)

Vegetation and Soils

No dwarf shrub or forb tundra vegetation would be removed or disturbed under an alternative to keep the existing visitor center and rest stop. It is likely that the existing leach field would fail within the next 3-10 years, however, and new leach lines would be placed downhill of the old ones. Up to 0.5 acre of dwarf shrub tundra would be removed for a new leach field. Because tens of thousands of acres of alpine tundra exist along the west end of the park road, the loss of one-half acre would have a minor impact.

Wetlands

No wetlands would be filled or disturbed under this alternative.

Wildlife and Habitat

Wildlife habitat for small mammals, birds, and large mammals would be affected by this alternative in a minor way. Continued visitor and employee use of the Eielson area and present Toklat rest stop would result in continued local avoidance of the areas by some grizzly bears, Dall sheep and other wary animals. Additional

future visitors, if spending more time on adjacent land, could widen the existing zone of disturbance that tends to keep most animals away from the building, parking lot and immediate grounds.

The replacement of the leachfield would reduce the dwarf shrub habitat by one-half acre. The land above the present leachfield would be rehabilitated. Because tens of thousands of acres of alpine tundra exist along the west end of the park road, the loss of one-half acre of wildlife habitat would have a minor impact.

Air Quality
There would be a negligible-minor adverse effect on air quality from the emissions produced by the use of the diesel generator at Eielson and concentrated use of motor vehicles at times at both Eielson and Toklat. The diesel generator is running only ¼ of the hours that it did two years ago due to the installation of a battery bank. Funding is being sought to convert the generator and bus fleet to run on natural gas rather than diesel, which would reduce emissions.

Water Quality
Water quality would not be altered by this alternative.

Floodplains
Continued erosion of the bank edge by the Toklat River is inevitable. Floodplain resources would be affected if emergency responses were necessary due to mitigate erosion by the Toklat River toward the service road or Road Camp. Work to protect the road and road camp would include using heavy equipment to divert the Toklat River upstream into different channels and bringing in rip-rap to protect the bank being eroded.

Sound Quality
There would continue to be a minor adverse impact to the opportunity to hear natural sounds due to running the diesel generator at Eielson 12 out of 48 hours. The generator can be heard both in the environs of the building and in the nearby surrounding area, depending on wind strength and direction.

Cultural Resources
No known cultural resources would be affected under this alternative.

Visual Resources
The visitor center would continue to be viewed critically as a structure that contrasts with the landscape. The Toklat Rest Stop would remain stark and exposed.

Visitor Use and Recreation
Visitors would continue to find limited interpretive materials at Eielson. There would be no protected eating space for the picnics that are often an integral part of enjoying the scenery. Visitors would continue to voice disappointment to staff at the building design that has little connection to the landscape, and is falling apart at the seam. The lower floor would not be ADA accessible.

The facilities at Toklat would continue to feel as temporary as they did when installed 14 years ago. Visitors using the chemical toilets would continue to line up in a very exposed location that often is hit by strong winds carrying sand and grit from the glacial river floodplain.

Park Management
Park interpretive personnel would continue to disseminate public information and interpretive programs from the present visitor center. Interpretive facilities at Eielson would remain limited by lack of space. Nature study materials, props, and program aids would have to be stored off-site because of the lack of interpretive storage space. The present structure limits the information that can presented, immediately and within the short time-frame that visitors typically have, by having little room, little wall space, and no areas set aside for special programs. The small space also limits the park's ability to provide a cohesive interpretive presentation to the visitors - only a small number of topics can be addressed. There would remain no protected eating space at Eielson.

There would remain no protected space at the Toklat Rest Stop. During rain or wind events, visitors would likely have to stay on the buses for the duration of their breaks. There would be no facilities to display interpretive exhibits at Toklat.

There would potentially be a major impact at Toklat from erosion by the Toklat River. The sheet pile installed in 2003 is not tied back into bedrock and upstream erosion could eat into the service road, potential and present rest stop sites, and could get behind the existing sheet pile to threaten the Road Camp.

Local Communities/Socioeconomic Resources
This alternative would not encourage additional visitors to ride a bus to Eielson. However, this alternative would have little or no adverse effect on the social and economic resources in the area.

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

***Conclusion**:* This alternative would result in continuance of the status quo for visitors at the west end of the park road. Visitor opportunities to view and attend in-depth interpretive displays and programs would remain limited.

In summary, this alternative would not impair park resources, but it also would not achieve the objectives to provide an appropriate facility to enhance the use of the Eielson site for on-site park resource interpretation and as a bus passenger rest stop. The existing facility is undersized, falling apart, does not serve visitors well, is not ADA compliant, and does not harmonize with the landscape.

Alternative 2 -- Replace Eielson Visitor Center on Site and Construct Toklat Rest Stop at Downstream Site (NPS Preferred Alternative)

Vegetation and Soils
About 1.3 acres of alpine tundra and soil would be removed or disturbed during the construction of the new visitor center, leach field, and parking lot. An additional 3.25 acres of thinly vegetated alluvial fan would be disturbed at Toklat for the new access road, rest stop facilities and protective berms, sheetpile installation and new trail. Another 1.65 acres of ground presently disturbed by the gravel extraction area and service road would also be used for Toklat facilities.

About 0.5 acres of former alpine tundra would be restored at the existing Eielson leach field by using tundra removed and saved during construction. An additional 4.65 acres would be recontoured and then re-seeded with native legumes at the former Toklat temporary rest stop, abandoned section of Toklat service road, and alluvial fan gravel extraction site. There would be no net loss of vegetation and soils. The DCP/EIS allows 2.1 acres of disturbance for replacing Eielson and another 2.3 acres for constructing a permanent rest stop and new trail at Toklat. Because tens of thousands of acres of alpine tundra and thinly vegetated alluvial fan gravel soils exist in the west end of the park road, the loss of 4.55 acres would be a minor impact to vegetation resources.

The NPS would limit impacts to wet and dry alpine vegetation at the Eielson spring box and water line by using only hand tools to replace those facilities. Heavy equipment, which would widen the disturbance footprint, would not be used.

***Cumulative Effects**:* The total acreage of existing disturbance along the west end of the park road is approximately 75 acres and is limited to the park road and administrative and visitor facilities at Toklat, Stony and Eielson. Under this alternative the total would increase to about 79 1/2 acres. No other future projects are anticipated along this part of the road corridor that would not utilize previously disturbed ground. The vegetation removal from this alternative is not expected to have a significant cumulative impact on the tens of thousands of acres of alpine tundra or other vegetation resources along the west end of park road.

***Conclusion**:* The removal of a maximum of 4.55 acres of alpine tundra and alluvial fan vegetation and soil would result in a minor adverse impact to vegetation and soil along the west end of the park road. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wetlands

Less than 0.01 acres of riparian zone wetlands would be disturbed at Eielson by replacement of the spring box, by the installation of the hydro power plant, collection boxes and piping, and by installation of sheetpile at Toklat.

The hydro plant would remove water from two small creeks and return it a few hundred feet downstream. In order to keep the riparian zone soils at least damp, the collection boxes would be closed when dry conditions reduce the stream discharge to less than 1 ½ of the pipe discharge. These conditions are not expected in the tributary below the springs, although they are likely at the end of the summer in the main stream. There would be a negligible effect on the wetland functions of water storage, habitat, erosion control and water quality. The sheetpile and other bank stabilization at Toklat would be installed at the bank edge and would not affect wetland functions such as water storage or aquatic habitat. All of these actions would require Section 404 permits from the Corps of Engineers.

Though wetlands provide important wildlife habitat and buffer surrounding areas from flooding, the very small area that would be impacted would reduce these impacts to a negligible effect.

***Cumulative Effects**:* About 12 acres of wetlands have been impacted by previous road, trail, and building construction in the Eielson and Toklat areas. These areas of the park contain thousands of acres of similar wetlands such as wet tundra and riparian zones. No foreseeable additional projects are planned for wetland areas in the Eielson-Toklat area. Because the area of wetlands adversely impacted would be small, there would be no loss of wetlands function in the park.

***Conclusion**:* The disturbance of less than 0.01 acres of riparian zone wetlands for the sheet pile installation at Toklat and the hydro plant installation at Eielson would result in no loss of wetlands or wetlands function in the park. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wildlife and Habitat

This alternative would reduce wildlife habitat for small mammals, birds and large mammals by 1.3 acres at Eielson and by 3.25 acres at Toklat. This is close to the 4.4 acres of disturbance estimated in the DCP/EIS. Existing use of these sites by large mammals such as grizzly bears, caribou and wolves is limited due to ongoing use of the facilities by people and vehicles. The wild sweet pea that grows on the alluvial fan at Toklat would be replaced during revegetation efforts at nearby previously disturbed sites. Suitable similar habitat is plentiful in these areas and these reductions would have a minor adverse impact to wildlife. This amount of disturbance is similar to that evaluated in the DCP/EIS and the specific sites being disturbed would bring no additional adverse impacts to wildlife habitat. About 0.5 acres of alpine tundra habitat would be restored at the existing Eielson leach field and 4.65 acres would be re-contoured and restored as wildlife habitat at the former Toklat temporary rest stop, abandoned section of Toklat service road, and alluvial fan gravel extraction site.

During the two year construction period, additional noise and human activity at Eielson and the Toklat site would cause a minor disturbance to wildlife and cause them to temporarily disperse from the affected and adjacent areas. This impact would diminish during periods of construction inactivity, and would likely be difficult to differentiate from the normal level of daily impact that is due to visitor and administrative activities at Eielson and Toklat.

The new facilities would not lengthen the operating season or season of disturbance to wildlife habitat. The large viewing windows at Eielson would be canted downward as they are now, which has proven effective in limiting bird crashes to near zero.

For about 1200 feet of length the sheetpile would make it more difficult for caribou, bears and other animals to move from the Toklat floodplain to the adjacent uplands and back again. This would not be the case where the sheetpile is buried or gabion-cored berms are used or where vehicle access breaks are designed every 300-400 feet into the bank stabilization. This minor impact to wildlife movement would be monitored and mitigation would be evaluated should any incidents or impacts be identified.

***Cumulative Effects**:* The total acres of disturbance to wildlife habitat in the Eielson-Toklat area is about 75 acres. This includes acres of habitat removed for the Eielson Visitor Center, Toklat Road Camp and park road and related pullouts. No other future projects are anticipated along this part of the road corridor aside from road rehabilitation projects. Because thousands of acres of similar habitat exist in the vicinity, this alternative is not expected to have a significant cumulative impact on the wildlife and their habitat in the Eielson-Toklat area.

***Conclusion**:* The clearing of 4.55 acres of wildlife habitat would result in minor adverse impacts on wildlife and their habitat. There would be no net decrease in wildlife habitat after including reclamation of existing disturbed sites. The impact to wildlife and their habitat would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Air Quality

Local air quality would be temporarily reduced by vehicle emissions from the use of heavy machinery during construction activities. Emissions from heating a larger space at Eielson would be minimal because of passive

solar designs to heat interior spaces during summer and closing the building during winter. Use of alternative energy sources such as photovoltaic panels and the hydro plant would reduce the need for and emissions from the propane generator from 12 out of 48 hours to an average of 4 out of 48 hours. The use of small propane heaters for the visitor buildings at Toklat would have a negligible effect on local air quality.

***Cumulative Effects**:* Air quality in the Eielson-Toklat area is generally excellent but can be significantly affected by summer forest fires from many miles away. Locally it is affected by emissions from the bus and vehicular traffic along the park road and by park power plants at Toklat and Eielson. Funding is being sought to convert the bus fleet to run on natural gas rather than diesel, which would reduce emissions from the bus fleet. The temporary increase in emissions from construction equipment brought in for the project would be negligible. Though an incremental improvement is expected from a reduction in power plant emissions at Eielson and from the use of renewable energy sources such as hydro and solar, the net effect would be small compared to the potential air quality effects from outside sources. Nevertheless, a net long-term minor positive effect is expected from the installation of alternative energy systems at Eielson.

***Conclusion**:* This alternative would have a negligible impact on air quality and would be consistent with the intent of the air quality goal for Denali to maintain or improve air quality in the park. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Water Quality

The ramps and other structures at Eielson would be designed so that surface wash from precipitation events would not be more concentrated than it is now. This could require numerous water bar-type breaks in the long outdoor ramp and energy dissipation structures where the runoff leaves the ramps. Water runoff would likely increase temporarily during construction prior to installation of these structures. Surface water runoff effects, such as erosion, would be controlled, however, by silt fencing and other best management practices during construction.

The replacement of the water system at Eielson would have a negligible effect on water quality as it would only copy what is there now, but with different materials. The installation of a hydro plant would also have a negligible effect on water resources. Streamflow in the "spring" branch of the stream would continue to be markedly higher than the amount removed. Streamflow in the intermittent branch of the drainage would be removed when the discharge allows; otherwise the collection box would be closed.

***Cumulative Effects**:* Past present and future impacts to surface water runoff and water quality in the area would be from road construction and from building and utility construction. The park road between Toklat and Eielson was constructed in the 1930s and most of the road backslopes and fill slopes have revegetated since then so that surface runoff over the remaining exposed ground has sediment filtered out. Bare ground is a common condition at higher elevations along glacial river floodplains, such as at Toklat, and the contribution to the sediment load of the Toklat River from this level of construction activity would not be measurable. The cumulative impact of adding actions from this alternative to other past present and future actions would be negligible.

***Conclusion**:* Adverse impacts to surface water and groundwater from the proposed project, such as siltation or hydrocarbon pollution, would be negligible if adequate design and engineering controls are implemented. This

impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or in a violation of requirements under the Clean Water Act.

Floodplains
The hydro plant at Eielson would remove water from two small creeks and return it a few hundred feet downstream. In order to keep the riparian zone soils at least damp, the collection boxes would be closed when dry conditions reduce the stream discharge to less than 1 ½ of the pipe discharge. These actions would have a negligible effect on floodplain values such as flood protection, fish habitat and user safety.

The new Rest Stop at Toklat would include protection from natural flooding for a small part of the lower area of the alluvial fan. The more active area of the fan is uphill and would not be affected by the rest stop berms. This proposal would result in a minor adverse impact to natural floodplain processes. An acreage of the fan larger than the project area would be restored to natural conditions.

The proposed sheet pile at Toklat would preserve the status quo with regard to upland versus floodplain acreage. This would have a negligible effect on floodplain resources. Design constraints for the proposed bank stabilization would include constructed "roughness" to prevent the river from speeding up as it courses next to the sheetpile. The potential for any significant adverse impacts to floodplain resources is negligible. *See Appendix B, a Floodplains Statement of Findings.*

***Cumulative Effects**:* Sheetpile bank stabilization at the Toklat gravel processing area was installed in 2003 with vehicle openings and other "roughness" on the outer surface. Other impacts to the floodplain have included bridge construction for the park road and annual gravel extraction. Road construction and use of the spring as a water supply at Eielson have had only a negligible-minor effect on water supply or other floodplain values. Gravel extraction removes only 5% of the annual bedload of the Toklat River and has had only a negligible- minor effect on any measurable floodplain function such as habitat. The proposal would add a minor impact to floodplain functioning of the alluvial fan and the Toklat floodplain and a negligible effect on the Eielson streambeds. The cumulative impact of adding actions from this alternative to other past present and future actions would be minor.

***Conclusion**:* Adverse impacts to floodplain resources from the proposed project, such as catastrophic flooding, changes in drainage or erosion patterns, or changes in the ability to support aquatic resources would be negligible-minor if adequate design and engineering controls are implemented. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or in a violation of requirements under the Clean Water Act.

Sound Quality
Local sound quality would be temporarily reduced by the use of heavy machinery during construction activities. The use of alternative energy sources such as photovoltaic panels and the hydro plant would reduce the need for and noise from the generator by three-fourths. The hydro plant noise would be contained in the small valley, and would be minimized by the use of BMP sound-proofing. A minor benefit to the sound environment is expected after the project is completed.

Cumulative Effects: Sound quality in the immediate Eielson area is usually experienced with a background of natural sounds, such as bird calls and the wind, but it is routinely interrupted by buses and other vehicles moving in and out of the parking lot, and by use of the generator. Sound quality in the Toklat area depends on

the wind, which is usually from the south and which tends to keep generator and other equipment sounds from the Toklat Road Camp from reaching the rest stop. The Toklat rest stop also can have loud river noise in mid-summer which can cover up many distant sounds. Though an incremental improvement is expected from a reduction in generator noise at Eielson and from the use of renewable energy sources such as hydro and solar, the net effect would be small compared to the noise from buses and other vehicles at Eielson and from the road noise and Road Camp equipment noise at Toklat. The temporary increase in noise from construction equipment brought in for the project would be negligible. Nevertheless, a net long-term minor positive effect is expected from the installation of alternative energy systems at Eielson.

Conclusion*:* This alternative would be a minor benefit to sound quality and would be consistent with the intent of the sound quality goal for Denali to maintain or improve sound quality in the park. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Cultural Resources

The Eielson Visitor Center was determined in 2003 by the State Historic Preservation Officer to not have historic significance. The site, however, is significant, in the context of visitor use. Nothing in the project plans would adversely affect the use of the site for visitor enjoyment.

Two archeological artifacts have been found in the Eielson area. None have been found in the Toklat area. Further archeological surveys will occur before construction and should any currently unknown cultural resources be found the Superintendent would be notified and work would stop until the significance is evaluated.

Cumulative Effects*:* There have been no adverse impacts to cultural resources in the Eielson-Toklat area and none are anticipated.

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

Visual Resources

The new structure at Eielson would be designed to place a larger facility on the former site in a way that has less impact to visual resources. The structure would be less visible from a distance because the main floor would be set into the ground and the roof would be surfaced with numerous large tundra planters. Moderate temporary visual impacts would occur during construction of the new visitor center, but long-term impacts to visual resources would be minor because the new visitor center would be less visible, or at least less in contrast to the landscape, than the existing facility.

The new Toklat Rest Stop would be partially shielded from the park road by a greater distance from the park road and by gravel berms. Moderate temporary visual impacts would occur during construction of the new rest stop and reclamation of the old rest stop and gravel extraction site. Long-term impacts to visual resources from the project would be minor or possibly beneficial because the Toklat Rest Stop would be further away from the park road at present and partially shielded from the park road. The elimination of remnants of the alluvial fan extraction site would also help by cleaning up unnecessary impacts to the natural landscape.

The change in visual impact from the former visitor center and rest stop facilities would be minor and beneficial.

***Cumulative Effects**:* Past impacts on visual resources include the visitor center, rest stop and park road. The park road would remain unchanged. The design of the new facilities would blend in better with the environment than the old facilities.

***Conclusion**:* The construction of a new visitor center that is nestled into the landscape would contribute a minor long-term benefit to visual resources in the Eielson area. The construction of a new screened rest stop at Toklat 700 feet downstream of the park road, in combination with reclamation of the former gravel extraction site and the present rest stop, would have a moderate long-term benefit to the main body of visitors on the park road. Short-term minor adverse impacts would occur during the two summer of construction at Eielson and the short period of construction at Toklat. These impacts would not result in an impairment of park scenic resources fulfilling specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Visitor Use and Recreation

The facilities at Toklat and Eielson are the main places for interpretive and educational contact with visitors in that part of the park in addition to the bus ride experience. Recreational opportunities for shuttle bus riders would be adversely affected for two years by the construction of the new visitor center and by the shortening of the bus trip to Stony at mile 62 instead of Eielson at Mile 66. This would have a moderate impact on the quality of the visit, as the four miles beyond Stony is in the heart of the wildlife and scenic attractions that people come to see. Noise and visual impacts in the construction areas would temporarily inconvenience park visitors.

The new Eielson Visitor Center would be a much improved facility for all park visitors who get that far into the park, and a successful facility would likely attract more visitors than would otherwise travel there. Visitor use in the Eielson and Toklat areas is tied to the park bus systems and could increase by 10-20 per cent in the next 10-15 years if visitors would use presently unfilled bus seats. The expanded and improved interpretive exhibits and opportunities would benefit all visitors who stop there. The improved picnic areas would provide a range of opportunities no matter what the weather.

A permanent rest stop at Toklat would also improve the visitor experience over the chemical toilets presently in place and would provide opportunities for interpretive education. The downstream site would provide maximum screening of the facility for those visitors on the park road. Since there would be sheetpile installed at the site and a 6-10 foot drop down to the river level, the proposed trail would facilitate visitors walking upstream to an area where they could get down to the water level, near the present site, and then back up to the service road to catch their bus. Putting the facility at a site where the full force of the Toklat River would run along the sheetpile would also provide visitors with an exciting perch.

Both the new Eielson and the Toklat Rest Stop would meet the NPS goal of providing quality to the types of facilities and programs in which the NPS traditionally specializes.

***Cumulative Effects**:* Visitor use in the Eielson and Toklat areas has benefited by the construction of the park road and interpretive and rest stop facilities. New facilities at Eielson would enhance the average visit and would support visitors who seek additional wilderness recreational opportunities. These permanent facilities are considered to benefit park visitor experiences and recreational opportunities.

***Conclusion**:* The preferred alternative would moderately enhance the visitor experience for most of the visitors using Denali's shuttle and wildlife tour bus systems.

Park Management
The proposed alternative would replace existing facilities, not create new types of facilities or new development areas Park operations such as transportation services, building and utility maintenance, and information gathering and dissemination would be affected in positive ways. The proposed replacement and expansion of the Eielson Visitor Center would create a facility that would blend in with the landscape, be easier to maintain, easier to set up for interpretive displays and would be ADA compliant. The building would meet management goals by serving the visitor better by having enough rest rooms, picnic space, and interpretive space to meet the demands of the times during the day when a group of buses arrive at the same time. Also, the facilities would help the NPS meet future demands should the tour bus system offer a tour that includes Eielson.

Additionally, a newly designed visitor center better accomplishes park goals for sustainability.

The proposed new rest stop, bank stabilization, and rehabilitation of abandoned facilities at Toklat would meet many park management goals. The present chemical toilet rest stop would be professionally designed to fulfill the functions of a safe and protected place to take a break and to be exposed to interpretive information. The new vault toilets would eliminate the use of the strong chemicals that need to be routinely pumped into the park sewage lagoons from the chemical toilets. The bank stabilization part of the project would connect with existing sheet pile to protect all of the facilities and undeveloped ground at the Toklat development area, including the service road, Road Camp, rock crusher area and as well as a new rest stop. The rehabilitation of the alluvial fan gravel extraction area would allow natural recovery of the area and remove scattered gravel piles that detract from the natural scenery.

Cumulative Effects: Existing management facilities include the park road, visitor center, Toklat Road Camp and the Toklat Rest Stop. This proposal would have a moderate beneficial effect on the park management facilities by replacing worn-out or undersized structures with appropriately sized structures.

Conclusion*:* The preferred alternative would improve NPS opportunities to serve the park visitor through better information and facilities.

Local Communities/Socioeconomic Resources
This alternative could encourage additional visitors to ride one of the bus systems to Eielson if the new structure is designed well and provides a memorable interpretive experience. Should more visitors come and stay in the local area in preparation for an all-day trip to Eielson, there could be a moderate beneficial effect on the local hotels and other businesses.

Cumulative Effects*:* There would be no increase or decrease in competition with business outside the park. The improved facilities at Eielson and Toklat could lead to additional visitation which would benefit the local economies.

Conclusion*:* The proposed new visitor facilities at Eielson and Toklat would complement services provided outside the park and could stimulate the local economy.

Alternative 3 –Replace Eielson Visitor Center on site and Construct Toklat Rest Stop at Upstream site

Vegetation and Soils
About 1.3 acres of alpine tundra and soil would be removed or disturbed during the construction of the new visitor center, leach field, and parking lot at Eielson. An additional 1.45 acres of thinly vegetated alluvial fan would be disturbed at Toklat for the new access road, rest stop facilities, protective berms, and sheetpile installation. Another 1.4 acres presently disturbed by the existing rest stop would also be used for new Toklat facilities.

About 0.5 acres of former alpine tundra would be restored at the existing Eielson leach field by using tundra removed and saved during construction. An additional 4.5 acres would be recontoured and re-seeded with native legumes at the former Toklat alluvial fan gravel extraction sites above and below the road. There would be no net loss of vegetation and soils. The DCP/EIS allows 2.1 acres of disturbance for replacing Eielson and another 2.3 acres for constructing a permanent rest stop and new trail at Toklat. Because tens of thousands of acres of alpine tundra and thinly vegetated alluvial fan gravel soils exist in the west end of the park road, the loss of 2.75 acres would be a minor impact to vegetation resources.

The NPS would limit impacts to wet and dry alpine vegetation at the Eielson spring box and water line by using on hand tools to replace those facilities. Heavy equipment, which would widen the disturbance footprint, would not be used.

Cumulative Effects*:* The total acreage of existing disturbance along the west end of the park road is approximately 75 acres and is limited to the park road and administrative and visitor facilities at Toklat, Stony and Eielson. Under this alternative the total would increase to about 78 acres. No other future projects are anticipated along this part of the road corridor that would not utilize previously disturbed ground. The vegetation removal from this alternative is not expected to have a significant cumulative impact on the tens of thousands of acres of alpine tundra or other vegetation resources along the west end of park road.

Conclusion*:* The removal of 2.75 acres of alpine tundra and alluvial fan vegetation and soil would result in a minor adverse impact to vegetation and soil along the west end of the park road. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wetlands
Less than 0.01 acres of riparian zone wetlands would be disturbed at Eielson by replacement of the spring box, by the installation of the hydro power plant, collection boxes and piping, and by installation of sheetpile at Toklat.

The hydro plant would remove water from two small creeks and return it a few hundred feet downstream. In order to keep the riparian zone soils at least damp, the collection boxes would be closed when dry conditions reduce the stream discharge to less than 1 ½ times the pipe discharge. These conditions are not expected in the tributary below the springs, although they are likely at the end of the summer in the main stream. There would be a negligible effect on the wetland functions of water storage, habitat, erosion control and water storage. The sheetpile and other bank stabilization would be installed at the bank edge and would not affect wetland functions such as water storage or aquatic habitat. All of these actions would require Section 404 permits from the Corps of Engineers.

Though wetlands provide important wildlife habitat and buffer surrounding areas from flooding, the very small area that would be impacted would reduce these impacts to a negligible effect.

***Cumulative Effects**:* About 12 acres of wetlands have been impacted by previous road, trail, and building construction in the Eielson and Toklat areas. These areas of the park contain thousands of acres of similar wetlands such as wet tundra and riparian zones. No foreseeable additional projects are planned for wetland areas in the Eielson-Toklat area. Because the area of wetlands adversely impacted would be small, there would be no loss of wetlands function in the park.

***Conclusion**:* The disturbance of less than 0.01 acres of riparian zone wetlands for the sheet pile installation at Toklat and the hydro plant installation at Eielson would result in no net loss of wetlands or wetlands function in the park. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Wildlife and Habitat

Wildlife habitat for small mammals, birds, and large mammals would be reduced by 1.3 acres by development at Eielson and by 1.45 acres at Toklat. This is less than the 4.4 acres of disturbance estimated in the DCP/EIS. Existing use of these sites by large mammals such as grizzly bears, caribou and wolves is limited due to ongoing use of the facilities by people and vehicles. The wild sweet pea that grows on the alluvial fan at Toklat would be replaced during revegetation efforts at nearby previously disturbed sites. Suitable similar habitat is plentiful in these areas and these reductions would have a minor adverse impact to wildlife. This amount of disturbance is similar to that evaluated in the DCP/EIS and the specific sites being disturbed would bring no additional adverse impacts to wildlife habitat. About 0.5 acres of alpine tundra habitat would be restored at the existing Eielson leach field and 4.5 acres would be recontoured and restored as wildlife habitat at the former Toklat alluvial fan gravel extraction site, both above and below the service road.

During the two year construction period, additional noise and human activity at Eielson and the Toklat site would cause a minor disturbance to wildlife and cause them to temporarily disperse from the affected and adjacent areas. This impact would diminish during periods of construction inactivity, and would likely be difficult to differentiate from the normal level of daily impact that is due to visitor and administrative activities at Eielson and Toklat.

The new facilities would not lengthen the operating season or season of disturbance to wildlife habitat. The large viewing windows at Eielson would be canted downward as they are now, which has proven effective in limiting bird crashes to near zero.

For about 1200 feet of length the sheetpile would make it more difficult for caribou, bears and other animals to move from the floodplain to the adjacent uplands and back again. This would not be the case where the sheetpile would be buried, where gabion-cored berms are used or where vehicle access breaks are designed every 300-400 feet into the bank stabilization. This minor impact to wildlife movement would be monitored and mitigation would be evaluated should any incidents or impacts be identified.

***Cumulative Effects**:* The total acres of disturbance to wildlife habitat in the Eielson-Toklat area is about 75 acres. This includes acres of habitat removed for the Eielson Visitor Center, Toklat Road Camp and park road and related pullouts. No other future projects are anticipated along this part of the road corridor aside from road rehabilitation projects. Because thousands of acres of similar habitat exist in the vicinity, this alternative is not expected to have a significant cumulative impact on the wildlife and their habitat in the Eielson-Toklat area.

***Conclusion**:* The clearing of 2.75 acres of wildlife habitat would result in minor adverse impacts on wildlife and their habitat. There would be no net decrease in wildlife habitat after including reclamation of existing disturbed sites. The impact to wildlife and their habitat would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Air Quality

Local air quality would be temporarily reduced by vehicle emissions from the use of heavy machinery during construction activities. Emissions from heating a larger space at Eielson would be minimal because of passive solar designs to heat interior spaces during summer and closing the building during winter. Use of alternative energy sources such as photovoltaic panels and the hydro plant would reduce the need for and emissions from the propane generator from 12 out of 48 hours to an average of 4 out of 48 hours. The use of small propane heaters for the visitor buildings at Toklat would have a negligible effect on local air quality.

***Cumulative Effects**:* Air quality in the Eielson-Toklat area is generally excellent but can be significantly affected by summer forest fires from many miles away. Locally it is affected by emissions from the bus and vehicular traffic along the park road and by park power plants at Toklat and Eielson. Funding is being sought to convert the bus fleet to run on natural gas rather than diesel, which would reduce emissions from the bus fleet. The temporary increase in emissions from construction equipment brought in for the project would be negligible. Though an incremental improvement is expected from a reduction in power plant emissions at Eielson and from the use of renewable energy sources such as hydro and solar, the net effect would be small compared to the potential air quality effects from outside sources. Nevertheless, a net long-term minor positive effect is expected from the installation of alternative energy systems at Eielson.

***Conclusion**:* This alternative would be consistent with the intent of the air quality goal for Denali to maintain or improve air quality in the park. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Water Quality

The ramps and other structures at Eielson would be designed so that surface wash from precipitation events would not be more concentrated than it is now. This could require numerous water bar-type breaks in the long outdoor ramp and energy dissipation structures where the runoff leaves the ramps. Water runoff would likely increase temporarily during construction prior to installation of these structures. Surface water runoff effects, such as erosion, would be controlled, however, by silt fencing and other best management practices

The replacement of the water system at Eielson would have a negligible effect on water quality as it would only copy what is there now, but with different materials. The installation of a hydro plant would also have a negligible effect on water resources. Streamflow in the “spring” branch of the stream would continue to be markedly higher than the amount removed. Streamflow in the intermittent branch of the drainage would be removed when the discharge allows; otherwise the collection box would be closed.

The sheet pile at Toklat would preserve the status quo with regard to upland versus floodplain acreage. This would have a negligible effect on water quality. The potential for any significant adverse impacts to water quality is negligible.

***Cumulative Effects**:* Past present and future impacts to surface water runoff and water quality in the area would be from road construction and from building and utility construction. The park road between Toklat and Eielson was constructed in the 1930s and most of the road backslopes and fill slopes have revegetated since then so that surface runoff over the remaining exposed ground has sediment filtered out. Bare ground is a common condition at higher elevations along glacial river floodplains, such as at Toklat, and the contribution to the sediment load of the Toklat River from this level of construction activity would not be measurable. The cumulative impact of adding actions from this alternative to other past present and future actions would be negligible.

***Conclusion**:* Adverse impacts to surface water and groundwater from the proposed project, such as siltation or hydrocarbon pollution, would be negligible if adequate design and engineering controls are implemented. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or in a violation of requirements under the Clean Water Act.

Floodplains

The hydro plant at Eielson would remove water from two small creeks and return it a few hundred feet downstream. In order to keep the riparian zone soils at least damp, the collection boxes would be closed when dry conditions reduce the stream discharge to less than 1 ½ of the pipe discharge. These actions would have a negligible effect on floodplain values such as flood protection, fish habitat and user safety.

The new Rest Stop at Toklat would include protection from natural flooding for a small part of the lower area of the alluvial fan. The more active area of the fan is uphill and would not be affected by the rest stop berms. This proposal would result in a minor adverse impact to natural floodplain processes. An acreage of the fan larger than the project area would be restored to natural conditions.

The proposed sheet pile at Toklat would preserve the status quo with regard to upland versus floodplain acreage. This would have a negligible effect on floodplain resources. Design constraints for the proposed bank stabilization would include constructed “roughness” to prevent the river from speeding up as it courses next to the sheetpile. The potential for any significant adverse impacts to floodplain resources is negligible. *See Appendix B, a Floodplains Statement of Findings.*

***Cumulative Effects**:* Sheetpile bank stabilization at the Toklat gravel processing area was installed in 2003 with vehicle openings and other “roughness” on the outer surface. Other impacts to the floodplain have included bridge construction for the park road and annual gravel extraction. Road construction and use of the spring as a water supply at Eielson have had only a negligible-minor effect on water supply or other floodplain values. Gravel extraction removes only 5% of the annual bedload of the Toklat River and has had only a negligible- minor effect on any measurable floodplain function such as habitat. The proposal would add a minor impact to floodplain functioning of the alluvial fan and the Toklat floodplain and a negligible effect on the Eielson streambeds. The cumulative impact of adding actions from this alternative to other past present and future actions would be minor.

***Conclusion**:* Adverse impacts to floodplain resources from the proposed project, such as catastrophic flooding, changes in drainage or erosional patterns, or changes in the ability to support aquatic resources would be negligible-minor if adequate design and engineering controls are implemented. This impact would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park or in a violation of requirements under the Clean Water Act.

Sound Quality
Local sound quality would be temporarily reduced by the use of heavy machinery during construction activities. The use of alternative energy sources such as photovoltaic panels and the hydro plant would significantly reduce the need for and noise from the generator. The hydro plant noise would be contained in the small valley, and would be minimized by the use of BMP sound-proofing. A minor benefit to the sound environment at Eielson is expected after the project is completed.

Cumulative Effects: Sound quality in the Eielson area is usually experienced with a background of natural sounds, such as bird calls and the wind, but it is routinely interrupted by buses and other vehicles moving in and out of the parking lot, and by use of the generator. Sound quality in the Toklat area depends on the wind, which is usually from the south and which tends to keep generator and other equipment sounds from the Toklat Road Camp from reaching the rest stop. The Toklat rest stop also can have loud river noise in mid-summer which can cover up many distant sounds. Though an incremental improvement is expected from a reduction in generator noise at Eielson and from the use of renewable energy sources such as hydro and solar, the net effect would be small compared to the noise from buses and other vehicles at Eielson and from the road noise and Road Camp equipment noise at Toklat. The temporary increase in noise from construction equipment brought in for the project would be negligible. Nevertheless, a net long-term minor positive effect is expected from the installation of alternative energy systems at Eielson.

Conclusion*:* This alternative would be a minor benefit to sound quality and would be consistent with the intent of the sound quality goal for Denali to maintain or improve sound quality in the park. These effects would not result in an impairment of park resources that fulfill specific purposes identified in legislation establishing the park nor would they result in a violation of the Clean Air Act requirements.

Cultural Resources
The Eielson Visitor Center was determined in 2003 by the State Historic Preservation Officer to not have historic significance. The site, however, is significant, in the context of visitor use. Nothing in the project plans would adversely affect the use of the site for visitor enjoyment.

Two archeological artifacts have been found in the Eielson area. None have been found in the Toklat area. Further archeological surveys will occur before construction and should any currently unknown cultural resources be found the Superintendent would be notified and work would stop until the significance is evaluated.

Cumulative Effects*:* There have been no adverse impacts to cultural resources in the Eielson-Toklat area and none are anticipated.

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

Visual Resources
The new structure at Eielson would be designed to place a larger facility on the former site in a way that has less impact to visual resources. The structure would be less visible from a distance because the main floor would be set into the ground and the roof would be surfaced with numerous large tundra planters. Moderate temporary visual impacts would occur during construction of the new visitor center, but there would be minor beneficial

long-term impacts to visual resources because the new visitor center would be less visible, or at least less in contrast to the landscape, than the existing facility.

The new Toklat Rest Stop would be partially shielded from the park road by gravel berms. Moderate temporary visual impacts would occur during construction of the new rest stop and reclamation of the old rest stop and gravel extraction site. Long-term impacts to visual resources would be minor because the new Toklat Rest Stop, though it would be a larger facility than at present, would be partially shielded with gravel berms. The elimination of remnants of the alluvial fan extraction site would also help by cleaning up impacts to the natural landscape.

The change in visual impact from the former visitor center and rest stop facilities would be minor and beneficial.

***Cumulative Effects**:* Past impacts on visual resources include the visitor center, rest stop and park road. The park road would remain unchanged. The design of the new facilities would blend in better with the environment than the old facilities. The design of the new facilities would blend in better with the environment than the old or temporary facilities.

***Conclusion**:* The construction of a new visitor center that is nestled into the landscape would contribute a minor long-term benefit to visual resources in the Eielson area. The construction of a new screened rest stop at Toklat, in combination with reclamation of the former gravel extraction site, would have a moderate long-term benefit to the main body of visitors on the park road. Short-term minor adverse impacts would occur during the two summer of construction at Eielson and the short period of construction at Toklat. These impacts would not result in an impairment of park scenic resources fulfilling specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park.

Visitor Use and Recreation

The facilities at Toklat and Eielson are the main places for interpretive and educational contact with visitors in that part of the park in addition to the bus ride experience. Recreational opportunities for shuttle bus riders would be adversely affected for two years by the construction of the new visitor center and by the shortening of the bus trip to Stony at mile 62 instead of Eielson at Mile 66. This would have a moderate impact on the quality of the visit, as the four miles beyond Stony is in the heart of the wildlife and scenic attractions that people come to see. Noise and visual impacts in the construction areas would temporarily inconvenience park visitors.

The new Eielson Visitor Center would be a much improved facility for all park visitors who get that far into the park, and a successful facility would likely attract more visitors than would otherwise travel there. Visitor use in the Eielson and Toklat areas is tied to the park bus systems and could increase by 10-20 per cent in the next 10-15 years if visitors would use presently unfilled bus seats. The expanded and improved interpretive exhibits and opportunities would benefit all visitors who stop there. The improved picnic areas would provide a range of opportunities no matter what the weather.

A permanent rest stop at Toklat would improve the visitor experience over the chemical toilets presently in place and would provide opportunities for interpretive education. The upstream site would allow quick and easy access for the public to the clearwater stream that flows under the west bridge. This opportunity has proven popular with the visitors on buses who otherwise do not have anything similar at any stop along the park road. This site would also provide maximum distance between the rest stop and the Road Camp maintenance yard and housing area.

Both the new Eielson and the Toklat Rest Stop would meet the NPS goal of providing the types of facilities and programs in which the NPS traditionally specializes.

***Cumulative Effects**:* Visitor use in the Eielson and Toklat areas has benefited by the construction of the park road and interpretive and rest stop facilities. New facilities at Eielson would enhance the average visit and would support visitors seeking additional wilderness recreational opportunities. All of these projects are considered to benefit park visitor experiences and recreational opportunities.

***Conclusion**:* This alternative would moderately enhance the visitor experience for most of the visitors using Denali's shuttle and wildlife tour bus systems.

Park Management

The proposed alternative would replace existing facilities, not create new types of facilities or new development areas Park operations such as transportation services, building and utility maintenance, and information gathering and dissemination would be affected in positive ways. The proposed replacement and expansion of the Eielson Visitor Center would create a facility that would blend in with the landscape, be easier to maintain, easier to set up for interpretive displays and would be ADA compliant. The building would meet management goals by serving the visitor better by having enough rest rooms, picnic space, and interpretive space to meet the demands of the times during the day when a group of buses arrive at the same time. Also, the facilities would help the NPS meet future demands should the tour bus system offer a tour that includes Eielson.

Additionally, a newly designed visitor center better accomplishes park goals for sustainability.

The proposed new rest stop, bank stabilization, and rehabilitation of abandoned facilities at Toklat would meet many park management goals. The present chemical toilet rest stop would be professionally designed to fulfill the functions of a safe and protected place to take a break and to be exposed to interpretive information. The new vault toilets would eliminate the use of the strong chemicals that need to be routinely pumped into the park sewage lagoons from the chemical toilets. The bank stabilization part of the project would connect with existing sheet pile to protect all of the facilities and undeveloped ground at the Toklat development area, including the service road, Road Camp, rock crusher area and as well as a new rest stop. The rehabilitation of the alluvial fan gravel extraction area would allow natural recovery of the area and remove scattered gravel piles that detract from the natural scenery.

Cumulative Effects: Existing management facilities include the park road, visitor center, Toklat Road Camp and the Toklat Rest Stop. This proposal would have a moderate beneficial effect on the park management facilities by replacing worn-out or undersized structures with appropriately sized structures.

***Conclusion**:* The preferred alternative would improve NPS opportunities to serve the park visitor through better information and facilities.

Local Communities/Socioeconomic Resources

This alternative could encourage additional visitors to ride one of the bus systems to Eielson if the new structure is designed well and provides a memorable interpretive experience. Should more visitors come and stay in the local area in preparation for an all-day trip to Eielson, there could be a moderate beneficial effect on the local hotels and other businesses.

***Cumulative Effects**:* There would be no increase or decrease in competition with business outside the park. The improved facilities at Eielson and Toklat could lead to additional visitation which would benefit the local economies.

***Conclusion**:* The proposed new visitor facilities at Eielson and Toklat would complement services provided outside the park and could stimulate the local economy.

CONSULTATION AND COORDINATION

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APPENDIX A

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

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluation of potential restrictions to subsistence uses in Denali National Park and Preserve that could result from the construction of a new Eielson Visitor Center, a permanent Toklat Rest Stop, and bank stabilization between the west Toklat River bridge and the sheetpile installed in front of the Toklat Road Camp in 2003.

II. THE EVALUATION PROCESS

Section 810(a) of ANILCA states:

> "In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands . . . the head of the federal agency . . . over such lands . . . shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency -
>
> (1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805;
>
> (2) gives notice of, and holds, a hearing in the vicinity of the area involved; and
>
> (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions."

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

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

including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities."

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

> ". . . to preserve unrivaled scenic and geological values associated with natural landscapes; to provide for the maintenance of sound populations of, and habitat for, wildlife species of inestimable value to the citizens of Alaska and the Nation, including those species dependent on vast relatively undeveloped areas; to preserve in their natural state extensive unaltered arctic tundra, boreal forest, and coastal rainforest ecosystems to protect the resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers, and lands, and to preserve wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting, within large arctic and subarctic wildlands and on free-flowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems.
>
> ". . . consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for which each conservation system unit is established, designated, or expanded by or pursuant to this Act, to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so."

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

III. PROPOSED ACTION ON FEDERAL LANDS

Alternatives 1, 2 and 3 are described in detail in the environmental assessment. Customary and traditional subsistence use on NPS lands will continue as authorized by federal law under all alternatives. Federal regulations implement a subsistence priority for rural residents of Alaska under Title VIII of ANILCA.

The NPS proposes to replace the existing Eielson Visitor Center with a new facility on the same site. A new temporary rest stop would be constructed at Toklat to serve an increased visitor use during the two years of construction at Eielson, and the rest stop facilities would be made permanent when funding permits. Bank stabilization, mostly in the form of sheetpile, would be installed to protect the new rest stop, Toklat service road and road camp, and all of the potential development sites between the west Toklat Bridge and the crusher site downstream 0.8 miles. The site is in the former Mount McKinley National Park wherein subsistence activities are not allowed.

IV. AFFECTED ENVIRONMENT

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

A regional population of approximately 300 eligible local rural residents qualifies for subsistence use of park resources. Resident zone communities for Denali National Park and Preserve are Cantwell, Minchumina, Nikolai, and Telida. By virtue of their residence, local rural residents of these communities are eligible to pursue subsistence activities in the new park additions. Local rural residents who do not live in the designated resident zone communities, but who have customarily and traditionally engaged in subsistence activities within the park additions, may continue to do so pursuant to a subsistence permit issued by the Park Superintendent in accordance with state law and regulations.

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

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

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

V. SUBSISTENCE USES AND NEEDS EVALUATION

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

The evaluation criteria are:

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

The potential to reduce populations:

Land use activities could have temporary and/or long-term impacts on wildlife habitat, depending on the nature and extent of the disturbance.

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

Restriction of Access:

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

Increase in Competition:

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

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

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

VI. AVAILABILITY OF OTHER LANDS

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

VII. ALTERNATIVES CONSIDERED

The alternatives considered for this project were limited to the existing development sites at Eielson (mile 66 of the park road) and Toklat (mile 54 of the park road) in the west end of the park. The alternatives are: **1)** continue to use the existing facilities at Eielson and Toklat (no action); **2)** replace the Eielson Visitor Center with a larger facility on the same site and with an emphasis on a greater harmony between the structure and the landscape, a larger interpretive space, greater use of alternative energy sources, and compliance with ADA guidelines. A new rest stop at Toklat would be constructed downstream of the existing site by about 650 feet at a point where there could be less visibility of the facility from the park road. Bank stabilization would be continued at Toklat to extend from the existing sheetpile that protects the crusher site up past the new rest stop and tying into the west Toklat bridge; **3)** replace the Eielson Visitor Center as in alternative 2. A new rest stop at Toklat would be constructed on top of the existing site to utilize a greater percentage of previously disturbed ground and to set the facility next to a small clearwater channel of the river. Bank stabilization would be the same as with Alternative2. See the EA for more detailed descriptions of the alternatives.

VIII. FINDINGS

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

APPENDIX B

DRAFT
STATEMENT OF FINDINGS
for Executive Order 11988
FLOODPLAIN MANAGEMENT

TOKLAT REST AREA
Denali National Park, Alaska

Recommended:

_____ _____

Superintendent, Denali National Park and Preserve Date

Certified:

_____ _____

Chief, NPS Water Resources Division Date

Approved:

_____ _____

Regional Director, Alaska Region Date

Introduction

The National Park Service (NPS) has prepared and made available for public review an environmental assessment (EA) to evaluate the impacts of building a Rest Area for park visitors near the Toklat River in Denali National Park. The EA is the construction implementation document tiering from an earlier environmental impact statement, the *Entrance Area and Road Corridor Development Concept Plan*, 1997 (DCP/EIS).

The Park Road (gravel) extends west from the park entrance about 90 miles into Denali National Park and ends at the community of Kantishna. The Toklat Rest Area is located near mile 54, at the intersection of the Park Road and the Toklat River. The Rest Area currently serves as a turnaround spot for many park visitors touring on the Park Road. The proposed Rest Area will expand the current facilities and serve as a temporary visitor center during the two year replacement construction of the Eielson Visitor Center, located at mile 66 on the Park Road.

The preferred site alternative for the Toklat Rest Area is on an alluvial fan. The alluvial fan is a sedimentary deposit located at the base of a mountain adjacent to the Denali Park Road. A gravel processing operation and a borrow pit were located on the site for over 10 years but were recently moved to the Toklat Road Camp about ½ mile north (downstream). Currently, there is a temporary Toklat Rest Area consisting of 10 chemical toilets, several picnic tables and parking for 10-15 buses, located at the toe of the alluvial fan, near the west Toklat River Bridge and closer to the Park Road than the preferred alternative site. The access road to the new Rest Area and existing Toklat Road Camp would be re-routed through a previously disturbed area and would be designed such that the streamflow off the alluvial fan would be diverted through a conveyance ditch. Earthen berms are proposed for additional mitigation of alluvial fan flood hazard and for visual screening of the site.

The lateral boundary of the north side of the alluvial fan is very distinct, and shows indications of recent deposition and expansion to the north. Older vegetation on the south side of the fan masks the boundary by visual inspection to some extent; however, the limits of the fan are easily discerned on a topographic map of the area. The entire area of the lower fan is located within the 100-year floodplain, and may be considered to be active. As such, deposition, erosion and unstable flow paths are possible anywhere within the limits of the fan.

The drainage course of the Toklat River is in a 1,200-1,800 foot wide bed. It contains several braided river channels that divide and reunite. The drainage course is unstable and banks are often poorly defined. The streambed is composed of gravel-sized material with occasional cobbles and boulders. Typical of glacially-fed braded rivers in mountainous terrain, the Toklat River carries a large amount of suspended sediment and bed-load which causes the water to be milky in appearance during the melt season. The estimated discharge for the Toklat River is 344 cubic feet per second (cfs). The 1.5-year flood is 1,324 cfs.

The Toklat River does not contain a fishery in the area of the proposed Rest Area. Arctic grayling (*Thymallus arcticus*) are known to migrate in small numbers through the river channel as sediment loads decrease in early fall. The abrasive bedload and constant channel changes in the Toklat River during most of the summer prevent development of significant aquatic resources in the active area.

The west edge of the river channel is actively eroding and widening the channel. This erosion threatens the proposed Toklat Rest Area site and the service road to the Toklat Road Camp. The NPS proposes to stabilize

the west bank of the Toklat River with steel sheet pile and possibly other techniques such as gabions or rip-rap from the existing sheet pile at the Road Camp, upstream through the project area to the west Toklat River Bridge.

Executive Order 11988, *Floodplain Management*, 1977, requires the NPS, and other federal agencies, to evaluate the impacts its actions are likely to have on floodplains. This executive order requires that short and long-term adverse impacts associated with occupancy, modification or destruction of floodplains be avoided whenever possible. Indirect support of development and new construction in such areas should also be avoided wherever there is a practicable alternative.

To comply with this order, the NPS has established procedures for implementing floodplain protection and management actions in units of the National Park System. The revised Procedural Manual #77-2, *Floodplain Management*, 2003, provides guidance for managing activities which may result in the modification or occupation of floodplains or which result in impacts to floodplain values.

The purpose of this Statement of Findings (SOF) is to present the NPS rationale for the proposed construction of the Toklat Rest Area on an alluvial fan near the Toklat River and for the associated stabilization of the Toklat River's west bank.

Justification for Use of the Floodplain

The existing temporary Toklat Rest Area at the toe of the alluvial fan provides limited visitor facilities. Visitors are frequently exposed to windy, rainy conditions while waiting in long lines to use small portable chemical toilets. With the temporary closure of the nearby Eielson Visitor Center facilities expected to last two years, the existing temporary Toklat Rest Area will be inadequate to provide visitor services to people traveling the Park Road. An improved Toklat Rest Area is proposed, to provide both temporary, two-year, high volume visitor services and long-term, lower volume visitor services.

The preferred site for the Toklat Rest Area was chosen for several reasons. The non-wilderness road corridor provides only a few nodes near the Eielson Visitor Center for the development of temporary replacement facilities. Of those non-wilderness nodes, only the development node at and around the Toklat River Road Camp area is large enough to provide an area for bus parking, rest rooms and other features needed for a Rest Area serving up to 290,000 users per summer. Within this non-wilderness development node, substantial disturbance has already occurred on the lower part of the alluvial fan. Realigning the access road and the construction of an improved Rest Area would result in minor additional disturbance since most of the area of potential affect was previously disturbed. Natural resource impacts on an alluvial fan are considerably less than those on a typical riparian floodplain system. Locating the Rest Area on the north side of the alluvial fan, in conjunction with the use of strategically placed earthen berms, would reduce the visual impact of the facility to visitors traveling the Park Road.

The risk of flood damage from the alluvial fan would be mitigated by placing a protective gabion-cored earthen berm above the facilities and designing the realigned access road to divert the streamflow via a conveyance ditch above the new facilities.

The risk of the Toklat River widening and eroding into its west bank and into the project site would be mitigated by installing steel sheet pile and other structures to stabilize the present edge of the river bed. The

river bank stabilization would connect to the existing sheet pile protecting the downstream Toklat Road Camp gravel processing area and would connect to the upstream west Toklat River Bridge. It would also serve to protect the existing access road to the Toklat Road Camp.

An alternative Toklat Rest Area site, south of the preferred site, at the current bus parking area but still on the alluvial fan, is also considered. This site was not selected as the preferred location because it would be more of a visual intrusion to visitors traveling the Park Road than the preferred site north of the higher ground in the middle of the fan. The preferred site would also be easier to camouflage with earthen berms.

Description of Site-Specific Flood Risk

The Toklat alluvial fan, located at the base of a mountain adjacent to the Denali Park Road, is a sedimentary deposit that is composed of debris flow sediments and has the shape of a fully extended fan. Alluvial fan flooding typically begins to occur at the hydrographic apex, which is the highest point where flow is last confined, and then spreads out as sheetflood, debris slurries, or in multiple channels along paths that are uncertain. Such flooding is characterized by sufficient energy to carry coarse sediment at shallow flow depths.

The notable feature of a depositional landform such as the Toklat alluvial fan is the flow path uncertainty during flooding, which is aggravated by the absence of topographic confinement or by the occurrence of erosion and deposition. Several large deep channels exist at the hydrographic apex of the Toklat fan, several thousand feet upstream of the proposed Rest Area location.

Downstream of this apex, a stream or debris flow loses its competence to carry material eroded from the steeper upstream source area and the fan widens considerably. The toe of the fan is intersected by the Toklat Road Camp access road and then by the Toklat River.

Streamflow down the alluvial fan has been noted during precipitation events, which occur frequently during the summer in the mountainous area surrounding the Toklat River. Debris flows occur less frequently and are generally the result of extended or particularly heavy precipitation events. Small debris flows in the past 20 years have resulted in the cumulative deposition of several feet of material near the lower boundary of the fan, where gravel was mined during the gravel crusher operation. Evidence of a substantially larger debris flow was found upstream near the hydrographic apex; tree coring data was used to estimate that flow event which occurred 20-30 years ago. Long-time seasonal residents of the Toklat Road Camp report that no large debris flows have been noted at the lower end of the fan near the road for the past 25 years or so. The recurrence interval of flooding is impossible to determine, both for streamflows and for debris flow events.

As flooding events follow several hours of localized intense rainfall or several days of less intense rainfall, such occurrences do not occur without some notice to trained or observant individuals. Depths and velocities of both streamflow and debris flows are difficult to estimate, due to the flow path uncertainty below the hydrographic apex and ensuing abrupt deposition and erosion of sediment.

The warning time for occupants of the Rest Area for a large debris flow down the alluvial fan is difficult to predict. Such debris flows may occur after a short period of extremely intense rainfall or after a much longer period of less intense rainfall. Large rainfall events would serve as notice to bus drivers and park rangers that conditions may favor streamflow or debris flow on the alluvial fan. Streamflow will precede any debris flow, and should provide additional notice for rangers and bus drivers to be alert.

The warning time for an actual large debris flow event would probably be relatively short, on the order of 10-15 minutes. The alluvial fan above the Rest Area is easy to view under most circumstances and would provide some visual warning as the crest of a debris flow moved downhill. The slope of the fan flattens out to approximately 8-15 percent above the Rest Area, which should act to slow debris flows. In the event of a large debris flow, evacuation of the Rest Area would occur quickly. Park visitors would either board their buses for a short trip away from the alluvial fan, or walk several hundred yards along the access road in either direction to safety. A natural tendency during inclement weather, especially the onset of an extremely intense rainfall, is to seek shelter in a building; so it is likely that bus drivers or park rangers must instruct park visitors to leave the Rest Area's shelters and to enter the buses or to leave the site on foot during an intense rainfall in order to safely evacuate the site prior to a debris flow. The new access road design and the construction of an earthen berm on the alluvial fan upstream of the Rest Area would mitigate the debris flow hazard.

The Toklat River is east of and immediately adjacent to the Rest Area project site. The river's west bank is an actively eroding drop off of about 5-10 feet. The Rest Area would include a short (about 100 feet long) handicapped accessible path to the edge of this bank for views of the river. The river bank would be stabilized with steel sheet pile in order to protect the Rest Area site and the access road to the Toklat Road Camp from future lateral river bank erosion.

Description and Explanation of Flood Mitigation Plans

Flood mitigation plans for both streamflow and debris flow would be incorporated into the construction of the Rest Area through the use of structural flood control measures. The existing access road to the Toklat Road Camp would be realigned above the Rest Area and would serve as a physical barrier to both streamflow and debris flow moving down the alluvial fan. The road prism would be constructed of fill and would be elevated above the alluvial fan base. The uphill side of the road prism would be reinforced with bank erosion protection consisting of wire-enclosed rock (gabions) extending to the limits of the alluvial fan. A conveyance ditch on the uphill side of the road would capture and provide drainage for streamflow which would cross under the access road at both ends of the fan through large diameter culverts. Routine maintenance would insure that the conveyance ditch remains free of accumulated debris and that the rock gabions remain in good condition.

Additionally, one or more earth embankments would be constructed near the Rest Area. These embankments would serve the dual purpose of partially hiding the Rest Area from view of the Park Road and the access road, and providing a larger barrier to debris flows moving down the alluvial fan. Constructed to a height specified by engineering standards above the surrounding base, these embankments would provide significant storage for sediment from a debris flow event and would provide an increased safety buffer should an evacuation become necessary.

The west bank of the Toklat River would be stabilized using 10-15 foot high steel sheet pile. The vertical sheet pile would be installed at the immediate edge of the Toklat River to prevent lateral erosion and would connect with the existing steel sheet pile located downstream at the Road Camp. It would be buried into the ground to prevent undercutting by the Toklat River. It would extend to the top of the bank at the rest stop, and it would extend above the 100 year flood height of the river along the whole length of the installation in order to prevent river overflow during high water periods which could erode behind the sheet pile. Any sections of the sheet pile that would need to extend above the ground level would be appropriately treated for aesthetics to mitigate the visitor's view of the sheet pile.

The flood control and bank stabilization structures would be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60).

Summary

An improved Rest Area is proposed for construction on the toe of an alluvial fan near the Toklat River. The preferred location was chosen for two reasons: 1) a previously disturbed area exists on the toe of the fan; 2) the north side of the fan would reduce the visual intrusion of the Rest Area from the Denali Park Road. An alternative site is presented in the EA that would be more visually intrusive but would disturb less new ground.

The entire area of the lower alluvial fan is located within the 100-year floodplain, and may be considered to be active. Deposition, erosion and unstable flow paths are possible anywhere within the limits of the fan. The recurrence interval of flooding is impossible to determine, both for streamflows and for debris flow events. Though streamflow occurs commonly with precipitation events, the occurrence of large debris flows has been low for the past 25 years. Flood mitigation plans for both streamflow and debris flow off the alluvial fan would be incorporated into the construction of the Rest Area through the use of structural flood control measures. The conveyance ditch, rock gabions and earth embankments would be inspected on an annual or more frequent basis, depending upon the intensity and frequency of storms, to determine appropriate maintenance work needed to maintain them. In the event of a debris flow, evacuation of the Rest Area would occur quickly and would be directed by bus drivers or park rangers. Park visitors would either board their bus for a short trip away from the alluvial fan or walk several hundred yards along the access road in either direction to safety.

The west bank of the Toklat River would be stabilized using steel sheet pile and other means such as gabions to prevent bank erosion into the project site and to protect the Road Camp access road. The bank stabilization would run downstream and connect with the existing sheet pile at the Road Camp, and would run upstream and connect with the west Toklat River Bridge.

The NPS finds that there are no practicable alternatives to disturbing floodplains and to building facilities within floodplains for the construction and operation of the proposed Toklat Rest Area in Denali National Park. Floodplains have been avoided to the maximum practicable extent. The floodplain impacts that could not be avoided will be minimized. The NPS acknowledges that some natural localized floodplain processes of erosion, deposition and canalization would be altered by the Rest Area project. The NPS acknowledges that the Rest Area facilities, built in a floodplain, would face some risk of damage by flooding and the NPS accepts that risk. The NPS finds that this project is consistent with the revised Procedural Manual #77-2, *Floodplain Management*, 2003 and with NPS Director's Order #77-2, *Floodplain Management*, September 8, 2003. The NPS finds that this project is in compliance with Executive Order 11988, *Floodplain Management*, May 24, 1977.