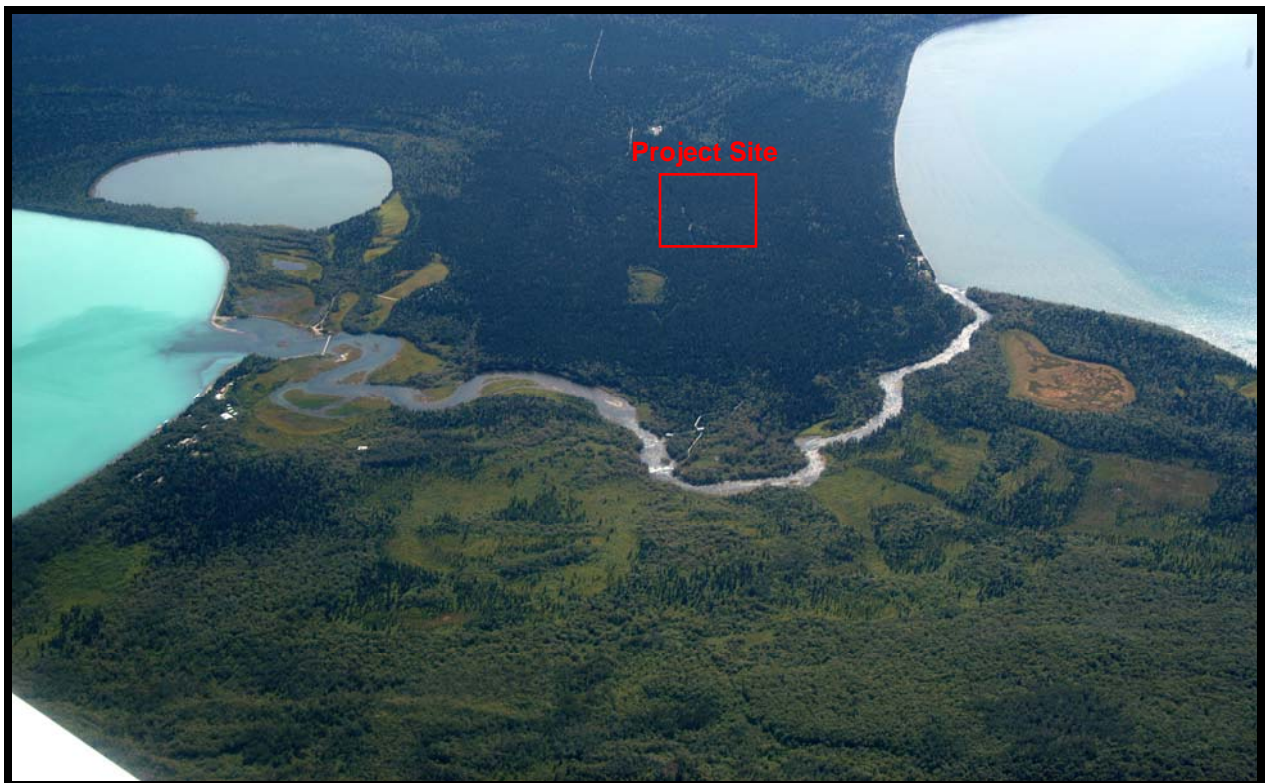


National Park Service
U.S. Department of the Interior

Katmai National Park and Preserve
Alaska



Brooks Lake Maintenance Facility Environmental Assessment June 2007



Comments on this environmental assessment (EA) may be submitted during the 30-day open comment period via the national planning web site at <http://parkplanning.nps.gov>.

For people wishing to submit comments on this EA: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be aware that your entire comment – including your personal identifying information – may be made public. While you can ask us to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety.

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June 2007



The Federal Highway Administration
is a Cooperating Agency
on this Environmental Assessment.



TABLE OF CONTENTS

1.0	INTRODUCTION	6
1.1	Purpose and Need for Action.....	7
1.2	Background.....	8
1.2.1	Brooks Lake and Brooks Camp Facilities	8
1.2.2	Park Purpose and Significance.....	8
1.2.3	Laws, Regulations, and Policies	9
1.2.4	Planning and NEPA History of the Project.....	10
1.3	Issues.....	11
1.3.1	Issues Selected for Detailed Analysis	11
1.3.2	Issues Dismissed From Detailed Analysis.....	12
1.4	Permits and Approvals Needed to Implement Project.....	13
2.0	ALTERNATIVES.....	14
2.1	Introduction.....	14
2.2	Alternative 1: No Action.....	14
2.3	Alternative 2: Proposed Action.....	14
2.4	Mitigation and Monitoring Measures	16
2.4.1	Visual Resources.....	16
2.4.2	Visitor Use	16
2.4.3	Wildlife	16
2.4.4	Cultural Resources	16
2.4.5	Vegetation and Soils	17
2.4.6	Natural Sound	17
2.4.7	Socioeconomics	17
2.4.8	Water Quality and Fisheries Resources	17
2.5	Alternatives Considered but Rejected.....	18
3.0	AFFECTED ENVIRONMENT	21
3.1	Project Area	21
3.2	Visual Resources.....	21
3.3	Visitor Use	22
3.4	Wildlife	22
3.5	Cultural Resources	23
3.6	Vegetation and Soils	24
3.7	Natural Sound	25
3.8	Socioeconomics	25
3.9	Water Quality and fisheries resources	26
4.0	ENVIRONMENTAL CONSEQUENCES	27
4.1	Introduction.....	27
4.2	Methodology	27
4.2.1	Impact Criteria Assessment	27
4.2.2	Cumulative Impacts	27
4.3	Alternative 1: No Action.....	30
4.3.1	Visual Resources.....	30
4.3.2	Visitor Use	31
4.3.3	Wildlife	31

TABLE OF CONTENTS

4.3.4	Cultural Resources	32
4.3.5	Vegetation and Soils	33
4.3.6	Natural Soundscape	34
4.3.7	Socioeconomics	35
4.3.8	Water Quality and fisheries resources	35
4.4	Alternative 2: Removal of Old Facilities and Construction of New Facilities in a New Location (Proposed Action)	36
4.4.1	Visual Resources.....	36
4.4.2	Visitor Use	37
4.4.3	Wildlife	37
4.4.4	Cultural Resources	38
4.4.5	Vegetation and Soils	39
4.4.6	Natural Sound	40
4.4.7	Socioeconomics	40
4.4.8	Water Quality and fisheries resources	41
5.0	CONSULTATION and COORDINATION	42
5.1	Agency Consultation and Coordination.....	42
5.2	List of EA Preparers and Contributors.....	42
6.0	REFERENCES	43

LIST OF TABLES

Table 2-1: Summary of Alternatives

Table 2-2: Summary of Alternative Impacts

Table 4-1: Resource Assessment Impact Levels

LIST OF FIGURES

- Figure 1. Park Location Map
- Figure 2. Brooks Camp Location Map
- Figure 3. Brooks Camp Developed Area
- Figure 4. Wilderness and National Historic Landmark
- Figure 5. Project Site
- Figure 6. Conceptual Site Plan
- Figure 7. Brooks Lake Structures to be Removed
- Figure 8. Brooks Camp Structures to be Removed

LIST OF APPENDICES

Appendix A: Coastal Zone Negative Determination

Appendix B: Subsistence Evaluation, ANILCA 810

Appendix C: Cost Estimates

LIST OF ACRONYMS

ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ANILCA	Alaska National Interest Lands Conservation Act
BMP	Best Management Practices
B.P.	before present era
CFR	Code of Federal Regulations
cm	centimeter
DCP	Development Concept Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
GMP	General Management Plan
kW	kilowatt
L&PB	Lake and Peninsula Borough
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NPS	National Park Service
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

Katmai National Park and Preserve, encompassing approximately 4.1 million acres, is located at the head of the Alaska Peninsula (Figure 1), about 290 miles southwest of Anchorage.

Established as a National Monument in 1918 to preserve the Valley of Ten Thousand Smokes and the landscape associated with the cataclysmic volcanic eruption of 1912, it was expanded over the years by four presidential proclamations, then enlarged and re-designated a National Park and Preserve by the Alaska National Interest Lands Conservation Act (ANILCA) in 1980.

King Salmon is the closest permanent town to the project site and is the location of the park's field headquarters. It is about 10 miles west of the park and approximately 284 miles southwest of Anchorage. The community is on the north bank of the Naknek River on the Alaska Peninsula. A 15-mile road connects King Salmon to Naknek, but there are no road connections to the rest of the state. King Salmon is the main departure point and gateway for Brooks Camp visitors.

Brooks Camp is located in the west-central region of the park, outside of designated wilderness areas. Primary access to the seasonal camp is by floatplane or boat from King Salmon. The camp lies near the outlet of Brooks River, a 1.5 mile long drainage extending from Brooks Lake into Naknek Lake (Figure 2). The Brooks River divides Brooks Camp. The area north of the river includes Brooks Lodge and other concessionaire and NPS buildings including the ranger station, maintenance facilities, seasonal housing cabins and tent platforms, a visitor center, auditorium, and campground. The area south of the river includes several bear viewing platforms, NPS employee housing cabins, maintenance facilities, the project site, and a visitor contact area at Brooks Lake. The existing and proposed structures near the Brooks River are all within the Brooks Camp Developed Area (Figure 3).

The National Park Service (NPS) is proposing to:

- Relocate and replace maintenance facilities currently located in the vicinity of Brooks Lake in Katmai National Park and Preserve (Katmai or the park). Existing facilities would be removed or converted to other NPS uses.
- Construct 2 duplex housing units in the park in the vicinity of the new location for maintenance facilities. Existing housing units (tent structures) in the Brooks Camp area would be removed and the sites rehabilitated to a natural condition.
- Develop a conceptual design for future employee housing and other administrative structures in the park. Structures would be located in the vicinity of the new location for the maintenance facilities and the proposed location for the duplex housing units. Maintenance structures, laundry facilities, and concessionaire maintenance facilities are examples of administrative structures in the park.

These projects have been identified in the park's Development Concept Plan (DCP) and Environmental Impact Statement (EIS) for the Brooks River Area (1996) and the General Management Plan, Wilderness Suitability Review, and Land Protection Plan (GMP) (1986). This environmental assessment (EA) implements direction from the DCP/EIS, and provides adequate project detail for construction of the maintenance facility and the duplexes. This document also provides a refined concept for the employee housing area and other administrative

structures. Project construction is expected to begin in 2008, with site clearing in late summer 2007.

This EA analyzes the No Action and Proposed Action alternatives and their impacts on the environment. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1508.9). The purpose and need for the project is described in Section 1.1 and the complete proposed action is described in Section 2 of this EA.

The Federal Highway Administration would assist the NPS in contracting part of the proposed action, so they have joined in this EA as a Cooperating Agency.

1.1 Purpose and Need for Action

The purpose of these projects is to improve the safety and efficiency of maintenance and administrative support facilities, enable adequate maintenance for visitor facilities, provide resource protection, and to comply with state and federal regulations. There are three project elements to address this purpose; associated project needs are also identified.

- Replace maintenance facilities for Brooks Lake; new facilities would be co-located, away from visitor use areas, important wildlife habitat, and archaeological sites. The purpose is to reduce impacts on prime brown bear habitat and nationally significant archaeological sites in the Brooks River Corridor and to decrease hazards associated with bulk fuel storage and dispensing adjacent to a large water body, Brooks Lake. The purpose is also to provide indoor storage and work space, separate from bear areas. This project element is needed for employee health and safety and to bring fuel storage systems into compliance with the Alaska Department of Environmental Conservation (ADEC) and Environmental Protection Agency regulations. Existing maintenance activities occur in the open, with no barrier between employees and bears. Existing facilities are not well located; there is a hazard for fuel spills adjacent to Brooks Lake and the site is situated in the Brooks River Archeological District National Historic Landmark.
- Employee housing in the Brooks Camp area that does not meet health and safety standards would be removed; duplexes would be constructed in close proximity to the new maintenance area. Katmai is currently out of compliance with NPS Director's Order 36 to provide safe, sanitary, energy efficient, and cost effective housing (NPS, 2001). The purpose is to provide adequate, safe, and efficient employee housing; consolidate administrative facilities to minimize construction and operation expenses; and minimize impacts to cultural resources, bear habitat, and other elements of the natural environment. Existing facilities include wall-tents with substandard sanitation facilities and electrical supply. Employee safety is further compromised by living in soft-sided structures in the midst of a large concentration of brown bears. The project is needed to provide for employee health and safety and to protect park resources.
- Implement the park DCP and refine the development concept for employee housing and maintenance facility location, based on field reconnaissance and engineering feasibility studies. The purposes of the projects are to protect bear habitat, protect archaeological resources, provide safe working and housing environments, facilitate park management, and address maintenance backlogs. The project is needed to address substandard housing

and working environments and to plan for future housing and maintenance facility needs in the park. Existing maintenance and housing facilities are co-located with visitor facilities; the proposed location for the replacement structures would be away from visitor use and travel areas.

1.2 Background

1.2.1 Brooks Lake and Brooks Camp Facilities

The only NPS administrative facilities in Katmai National Park and Preserve are located in the Brooks Lake and Brooks Camp vicinity (Figure 2). Current maintenance facilities at Brooks Lake consist of several small sheds totaling approximately 2,300 square feet of buildings, and 32,000 square feet of yard space, all located immediately adjacent to the 1-mile road from Brooks Lake to Brooks Camp. Some of these facilities were constructed as early as the 1940s, when the Bureau of Fisheries conducted work in the area. Thus, some structures are potentially eligible for the National Register of Historic Places (NRHP).

A bulk fuel storage plant consisting of 5,000 gallons of diesel storage and 4,000 gallons of gasoline storage, as well as a 70-kilowatt (kW) power generation facility, are all located within 20 feet of the north shore of Brooks Lake. All vehicles and road maintenance equipment are parked in the immediate vicinity of these facilities while being serviced or when not in use. Other maintenance equipment and supplies are also stored in this area. While the Brooks Lake facilities are primarily intended for administrative uses, the entire area is visible to the visiting public as they either disembark from floatplanes or hike the area for fishing and bear-watching activities.

Brooks Camp is the primary visitor use site in the project area. The site receives approximately 16,000 visitors per year, and includes a concessionaire-operated 60-bed lodge, a 60-person campground, and housing for roughly 40 park and concessionaire employees. The four housing units proposed for removal and replacement in an alternate location are located in Brooks Camp; units BRT 1 and BRT 2 were constructed in 1983 and units BRT 3 and BRT 4 were constructed in 1990. These units are wall-tents, which do not meet health and safety standards. All present maintenance operations are conducted from a 500 square-foot space in a building built in 1975, which also does not comply with health and safety standards.

In addition, Brooks Camp is at the beginning of the 23-mile road to the Valley of Ten Thousand Smokes – the feature for which the park was created – over which pass some 10,000 visitors per year. All power, heat, fuel, water, sewer, and road maintenance is provided by the park, and most of the support for these services is based at the Brooks Lake maintenance facilities.

1.2.2 Park Purpose and Significance

Park purpose statements can be viewed in the GMP (NPS, 1986) and DCP/EIS (NPS, 1996). In addition, the DCP contains an overview of the park, preserve, and the Brooks River area. To focus this EA, purpose and significance statements for the Brooks River area, which includes Brooks Lake and Brooks Camp, are provided here:

Brooks River Area Purpose Statements

Stemming from the ANILCA legislation, the NPS identified three primary purposes for the Brooks River area: (1) to protect habitats for, and populations of, fish and wildlife, including, but not limited to, high concentrations of brown bears and their denning areas and maintain the watersheds and habitat vital to red salmon spawning in an unimpaired condition, (2) to provide for the general public resource-based recreation that does not impair natural and cultural values and (3) to protect and interpret outstanding natural, cultural, geologic, and scenic values (NPS, 1996).

Brooks River Area Significant Resource Statements

The DCP also describes the area's significant resources as (1) the largest concentration of protected brown bear populations in the world, many of which can be easily viewed by the public in the Brooks River area, (2) the Brooks River channel that serves as an important red salmon spawning area, (3) the Brooks River Falls that serve as a concentration area for red salmon, (4) the gathering of brown bears to feed on migrating salmon at Brooks Falls provides world-class wildlife viewing and photography opportunities of brown bears in a natural setting, (5) Brooks River, Brooks Lake, and Naknek Lake support world-class recreations fisheries for rainbow trout and red salmon. Quality sport fishing opportunities exist in the river and adjoining lakes for Arctic grayling and lake trout, (6) the immense size of the surrounding landforms, their topographic relief, volcanic and glacial origins, and their active geologic processes, in addition to the many expansive freshwater lakes, make the area an outstanding scenic resource, and (7) the Brooks River area, designated as a National Historic Landmark, contains an internationally significant concentration of ethnographic, historic, and prehistoric cultural remains spanning a 4,500 year period.

1.2.3 Laws, Regulations, and Policies

Organic Act

The 1916 NPS Organic Act directs 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 United States Code [U.S.C.] 1).

The NPS Organic Act also granted the Secretary the authority to implement "rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments and reservations under the jurisdiction of the National Park Service" (16 U.S.C. 3). Amendments to the 1916 NPS Organic Act in 1978 and the 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 NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The 2006 NPS Management Policies use the terms “resources and values” to mean the full spectrum of tangible and intangible attributes for which the park is established and managed, including the Organic Act’s fundamental purpose and any additional purposes as stated in the park’s establishing legislation. The impairment of park resources and values may not be allowed unless directly and specifically provided by statute. The primary responsibility of the NPS is to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

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

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

ANILCA Section 1306

The ANILCA, Section 1306 calls for locating NPS administrative facilities on Native land in the vicinity of the NPS when practicable and desirable. For the Brooks Lake and Brooks Camp administrative facilities, Section 1306 (a)(1) applies because the site is located within the boundary of the conservation system unit. Currently, with the DCP planned move of facilities and functions south of the Brooks River, ample federal land area is available for foreseeable site development. Thus, Section 1306 (b)(2) does not apply; the NPS has no need to acquire additional private real property for this project, including parcels from nearby Native lands.

1.2.4 Planning and NEPA History of the Project

Many plans have been developed for Katmai, including the 1986 Katmai GMP and the 1996 DCP/EIS. The GMP is a broad planning document, setting general management direction for the park, including direction to develop the DCP/EIS to address management issues in the Brooks River area. Two key policy statements in the GMP direct that proposed developments will be designed (1) to avoid impacts on the significant known archaeological resources of the area, and (2) to limit conflicts between bears and visitors in the Brooks Camp area. An implementation action to limit conflicts could include a phased relocation of all or part of the existing facilities. This project is an implementation of this direction from the GMP.

The DCP/EIS provides analysis and management direction for the Brooks River area of Katmai. It describes future conditions for natural resources, cultural resources, and visitor experience/interpretation. Future conditions that are especially pertinent to this project include protecting and maintaining habitat vital to red salmon and rainbow trout spawning and juvenile development cycles; protecting ecosystem functions; and enhancing the visitor experience by focusing visitor use and development in specific areas in order to minimize disturbance to natural, cultural, and scenic resources. This EA implements direction from the DCP/EIS and provides adequate project detail for implementation.

1.3 Issues

To focus this EA, the NPS selected specific issues for further analysis and eliminated others from evaluation. Issues brought forward for analysis in this EA were determined through conversations with park staff and NPS Alaska Region staff.

1.3.1 Issues Selected for Detailed Analysis

Visual Resources

Visual resources in the project area could be altered by the removal or construction of administrative facilities and associated utilities.

Visitor Use

Visitor use areas are not currently separated from maintenance and administrative facilities. Facility removal and construction activities could temporarily affect visitor use patterns in the area.

Wildlife

Terrestrial wildlife, such as brown bears, small mammals, and passerine birds could be affected by short-term displacement from preferred habitat and loss of habitat as a result of facility removal and construction.

Cultural Resources

Eligible historic properties are documented in the Brooks Camp and Brooks Lake areas. A survey would be completed to evaluate additional properties potentially eligible for the NRHP. Archeological resources would not likely be directly impacted by the removal of facilities, as the sites are previously disturbed.

Vegetation and Soils

Vegetation and soils could be disturbed during excavation associated with facility removal and construction.

Natural Sound

The natural sounds of the area could be impacted during facility removal, construction, and operation.

Socioeconomics

Construction activities and costs associated with the proposed project could provide a short-term, temporary stimulus to the local economy.

Water quality and fisheries resources

Bulk fuel storage and vehicle fueling activities adjacent to surface water bodies pose a hazard to water quality and fisheries resources.

1.3.2 Issues Dismissed From Detailed Analysis

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

Wilderness

The project area is not within a congressionally designated wilderness and was determined to be not suitable for wilderness in the 1986 GMP. The waters of Brooks Lake are designated wilderness but would not be adversely impacted by the project activities. The existing Brooks Lake maintenance facilities are on lands not suitable for wilderness (Figure 4). The project activities would not impact wilderness characteristics or values.

Environmental Justice

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project would not result in changes to human health or the environment with disproportionately high and adverse effects on minority or low-income populations or communities.

Air Quality

Katmai is designated as a Class II attainment area under the Clean Air Act. Air quality is usually excellent within the park. During periods of high winds and high floatplane activity on the lakes dust levels may increase on a temporary, intermittent basis. The park is mostly unaffected by industrial or urban activities that would produce pollutants. The only sources of potential seasonal air quality impairment in the Brooks Camp or Brooks Lake areas are generator emissions, incinerator emissions, emissions from fewer than fifteen vehicles, aircraft landings and take-offs, boat operations, and windswept air pollutants. The proposed project could produce a minor increase in dust levels on a temporary, intermittent basis during the facility removal and construction phases, and would relocate existing uses of vehicles and electric generators to the new site, but is expected to have little impact on air quality in the park during the operations phase.

Wetlands

Although wetlands occur throughout the park, the Brooks Camp and Brooks Lake areas have not been mapped under the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory System. Qualified NPS staff have completed a wetlands survey of the proposed project site and have documented (Rice 2006) that the project would not occur in or affect wetlands. Therefore, this EA does not address EO 11990, *Wetlands Protection*.

Floodplains

The project area is not located within a regulatory floodplain. Surface water bodies (Brooks River, Naknek Lake, and Brooks Lake) are near the project area. The levels of Naknek Lake and the Brooks River fluctuate between early spring and summer. This project is not expected to impact the floodplain and therefore this EA does not address EO 11988, *Floodplain Management*.

Threatened and Endangered Species

The NPS has received concurrence from the USFWS that there are no known federal or state listed threatened or endangered species or federal candidate species in the project area. The USFWS has concurred that the proposed project would not likely adversely affect listed species occurring region wide (USFWS 2007). However, occurrences of Steller's eiders (*Polysticta stelleri*), a threatened bird species listed under the Endangered Species Act (ESA) in 1997, have been documented in the region. Project personnel would be cognizant of the possibility of seeing a Steller's eider, and if the species is observed within the project area, proper USFWS protocol will be followed. Some species identified as species of special concern by the State of Alaska or by the USFWS may occur within the broader project area. These species of special concern, which are not protected by the ESA or the Alaska Endangered Species Law (AS 16.20.180 - 16.20.210), include lynx, northern goshawk, harlequin duck, Wilson's warbler, blackpoll warbler, grey-cheeked thrush, and Swainson's thrush. If these species are observed within the project area, the USFWS or Alaska Department of Fish and Game would be notified, as appropriate.

1.4 Permits and Approvals Needed to Implement Project

The NPS has submitted a negative determination letter to the State of Alaska, Department of Natural Resources, Office of Project Management and Permitting, to request concurrence that this project is consistent with the standards of the revised Alaska Coastal Management Program (ACMP) and would have no effect on the uses or resources of the coastal zone (Appendix A). This project would be reviewed by the Lake and Peninsula Borough (L&PB) for provisions under the revised Borough Coastal Management Plan.

NPS project engineers would be responsible for obtaining permits and approvals required for utility systems and services, including the water and wastewater project components. The NPS would submit a modified domestic wastewater collection plan to the ADEC for approval and a permit to construct, install, and operate the system.

Since the project would not occur in or affect wetlands, a Department of the Army, Corps of Engineers, Clean Water Act, Section 404 permit would not be required.

A Storm Water Pollution Prevention Plan (SWPPP) would be completed in accordance with the Alaska Department of Transportation and Public Facilities *Storm Water Contractor Guidance For Preparing and Executing Storm Water Pollution Prevention Plans*, which would comply with the National Pollution Discharge Elimination System General Permits for Storm Water Discharges from Construction Activities that are classified as *Associated with Industrial Activity*.

2.0 ALTERNATIVES

2.1 Introduction

This section describes the range of reasonable alternatives, including a No Action alternative and the Proposed Action alternative. Also discussed are mitigation and monitoring measures and alternatives and actions that have been considered but dismissed from further analysis.

The Proposed Action alternative was developed through an interdisciplinary team process that included tiering from earlier plans, especially the 1996 DCP/EIS and 1986 GMP, and considering regional and Katmai staff recommendations. Numerous internal staff discussions and scoping meetings lead to the project elements proposed and the concepts considered.

2.2 Alternative 1: No Action

Under Alternative 1, the No Action Alternative, the NPS would continue to operate, administer, and maintain the existing facilities at the Brooks Lake and Brooks Camp areas of Katmai. No facilities would be removed, relocated, or constructed, and additional conceptual design work would not be completed. Existing facility deficiencies would not be addressed and would continue at the present levels. Cultural resources would continue to be threatened due to existing facilities and activities on or near sensitive archeological sites. This alternative represents a continuation of the existing situation and provides a baseline for evaluating the changes and impacts of the action alternative.

2.3 Alternative 2: Proposed Action

Under Alternative 2, the Proposed Action, the NPS would implement three project components. These three components provide for administrative facilities in support of park functions. They do not directly provide for the construction of visitor use facilities.

1) Relocate and replace several of the maintenance facilities currently located at Brooks Lake. New replacement maintenance facilities would be constructed at a new site about one-quarter mile east of their current location (Figure 5). Project relocation, construction, and rehabilitation activities would include:

- Clearing trees (summer 2007), undergrowth and tundra vegetation from the site; grading and hardening the site (summer 2008); and fencing a new maintenance yard approximately 250' by 200'.
- Constructing a single new 3,500 square foot shop building and its associated utilities inside the new maintenance yard. The shop would include a vehicle repair area, space for plumbing, carpentry, electrical or mechanical repair, a small office, an employee restroom, storage space, a waste heat boiler, potable water treatment equipment, and automatic electric switchgear.
- Relocating two 35-kW diesel generators from the shores of Brooks Lake and siting them next to the shop building.
- Constructing a new curved (to provide visual screening) access road from the Valley of Ten Thousand Smokes Road to the new maintenance yard (summer 2008).

- Relocating the existing fuel storage facility (5,000 gallons of diesel and 4,000 gallons of gasoline) from the shores of Brooks Lake to the new maintenance yard.
- Installing a new buried power line, cross-country, between the relocated generators in the new maintenance yard and the remaining facilities (mostly employee residences) at Brooks Lake, and building a foot path for NPS staff on top of the filled-in trench.
- Demolishing, and rehabilitating to a natural appearance, existing maintenance facilities and sites near Brooks Lake. Rehabilitation would be done so as not to disturb sub-surface cultural artifacts, if any. Revegetation would be accomplished passively, by providing the proper surface conditions, without active replanting or seeding. The historic Bureau of Fisheries, USFWS headquarters and laboratory by Brooks Lake, which is over 50 years old, would not be removed or altered. Other buildings associated with the Bureau of Marine Fisheries Management would be evaluated for eligibility to the NRHP to determine appropriate treatment. The decision for the final treatment of the potentially historic structures would not be made until a determination of their eligibility to the NRHP is completed.
- Installing a new potable water well in the vicinity of the new maintenance yard, and installing new buried water lines to various locations in or near the new maintenance yard.

2) Construct two duplex housing units in the vicinity of the new maintenance facilities.

Two new employee housing duplex units near the new maintenance yard would be constructed to replace four existing wall-tent employee housing structures currently located in the Brooks Camp area. A septic leach field would be constructed to serve the employee housing units. Associated utilities would be constructed (i.e., buried water lines, and a buried power line between the area generators in the maintenance yard and the housing units).

The four wall-tents currently located at Brooks Camp would be removed and their former site would be rehabilitated to a natural appearance. Rehabilitation would be done so as not to disturb sub-surface cultural artifacts, if any. The tent frames from the wall-tents would be dismantled using hammers and saws. Wooden pieces would be hauled by park vehicles and disposed of in the Brooks Camp incinerator. Non-burnables would be transported by barge and recycled or disposed of in the King Salmon landfill. Revegetation would be accomplished passively, by providing the proper surface conditions, without active replanting or seeding.

3) Develop a conceptual design for future employee housing and other administrative structures in the vicinity of the new maintenance facilities. A design would be completed for future structures to be located in the vicinity of the new maintenance yard and duplex housing units. Maintenance structures, laundry facilities, concessionaire maintenance facilities, and additional housing are examples of administrative structures in the park which would be relocated to the new site (Figure 6) under this conceptual design. There would be one access road to the new site, from the Valley of Ten Thousand Smokes Road. Precise footprints and locations for these facilities are not yet designed and therefore impacts on resources cannot be analyzed. Future build-out actions of this component #3 would be subject to additional planning and NEPA compliance. This component of the EA is for conceptual design, not for completed construction. It is to refine the direction given in the DCP/EIS about the relocation of

administrative facilities – out of the Brooks Camp area to a new site up the Valley of Ten Thousand Smokes Road that would reduce pressures on the sensitive archeological resources, bear habitat, and heavy visitor use areas.

2.4 Mitigation and Monitoring Measures

Measures to avoid or minimize environmental impacts from the proposed action have been identified and incorporated into the Proposed Action. Best management practices (BMPs) would be followed to minimize impacts.

Gravel for construction would come from existing NPS gravel pits that have been analyzed and approved in a separate NEPA process (NPS 1997).

2.4.1 Visual Resources

To the greatest practical extent, impacts to visual resources from construction and operation activities would be minimized. This would be accomplished through various means, such as locating new administrative facilities away from key visitor viewpoints and utilizing natural screening. In addition, timing construction during traditionally low use time periods would also minimize visual impacts of project activities.

2.4.2 Visitor Use

Procedural steps would be taken to ensure that project construction and operation would minimally interfere with visitor use of park areas. This would be accomplished by means such as moving most of the materials and accomplishing tasks that may inhibit visitor movement during traditionally low use time periods (i.e., early June).

2.4.3 Wildlife

To the greatest practical extent, tasks would be scheduled during periods of low bear use (i.e., spring, August, etc.) to minimize both direct and indirect interactions with bears. As much as possible, supplies and equipment would be staged in the vicinity of work areas during periods of low bear use to minimize bear and human interactions. As per the Migratory Bird Treaty Act (MBTA) (16 U.S. C. 703), there would be no tree cutting from April 10th to July 15th in order to protect nesting migratory birds. If Steller's eiders are observed within the project area proper USFWS protocol would be followed. If species of special concern identified by the State of Alaska or by the USFWS are identified within the project area, the USFWS or Alaska Department of Fish and Game would be notified, as appropriate.

2.4.4 Cultural Resources

To ensure that each project component complies with Section 106 of the National Historic Preservation Act (NHPA), archaeological investigations have been completed for most of the project. The remaining areas of potential affect (the buried power line and new shop entrance road) would be surveyed by qualified NPS cultural resource specialists before a decision document for this EA is approved. No ground-disturbing activities would begin without a prior archeological survey and approval.

Cultural resources specialists would monitor the project sites during excavation activities. Should previously unknown cultural resources be identified during project implementation, work would be stopped in the discovery area. The NPS would perform consultations in accordance

with 36 CFR 800.11. The resources would be evaluated to determine if they are eligible to be listed on the NRHP. If proposed excavation locations could not be adjusted to avoid adversely affecting eligible cultural resources, the NPS would execute a Memorandum of Agreement (MOA) with the Advisory Council on Historic Preservation and the Alaska State Historic Preservation Officer (SHPO) that would incorporate comments from consulting parties. The MOA would specify measures to minimize or mitigate adverse effects. Furthermore, as appropriate, the NPS would abide by provisions of the Native American Graves Protection and Repatriation Act of 1992.

Any artifacts recovered from park property at the project site would be accessioned, cataloged, preserved, and stored in compliance with the NPS *Cultural Management Guidelines*.

The historic Bureau of Fisheries, USFWS headquarters and laboratory by Brooks Lake, which is over 50 years old, would not be removed or altered. Other buildings associated with the Bureau of Marine Fisheries Management would be evaluated for eligibility to the NRHP to determine appropriate treatment. The decision for the final treatment of the potentially historic structures would not be made until a determination of their eligibility to the NRHP is completed.

2.4.5 Vegetation and Soils

To minimize potential for introduction of invasive plants, any offsite equipment or materials would be inspected and cleaned (pressure washed) prior to their movement to the project site. Overburden removed from construction areas would be stored in a nearby gravel pit and redistributed on disturbed sites of the project when construction is complete. No new disturbance would occur at the storage sites or staging areas.

2.4.6 Natural Sound

To the greatest practical extent, construction and operation actions would not interfere with the natural sounds of the areas (i.e., bird calls and rustling leaves). Onsite machinery would meet manufacturer specifications for noise emissions. Any machinery brought in to the site would be equipped with current technology (mufflers) to help mitigate noise emissions. Operations would be timed, to the greatest practical extent, to coincide with low use seasons for wildlife and visitors.

2.4.7 Socioeconomics

To the greatest practical extent, construction and operational activities would not adversely interfere with local or regional economic operations (i.e., fishing and wildlife viewing tours) or other daily activities. Prior to project construction, the NPS would coordinate with local entities, such as fishing tour operators, potentially affected by project actions in order to help resolve possible conflicts.

2.4.8 Water Quality and Fisheries Resources

A Storm Water Pollution Prevention Plan (SWPPP) would be completed in accordance with the Alaska Department of Transportation and Public Facilities *Storm Water Contractor Guidance For Preparing and Executing Storm Water Pollution Prevention Plans*, which would comply with the National Pollution Discharge Elimination System General Permits for Storm Water Discharges from Construction Activities that are classified as *Associated with Industrial Activity*. The SWPPP would include project BMPs to reduce runoff and avoid water quality impacts.

BMPs would include using clean fill material, minimum clearing distances, silt fences, and sediment basins to reduce erosion during construction, dust abatement, and roadside culverts to maintain natural drainage and surface water flow patterns.

2.5 Alternatives Considered but Rejected

The preferred alternative in the DCP/EIS of 1996 consisted of removing Brooks Camp and all facilities north of Brooks River and replacing them, in-kind, on the terrace overlooking the Beaver Pond. However, the maintenance and administration facilities removed were to be located along the Valley of Ten Thousand Smokes Road instead of overlooking the Beaver Pond. The intent was to locate new facilities in a less sensitive area where human-bear conflicts would be minimized, as would impacts on archaeological and ethnographic resources. After removal and remediation were completed, the Brooks Camp area, from the north side of the river to the base of Dumpling Mountain, was to be designated as a people-free area, returning it to a more natural and protected state.

However, in the years since the EIS Record of Decision was approved in 1996, funding has not been available to implement the Brooks Camp move described in the DCP. During this period, a substantial deferred maintenance backlog has accumulated. Facilities in the Brooks River area (Brooks Camp and Brooks Lake) are in need of major upgrades or replacement. To address these specific and urgent concerns, Katmai has requested funding for new facility development and facility rehabilitation. This EA does not alter the 1996 EIS decision to eventually move the Brooks Camp operation south of the Brooks River.

This tiered EA describes tasks justified under critical need (i.e., life, health, and safety) categories. By tiering off the DCP/EIS, NPS can avoid duplication and work on solving necessary current and anticipated problems over the next several years. The project components presented in this EA have been developed and reviewed by an interdisciplinary group of NPS facility managers, engineers, environmental protection specialists, and planners. The implementation of these project components will allow Katmai to protect employees and safely meet current demands of the visiting public until a decision is made as to when to execute the remainder of the DCP direction, or take other actions as necessary.

Table 2-1 Summary of Alternatives

	Alternative 1 No Action	Alternative 2 – Proposed Action: New Maintenance Facility
Description	Continue using existing maintenance and housing facilities.	Implement three project components: 1) construct new maintenance facilities at a new upland site to replace those currently located near Brooks Lake; 2) construct two duplex employee housing units near the new maintenance facility to replace 4 existing wall-tents at Brooks Camp; and 3) develop a conceptual design for (but do not construct) future employee housing and other administrative structures.
Attributes	No new development.	The new maintenance facilities would provide improved safety and efficiency of maintenance and administrative support, adequate maintenance for visitor facilities, resource protection, and compliance with state and federal regulations. This alternative implements direction from the 1996 DCP/EIS and the 1986 GMP.
Newly Disturbed Area	0.0 acres	4.0 acres.
Conflicts	Maintenance and administrative support facilities would not be improved to meet health and safety requirements; existing threats to resources would remain; and state and federal regulations would not be met.	Construction activities (vehicular traffic, noise, dust) would have short-term impacts to visitors and nearby wildlife.

Table 2-2 Summary of Alternative Impacts

Impact Topic	Alternative 1 No Action	Alternative 2 – Proposed Action New Maintenance Facility
Visual Resources	Minor indirect impacts from existing dilapidated maintenance facilities in visitor-use areas.	Minor negative impacts. Clearing the new site would create a break in the natural landscape visible from floatplanes and higher elevations. Relocation of facilities and generators from the shore of Brooks Lake to a site that would be screened from visitor use areas would lessen the visual impacts for visitors. The new facility sites would not be visible to visitors traveling on the Valley of Ten thousand Smokes Road. Removing the existing wall-tents at Brooks Camp would improve the visual resources in that administrative area.
Visitor Use	No impact	Minor temporary impacts during construction and excavation activities.
Wildlife	No direct impacts, however there would continue to be minor indirect effects, particularly to brown bears. Without the removal of wall-tents in Brooks Camp and the installation of fencing, existing bear-human conflicts could lead to wildlife mortality.	Minor temporary impacts from construction activity. Brush and trees in the previously undisturbed area would be cut after July 15 th and before April 10 th to avoid impacts to nesting birds and to comply with the MBTA. Destruction of 4 acres of vegetated natural wildlife habitat would occur.
Cultural Resources	Minor impacts from continued administrative operations in sensitive archeological areas.	Minor impacts to cultural resources. No ground-disturbance when demolishing structures or rehabilitating sites. New facility construction would occur in an area that has been surveyed and has low probability for archaeological resources. Indirect beneficial effects could include a reduced level of human activity in the vicinity of non-historic structures removed from culturally sensitive areas.
Vegetation and Soils	No impact	Moderate long-term impact from clearing and development of 4 acres. Direct impacts from direct loss of plant habitat, native plant cover, and a potential reduction in function, such as biomass production or carbon dioxide sequestration. Indirect impacts from the threat of invasive exotic plants increasing on the rehabilitated sites. Impacts include compaction, direct loss of soil cover in the area of the new facilities, and erosion.
Natural Sound	No impact	Minor impacts from temporary intrusion of noise during the construction and facility removal. Human-produced sounds from the housing and maintenance functions (especially generator) would be similar, but relocated to a site farther from visitor use areas.
Socioeconomics	No impact	Negligible impacts from construction contracts and material needs creating new local employment opportunities. No impact on existing concession operations.
Water Quality and Fisheries Resources	No direct impacts, but long-term minor impacts from continued fuel storage tanks next to Brooks Lake and from substandard sanitation facilities for employee housing at Brooks Camp.	Minor beneficial impacts from adherence to the SWPPP, reduced potential for accidental petroleum spills near Brooks Lake, and relocation of some employee housing away from the substandard Brooks Lake sanitation facilities.

3.0 AFFECTED ENVIRONMENT

3.1 Project Area

The project is located in the Brooks Camp Developed Area (Figure 4), which contains Brooks Camp, Brooks Lake maintenance area and employee housing, as well as the new facility site location off of the Valley of Ten Thousand Smokes Road. For more information regarding facilities and structures in the area refer to section 1.2.1.

Elevations at Brooks Camp range from 42 to 62 feet above mean sea level. The natural topography in the camp area slopes gently to the east-southeast, from Dumpling Mountain toward Naknek Lake. The site is covered by a mixed forest of white spruce and birch and under story vegetation of alder, grasses, and forbs. The groundwater flow is generally to the southeast at Brooks Camp and the drinking water aquifer is not hydraulically connected with shallower aquifers.

The Brooks River Area has no road system on the north side of the Brooks River, however the trails accommodate a variety of small motorized vehicles. Secondary trails within the camp and between facilities such as the leach field and employee housing are approximately eight to ten feet in width and are compacted native soils. NPS Brooks Camp employee housing, including wall-tents and cabins, is located along a main gravel trail parallel with the lake border and west of the campground. The campground is managed by the NPS and is located at the far northern end of the development. The campground has a strong connection to Naknek Lake, through pathways and view corridors. Those same corridors also transmit considerable floatplane noise to the campsites.

Most of the existing structures in Brooks Camp are constructed with a modular log style building system, relying on milled cedar timbers for walls on an elevated wood-framed platform floor. These systems are well-suited to remote locations due to easy construction, prepackaging for shipment, durability, low maintenance, and a rustic appearance similar to log cabins. Modular log style buildings have provided consistency with repeated use of recognizable and uniformly-colored material.

The Brooks Lake maintenance area is ecologically similar to the Brooks Camp area and contains primarily bunkhouses, an old log cabin, a generator, fuel tanks, boat ramp, vault toilet, and maintenance facilities. South of the Brooks River there is a road that connects the Brooks Camp area, near Naknek Lake, with the Brooks Lake maintenance area (Figure 5). The Valley of Ten Thousand Smokes Road originates from this road; it is a single-lane gravel road, about 23 miles long, which leads to an overlook in the Valley of Ten Thousand Smokes.

3.2 Visual Resources

Spectacular views of mountains, hills, and lakes are available for those looking in an easterly or southeasterly direction from Brooks Camp. Once inland from the beach, panoramic visibility is limited, due to vegetative growth. Views from the campground include Naknek Lake and Dumpling Mountain.

Brooks Lake is the dominant view from the southern portion of the project area with rolling hills and distant peaks in the background. Foreground views in the Brooks Lake area include administrative facilities, including maintenance buildings and vehicle fueling facilities (Figure 7). The view from the proposed site for the maintenance and administrative facilities is limited, due to dense vegetation, including mature white spruce trees. The site would be well screened from key visitor use areas.

3.3 Visitor Use

Brooks Camp is the most heavily visited site in Katmai, as it receives approximately 16,000 visitors annually. Visitors may participate in one or more of the following activities: fishing in Brooks River, observing or photographing brown bears, taking a bus tour to the Valley of Ten Thousand Smokes, sightseeing, and hiking. The summer visitor season begins June 1st and extends through mid-September. Use of the Brooks Camp campground is typically light to moderate through late June, but demand usually exceeds the 60-person limit throughout the month of July (when there may be more than 200 visitors per day). The month of August has similar use numbers while September sees light use.

Day visitation has been responsible for the greatest increase in human use of the Brooks River area. Many private lodges, some from as far away as Lake Clark National Park and Preserve, fly a large number of guests to Brooks River for sport fishing and bear viewing. Moreover, the involvement of major tour companies, has led to an increasing number of people being flown to the Brooks River area for day trips to view bears and ride the bus into the Valley of Ten Thousand Smokes. There are also a small but growing number of backcountry canoeists and backpackers who begin and end their trips at Brooks Camp.

The Brooks Lake facilities are primarily for administrative and maintenance purposes. However, some visitors use this area for floatplane access. Visitors arriving and departing from Brooks Lake pass through the administrative area, including the vehicle fueling area.

3.4 Wildlife

Mammals

The Brooks River area is noted for its outstanding wildlife resources. The salmon runs annually attract more than 65 brown bears (*Ursus arctos*). The bears remain on the Brooks River typically through the latter part of July, when they disperse to other streams with later-timed runs. Bears return to Brooks River again in September to catch spawning and spawned out salmon concentrated in the river. There are brown bears, as well as the known trails that they frequent, in the project area. Other mammalian species that utilize the Brooks River area include moose (*Alces alces*), river otter (*Lutra canadensis*), mink (*Mustela vison*), short-tailed weasel (*Mustela erminea*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), wolf (*Canis lupis*), and wolverine (*Gulo gulo*). Also, red squirrels (*Tamiasciurus hudsonicus*), voles (*Clethrionomys* sp. or *Microtus* sp.), shrews (*Sorex* sp.), red foxes (*Vulpes vulpes*), lynx (*Lynx canadensis*), and snowshoe hares (*Lepus americanus*) inhabit the surrounding forest.

Birds

Bird species known to frequent the area are varied and include birds of prey such as bald eagles (*Haliaeetus leucocephalus*), northern goshawks (*Accipiter gentilis*), and osprey (*Pandion haliaetus*). Shorebirds include common merganser (*Mergus merganser*) and greater yellow legs

(*Tringa melanoleuca*). Other species include spruce grouse (*Falcipennis canadensis*), golden-crowned sparrows (*Zonotrichia atricapilla*), American robins (*Turdus migratorius*), gray jays (*Perisoreus canadensis*), varied (*Ixoreus naevius*) and hermit (*Catharus guttatus*) thrushes, black-capped (*Poecile atricapillus*) and boreal (*Poecile hudsonicus*) chickadees, dark eyed juncos (*Junco hyemalis*), and other species of migratory birds.

3.5 Cultural Resources

Brooks Camp lies within the Brooks River Archeological District which includes at least 20 discrete archaeological sites. The remains of ancient camps and settlements in the form of buried archeological deposits and depressions marking semi-subterranean house ruins occur on abandoned beach ridges and terraces along the shores of Naknek Lake, Brooks River, and Brooks Lake. Archeological research along Brooks River defined nine cultural phases, the earliest beginning about 4,500 before present (BP) and continuing to include the ancestors of the Alutiiq and Yupik-speaking people who inhabit the Alaska Peninsula today. The demonstrated capacity of the Brooks River District to yield unique archeological information for understanding past humans of Alaska led to its designation as a National Historic Landmark (Figure 4). Abundant runs of anadromous fish supplemented by terrestrial fauna and plants sustained substantial permanent settlements at Brooks Camp until early historic times when permanent settlements shifted to the Savonoski River and lower Naknek River.

At the outlet of Brooks Lake there is a log structure built in 1941, which is the historic Bureau of Fisheries, USFWS headquarters and laboratory. This building by Brooks Lake is a “contributing structure,” but has not had its own Determination of Eligibility, which would occur at a later date and comply with NHPA. Other buildings associated with the Bureau of Marine Fisheries Management would be evaluated for eligibility to the NRHP to determine appropriate treatment.

No ethnographic assessment has been completed for the Brooks River corridor. Historically the area around the Brooks River mouth, or Qit’rvik, appears to have been a satellite encampment to the villages along the Savonoski River used primarily as a fishing camp. The encampment contained a few substantial winter cabins located around the mouth of the river. Ethnographic resources include landscapes, objects, plants and animals, geographic place names, or sites and structures that are important to a people's sense of purpose or way of life. Groups foster preservation of traditional lifeways by using ethnographic resources to pass beliefs, traditions, and history to new generations through legends or accounts. Ethnographic resources that Native peoples associate with Qit’rvik include, but are not limited to the following: red salmon; landscape features such as the beach line, the river mouth, and to a lesser degree the falls; former fish racks, cabin and tent sites, and other historic era habitation sites; selected plants used in the past for medicinal purposes and as food; a few historic era burials; Dumpling Mountain; and Iliuk Arm of Naknek Lake; waterfowl; trapping lines; and dog team stake yards. The ethnographic resources overlap many of the archeological deposits, but ethnographic resources are centered on the Brooks River mouth and adjacent river banks, and the Naknek Lake shore south of the river mouth to near the Beaver Pond (Figure 4). Other ethnographic resources may be present. The Brooks River corridor contains numerous burials that are of extreme ethnographic importance to contemporary people associated with the Brooks River area. Qit’rvik is potentially eligible for listing on the NRHP as a Traditional Cultural Property.

The descendants of local tribes have been consulted under NHPA Section 106 consultation requirements (NPS 2006). NPS cultural resources staff began discussions with the Council of Katmai Descendants concerning the proposed Brooks Lake Maintenance Facility in June 2005. Project information was supplied to Council of Katmai Descendants members who in general supported the project because it eliminated threats to Brooks Lake. In a meeting on June 11, 2006, NPS staff described the Brooks Lake Maintenance Facility in terms of how its implementation would fit with the Record of Decision for the DCP/EIS in beginning to move facilities south of the river. Though most members supported efforts to alleviate pressure on Brooks Camp, other members said that they did not support construction of any new facilities at Brooks Camp or Brooks Lake.

3.6 Vegetation and Soils

Much of the project area is characterized by a closed or open canopy stand of white spruce (*Picea glauca*) and Kenai birch (*Betula papyrifera* var. *kenaica*) with an under story of various species of willow (*Salix* sp.) and alder (*Alnus* sp.), as well as high bush cranberry (*Viburnum edule*) (Viereck et al. 1992). In Katmai National Park, an estimated 128,000 acres of open and closed canopy white spruce forest exists; 31,400 acres of which is within a 12-mile radius of the Brooks River. Project components would occur in upland habitat, within primarily white spruce, birch, and cottonwood (*Populus balsamifera* ssp. *trichocarpa*) woodlands. Most alien plant species found at the Brooks River area may have become established as a result of inadvertent importation by visitors' footwear and NPS soil disturbing projects. Introduced species found in the area include shepherd's purse, pineapple weed, clover, and dandelion.

Spruce bark beetles have altered vegetation in the area; many large spruce trees between employee housing units have been killed in recent years. There are also many rotten, standing cottonwood trees throughout the campground. Each spring, Katmai staff remove hazard trees.

Brooks Camp rests on a sequence of tephra and organic layers overlying unconsolidated sand and gravel of glacial origin; the color of the tephra is light beige to off white. Volcanic ash up to about 30 centimeters (cm) thick forms a surficial layer of soil below the organic mat across the site. North of Brooks River, the organic mat is generally up to 15 cm thick with Katmai ash immediately below.

The Katmai ash layer, deposited from a 1912 eruption, is 20-31 cm thick and fine-textured. It has high levels of available phosphorous and very small amounts of organic material and nitrogen. This layer has few roots, however, observations on exposed Katmai ash showed that it revegetated relatively quickly with moss and vascular plants. Early June soil samples revealed frozen ground at varying depths within the Katmai ash layer and may affect soil salvage. Underneath the Katmai ash is the pre-eruption organic layer, 1-2 cm thick. This layer has many roots. The layer provides excellent material for salvage for revegetation because it has adequate nutrient levels. The layer contains a fine textured (similar to the Katmai ash) deposit from a 1750 eruption.

The earliest, most deeply buried ash layer is sandy, but is 12 percent organic material and has adequate levels of available phosphorous and total nitrogen. Nevertheless, observations on exposed surfaces of this layer showed poor revegetation potential. Soils in the project area are well-drained and there is very little evidence of erosion.

3.7 Natural Sound

Natural sounds in the Brooks River area vary seasonally, with the most diversity in the spring and summer. Beginning in spring, the area typically contains the sounds of arriving migratory songbirds (i.e., thrushes, juncos, and golden-crowned sparrows), as well as the sounds of movement created by the variety of mammals (i.e., moose, bear, and wolverine). Wind can rustle the leaves and branches of vegetation, particularly broadleaf (i.e., birch) varieties. In the vicinity of the Brooks River, Naknek Lake, and Brooks Lake, moving water and fish jumping generate natural sounds in the area. During storms, waves crashing on the Naknek Lake beach are frequently heard throughout the entire Brooks Camp area.

The project area is generally quieter in the winter months: bears are hibernating, migratory songbirds have flown south, lakes are typically frozen, and deciduous vegetation is leafless. The relative inactivity and quiet in the winter months is also an integral aspect of the natural sound atmosphere and auditory variance of the area. Ice groaning and cracking during the winter months does produce sounds that are unique to the season. Some mammals (i.e., moose and lynx) and birds (i.e., chickadees) remain throughout the seasons and continue to produce sounds in the area, but the differences in sound levels and variety between the winter and summer months are readily apparent.

Existing human-caused sounds are generated only in the summer, since the Brooks River area is closed down in winter with no winter occupancy. Common human sounds are from many float plane landings and take-offs per day, small motor vehicles for NPS or concession use, few infrequently used larger vehicles (the daily bus to the Valley of Ten Thousand Smokes, road grader, front-end loader), infrequent motor boat noise, and the general sounds of conversation and people walking about the area.

3.8 Socioeconomics

The Brooks Lodge is owned and operated by a private company, Katmailand, Inc., under an NPS concession contract. The facility has sixteen units that can accommodate a maximum of 60 guests. Included in the concession-offered services are canoe and kayak rentals, a fishing tackle and souvenir shop, food service, and a bar. In addition, the concessionaire offers a daily bus tour from the Brooks River area to the Three Forks Overlook. A school bus, sometimes supplemented by a van, conveys visitors over the 23-mile-long Valley of Ten Thousand Smokes Road to a cabin at the Three Forks Overlook. Three Forks Overlook provides pit toilets, a small cabin (which is a visitor center and contains exhibits about volcanic events), parking, a reception center, and various hiking trails. The main hiking trail is 1.5 miles long and descends to the valley floor.

The concessionaire also provides a shuttle service between Brooks Lake and Brooks Camp for guests that arrive or leave by floatplane on Brooks Lake.

The nearest communities to the project area are King Salmon and Naknek. No roads connect these towns to more sizeable population centers. The only road access starts at the community of Naknek, extends through King Salmon, and ends at Lake Camp just inside the western park boundary. Access to Brooks Camp is by aircraft or boat. Regularly scheduled commercial flights from Anchorage serve the airport at King Salmon a few times a day, which in turn

provides scheduled commercial floatplanes to Brooks Camp. Commercial barge or boat service to Brooks Camp is limited and not often used by park visitors. Sources for construction material and labor in King Salmon and Naknek are limited.

3.9 Water Quality and Fisheries Resources

The closest surface waters are Brooks River, Naknek Lake, and Brooks Lake. The water quality of Brooks Lake and the main body of Naknek Lake is good and clear with clean, gravelly sediments. During an ordinary summer, Naknek Lake does not stratify chemically, and thermal stratification, if any, is weak. Strong coastal winds generally keep the lake well mixed.

Rainwater and snowmelt surface runoff from the areas above the campground and Brooks Lake pit privies could be expected to reach lake waters. Existing pit toilets in the Brooks Lake area are being replaced, which will reduce potential threats to water quality. Both lakes are heavily used by floatplanes and boats during the summer months. A limited amount of diesel and gasoline fuels are introduced into Naknek and Brooks Lake by leakage from the engines of small boats and aircraft anchored or beached adjacent to Brooks Camp. Naknek Lake, Brooks River, and Brooks Lake are recognized by the State of Alaska as waters important for anadromous fish. Large runs of red salmon (*Oncorhynchus nerka*) return to the river in July to spawn, and a smaller run of coho (silver) salmon (*Oncorhynchus kisutch*) spawn in late summer. Brooks Camp and Brooks Lake lie within the coastal management zone defined by the L&PB as an area at or below the 200 foot contour level.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

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

4.2 Methodology

4.2.1 Impact Criteria Assessment

The impact analysis was conducted in a consistent manner based on standardized impact definitions. For each issue selected for detailed analysis (see Section 1.4.1) direct, indirect, and cumulative impacts have been described. Impacts identified for each issue brought forward are based on the duration, extent, and intensity of the impact. Summary impact levels (characterized as negligible, minor, moderate, or major) are given for each impact topic (issue). Impact level thresholds are generally defined in Table 4-1.

Table 4-1 Resource Assessment Impact Levels

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

The proposed development areas for the action alternative are shown conceptually on Figure 6. As the designs for the facilities are finalized, the actual area of disturbance may be less, depending on how the new pads or buildings are designed to fit within the conceptual area.

4.2.2 Cumulative Impacts

As defined in 40 CFR 1508.7, cumulative impacts are the incremental impacts on the environment resulting from adding the proposed action to other past, present, and reasonably foreseeable future actions. Cumulative impacts were assessed by combining the potential environmental impacts of the alternatives with the impacts of projects that have occurred in the past, are currently occurring, or are planned within the project area. Historically, these

cumulative impacts have mainly been due to increased visitor use and the development of administrative and visitor services that accompany these increases.

Implementation of the DCP/EIS is continuing with general programming for all facilities and the design of several components. Facilities and services currently in the Brooks River Development Area, which are considered past actions include:

- Brooks Camp area structures:
 - Employee housing- four wall-tents and seven cabins
 - Generator building-small building for diesel generator (12kW)
 - Utility building-electric power plant with three diesel generators (50 kW and two 100 kW)
 - Maintenance building and warehouse-1,113 square feet with attached laundry and shower house, houses all the support facilities that are necessary to operate Brooks Camp
 - Storage building-one-half for ranger storage and the other half for solid waste storage
 - Fuel systems-fuel storage, transfer, and dispensing systems (one at the parking lot and one at Brooks Camp)
 - Water system-water intake, treatment, reservoir, and distribution system with fire pump and hydrants
 - Sewer system-complete with septic tanks, lift stations, and leach field
 - Ranger station-355 square feet
 - Cabins-seven small, one-room cabins
 - Visitor center-a 360 square foot converted one-room log cabin that serves as the main contact (including bear safety briefing) for visitors arriving at Brooks Camp
 - Brooks Lodge-16 rooms and the main lodge, which has been in operation since 1950
 - Store-small outpost that carries sundries, food, fishing gear, and miscellaneous other essentials
 - Fish cleaning building
 - Cultural exhibit-reconstructed semi-subterranean house is a walk-in exhibit at the end of a short trail from Brooks Camp
 - Brooks Camp Campground-the only formal camping area in the park; it is about a quarter mile north of the Brooks Camp development at the base of Dumpling Mountain and contains 17 sites, cooking shelters, pit toilets, water spigot, and a park volunteer site
 - Solid waste handling and incinerator building
 - Auditorium-a converted temporary bunkhouse
 - Trails to Dumpling Mountain-hiking trail to viewpoint, north of Brooks Camp
 - Restrooms
- Brooks Lake area structures:
 - Generator-a 70-kW power generation facility
 - Bunkhouses-2 three-bedroom residences and 1 four-bedroom residence (with a bathhouse)
 - Old log cabin originally constructed as a Fisheries Laboratory (potentially eligible for listing on the National Register of Historic Places)

- Fuel tanks-bulk fuel storage plant consisting of 5,000 gallons of diesel storage and 4,000 gallons of gasoline storage, located within 20 feet of Brooks Lake
- Boat docking-a boat ramp and an amphibious plane turnaround area
- Pit toilet-soon to be replaced with a vault toilet
- Aircraft parking pad
- Mechanics, plumbing, and carpenter shops
- Water and wastewater systems-wastewater system includes two lift stations, pressure piping, septic tanks, and leach field
- Lumber storage shed
- Seven small building-including caches, fire hose cabinets, and pump house
- Roads
 - Road connecting Brooks Camp and Brooks Lake
 - Valley of Ten Thousand Smokes Road
- Brooks Falls Trail, which goes (0.6-mile) from the road connecting Brooks Lake and Brooks Camp to the Brooks Falls bear viewing platform
 - Near the end of the Brooks Falls Trail there is also an elevated boardwalk and the Riffles Platform

The projects from the DCP/EIS, which can be considered reasonably foreseeable future action include (See the DCP/EIS for more detailed information):

- Remove all facilities north of the river
- Remove barge dock and tie-downs
- Construct Brooks Falls Trailhead and Naknek Lake contact stations
- Rehabilitate trail to Brooks Falls
- Construct primary access site and facilities
- Implement shuttle system

Other reasonably foreseeable future actions and ongoing projects in the project area that were not specifically addressed in the DCP/EIS include:

- Federal Highway Administration road project: rehabilitate the Valley of Ten Thousand Smokes Road, scheduled for 2008
- Brooks Camp leach field replacement
- Gravel extraction for Brooks Camp projects
- Brooks River emergency bank stabilization
- Brooks River bank restoration
- Naknek Lake beach sand removal
- Annual dredging of Brooks River spit barge bulkhead

4.3 Alternative 1: No Action

The existing administrative facilities would continue to be used. Maintenance facilities and employee housing would not be relocated and the project purpose and need would not be met (see Section 1.1). Future actions would be subject to NEPA compliance procedures. (See Section 2.2 for a complete description of Alternative 1.)

4.3.1 Visual Resources

The existing condition of the landscape would not be altered from implementation of Alternative 1 (No Action) – no additional vegetation would be altered, no additional facilities would be constructed, and no existing facilities would be removed. There would be no new direct or indirect impacts to visual resources. Existing visual impacts of the decaying maintenance facilities near Brooks Lake would continue.

Cumulative Impacts

As discussed in Section 4.2.2, multiple past actions have altered the constructed environment, natural landscapes, and viewpoints in the project area. Past actions in the Brooks Camp area that had high impacts on visual resources include construction of employee housing, a maintenance building, the Brooks Lodge, and the visitor center. Other past actions that have influenced visual resources in the Brooks Lake area include construction of a maintenance building, a bunkhouse, and an old log cabin. Other past projects that have influenced visual resources include construction of the Valley of Ten Thousand Smokes Road and the road that connects Brooks Camp to Brooks Lake. Also influencing visual resources are: viewing structures along the river, cultural exhibit building, floating bridge, seasonally beached boats in the river mouth, and transient parked vehicles. Impacts to visual resources have included temporary disturbances due to construction activities and long-term changes in the viewed landscape of the project area. Facilities constructed have generally been designed to incorporate features of the natural landscape, using natural colors and landscaping with native materials. Some of the past projects were for administrative uses and were not readily visible from locations heavily used by visitors.

Reasonably foreseeable future actions that could impact visual resources include modifications to existing facilities, facility removal or construction, and road construction and maintenance (see Section 4.2.2). Of these reasonably foreseeable future actions construction of Brooks Falls Trailhead contact station, and Naknek Lake contact station would likely have the highest potential to impact visual resources. Impacts from these activities would be highest during construction phases, such as those caused by visual intrusion of equipment, but would also result in minor alterations to visual resources over the long-term.

With no additional direct or indirect effects to visual resources expected under Alternative 1, there would not be a contribution to cumulative impacts on visual resources. However, due to the scope of the projects described in Section 4.2.2, overall, cumulative impacts on visitor use resulting from past, present, and reasonably foreseeable future actions would occur.

Conclusion

Implementation of Alternative 1 (No Action) would have **minor** impact on visual resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.3.2 Visitor Use

Visitor facilities, access, and use would not be altered if Alternative 1 (No Action) were implemented. There would be no direct or indirect impacts to visitor use.

Cumulative Impacts

As discussed in Section 4.2.2, multiple past actions have altered aspects of visitor use in the project area. Past actions have impacted visitor use in the vicinity of Brooks Lake and Brooks Camp. Development of the campground, Brooks Lodge, visitor center, restrooms, store, and guest cabins at Brooks Camp have accommodated increases in both overnight and day use visitors to the area. The Valley of Ten thousand Smokes Road and the trail to Brooks Falls have increased visitor interest, accessibility, and use. Day trips to the area have been accommodated primarily by bus tours and fishing or wildlife viewing operations. The impacts of past and on-going actions on visitor use have occurred; impacts are generally localized and the integrity of most of the resource remains, but effects have persisted for many years.

Reasonably foreseeable future actions that could occur are described in Section 4.2.2. Of these, the construction of Brooks Falls Trailhead contact station, and Naknek Lake contact station would likely have the largest potential impact to visitor use. Impacts on visitor use could include minor, temporary disruptions such as noise and dust during construction, but also increased park accessibility. Impacts to visitor use from the reasonably foreseeable future actions would occur.

With no direct or indirect effects to visitor use expected under Alternative 1, there would not be a contribution to cumulative impacts on visitor use. Due to the scope of the projects described in Section 4.2.2, cumulative impacts on visitor use resulting from past, present, and reasonably foreseeable future actions would continue to occur.

Conclusion

Implementation of Alternative 1 (No Action) would have **not impact** on visitor use. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai, or that are key to the natural and cultural integrity of the park.

4.3.3 Wildlife

No direct impacts to wildlife would occur from implementation of Alternative 1 (No Action). However, there would continue to be indirect effects to wildlife, particularly brown bears. Without the removal of bear attractants (wall-tents in Brooks Camp) and the installation of fencing in locations where maintenance workers currently operate in open and unprotected areas, bears would continue to risk injury or death resulting from categorization as nuisance bears or life threatening confrontations with humans. Also, without the removal of maintenance facilities near the shores of Brooks Lake, the impact on prime brown bear habitat would not be lessened.

Under implementation of Alternative 1, there would not be any impacts to birds or other wildlife.

Cumulative Impacts

As discussed in Section 4.2.2 multiple past actions in the Brooks Camp and Brooks Lake area have impacted wildlife habitat. The existing development which required clearing of wildlife habitat in the Brooks Camp area includes: employee housing, generator, maintenance building,

ranger station, cabins, visitor center, Brooks Lodge, store, fish cleaning area, restrooms, and trails to Dumpling Mountain, and the cultural exhibit. In the Brooks Lake area, wildlife habitat was lost for similar purposes. Other activities that resulted in the direct loss of wildlife habitat include: the road connecting Brooks Camp and Brooks Lake, the Valley of Ten thousand Smokes Road, and the Brooks Falls Trail. In addition to the direct loss of habitat due to the construction of facilities or trails, impacts related to these activities, especially by linear roads and trails, include the fragmentation of habitat. These linear habitat obstructions create gaps in the continuity of wildlife corridors. Roads and trails also increase the likelihood and interactions between humans and wildlife, which could result in increased wildlife mortality. Thousands of acres of similar habitat exist in the vicinity, although it is legally undevelopable as wilderness. Impacts to wildlife from past and ongoing actions would continue and would persist for greater than two years.

Reasonably foreseeable future actions that could occur within the project area are described in Section 4.2.2. Of these future actions, the removal of all facilities north of the Brooks River would likely have the greatest potential to impact wildlife. The highest impacts would be those associated with construction activities, like earth moving with heavy equipment. Most of the wildlife habitat disturbed from project activities would be regionally common, and some habitat could even be restored.

The implementation of Alternative 1 would result in the continued disturbance of about one-half acre (the approximate area of structures that would remain near the shores of Brooks Lake) of prime brown bear habitat. The alternative would also preclude the construction of fencing that could potentially reduce human-bear interactions.

Conclusion

Implementation of Alternative 1 (No Action) would result in impacts to wildlife (i.e., continued disturbance and loss of prime brown bear habitat) that would persist for more than two years. These impacts would be **minor**. The level of impacts on wildlife associated with Alternative 1 would not result in impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai, or that are key to the natural and cultural integrity of the park.

4.3.4 Cultural Resources

The existing condition of cultural resources would not be directly altered from implementation of Alternative 1 (No Action); no soil would be disturbed, and no facilities would be altered, constructed, or removed. There would be no new direct impacts to cultural resources. However, indirectly, since the No Action Alternative would not result in construction of staff housing south of the Brooks River, this could increase the likelihood of failure of the existing leach field and potentially cause impacts to archeological resources in the vicinity. These indirect impacts would likely persist for greater than two years.

Cumulative Impacts

The past actions described in Section 4.2.2 have likely impacted cultural resources in the Brooks River area. Since these past actions occurred in one of the richest archaeological areas in Alaska, it is likely that some cultural resources or artifacts were impacted. Moreover, many of these past actions occurred on or near lakeshores, which are often culturally sensitive sites. Past and persistent impacts related to these activities include lost opportunities for archaeological survey

and cataloguing of some sites. The impacts of past and ongoing actions on cultural resources would likely persist for greater than two years.

Reasonably foreseeable future actions that could occur in the project area are described in Section 4.2.2. Likely, the future actions with most influence to cultural resources would be the removal of all facilities north of the Brooks River. The removal of these facilities would decrease the impact on an area known to be culturally sensitive. While the removal of these structures could adversely impact the soils and the cultural resources within them, archaeological surveys and consultation would likely minimize potential impacts. The overall impacts on cultural resources would be beneficial.

With indirect adverse effects to cultural resources expected under Alternative 1, there would be a contribution to cumulative impacts on cultural resources. Due to the projects described in Section 4.2.2, cumulative impacts on cultural resources would occur.

Conclusion

Implementation of Alternative 1 (No Action) would have a **minor** impact to cultural resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.3.5 Vegetation and Soils

Under implementation of Alternative 1 (No Action), no new impacts to soils or vegetation would occur since no new excavation or ground disturbance is proposed. Existing impacts to vegetation and soils from past activities would continue.

Cumulative Impacts

Past actions that have impacted vegetation and soils include the facilities and trails constructed at Brooks Lake and Brooks Camp for administrative, maintenance, and visitor service purposes. The existing development which required clearing of vegetation and soils in the Brooks Camp area includes: employee housing, generator, maintenance building, ranger station, cabins, visitor center, Brooks Lodge, store, fish cleaning area, restrooms, and trails to Dumpling Mountain, and the Barbara Replica. In the Brooks Lake area, there were vegetation and soil clearing activities for similar purposes. Other activities that resulted in loss of vegetation and soil cover include: the road connecting Brooks Camp and Brooks Lake, the Valley of Ten thousand Smokes Road, and the Brooks Falls Trail. Impacts related to these activities include creation of social trails and trampling of vegetation, placement of fill in vegetated areas, introduction of invasive species, and channelization of runoff from impervious surfaces and subsequent erosion of soils. Impacts of past and on-going actions on vegetation and soils occurred, and would likely persist for greater than two years.

Reasonably foreseeable future actions that could occur within the project area are described in Section 4.2.2. Of these future actions, construction of Brooks Falls Trailhead and Naknek Lake contact stations, and Naknek Lake beach and sand removal have the highest potential to impact vegetation and soils. These impacts would likely be the direct loss of vegetation or soil cover. Impacts from these activities would be higher during construction phases.

With no direct or indirect effects to vegetation and soils expected under Alternative 1, there would not be a contribution to cumulative impacts on these resources. Due to the scope of the projects described in Section 4.2.2, cumulative impacts on vegetation and soils resulting from past, present, and reasonably foreseeable future actions would continue.

Conclusion

Implementation of Alternative 1 (No Action) would have **no impact** to vegetation and soils. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.3.6 Natural Sound

The existing condition of the natural soundscape would not be altered from implementation of Alternative 1 (No Action); no sounds would be introduced or obscured. There would be no direct or indirect impacts to the natural soundscape.

Cumulative Impacts

Past actions that have impacted the natural soundscape include the administrative and maintenance activities at Brooks Lake and Brooks Camp, and visitor use activities in the area including floatplane access, shuttle busses, and other vehicular travel. Of the past actions described in Section 4.2.2, construction of visitor facilities like the Brooks Lodge and transportation corridors like the Valley of Ten thousand Smokes Road have had the greatest impact on the natural soundscape because they incorporate the use of generators, floatplanes, and buses, which all create introduced noise. These machines, as well as the visitors they support, impact the natural soundscape of the area. The impacts of past and on-going actions on the natural soundscape occurred and are likely persist for greater than two years.

Reasonably foreseeable future actions that could occur within the project area are described in Section 4.2.2. Most of these reasonably foreseeable future actions would have temporary impacts to the natural soundscape associated with their construction, while implementation of the shuttle system would have more long-term impacts. However, of all the reasonably foreseeable future actions, the project likely to have the largest impact on natural soundscape would be the removal of all facilities north of the Brooks River. The removal of these facilities would have short-term impacts on the natural soundscape associated with the equipment that the project would require. However, the lack of facilities in the area would reduce persistent introduced noise in the natural soundscape. Even if the facilities removed were replaced in kind at a location south of the Brooks River, the net impact to natural soundscape would likely be a reduction, as they would not be relocated adjacent to an acoustical conveyance, such as a water body.

With no direct or indirect effects to the natural soundscape expected under Alternative 1, there would not be a contribution to cumulative impacts on this resource. Due to the scope of the projects described in Section 4.2.2, cumulative impacts on the natural soundscape would occur.

Conclusion

Implementation of Alternative 1 (No Action) would have **no impact** to the natural sound. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.3.7 Socioeconomics

Alternative 1 (No Action) would result in no direct or indirect impacts to the socioeconomic environment. Existing social and economic processes would not be altered.

Cumulative Impacts

Past actions that have impacted the socioeconomic environment include the development of visitor use facilities and services in the Brooks River area. All the past facility and road construction actions described in Section 4.2.2 have combined to create a socioeconomic structure, which impacts individuals and businesses region wide. Although socioeconomic impacts associated with construction activities were temporary, the facilities and roads created a socioeconomic system that spreads beyond the park and its employees. Regional businesses have been, and continue to be, impacted by the revenue associated with bringing visitors into the Brooks River area for fishing, wildlife viewing, and hiking opportunities. The popularity of the Brooks River area has led to an increased number of regional outfitters who are economically reliant on integrating the vast and dynamic resources of the park into their business offerings. Past actions have led to a greater number of people, particularly park employees, residing in the area year around. The impacts of past and on-going actions on the socioeconomic environment occurred and would likely persist for greater than two years.

Reasonably foreseeable future actions that could occur within the project area are described in Section 4.2.2. Of these actions, construction of Brooks Falls Trailhead and Naknek Lake contact stations would likely have the largest potential impact to the socioeconomic environment. Impacts to socioeconomics could include changes to existing fishing, hiking, and wildlife viewing opportunities. Due to the size of the existing socioeconomic structure and the facilities that support it, it is unlikely that any of the future actions would have much impact.

With no direct or indirect effects to the socioeconomic environment expected under Alternative 1, there would not be a contribution to cumulative impacts on socioeconomics. Due to the scope of the projects described in Section 4.2.2, cumulative impacts on socioeconomic resources resulting from past, present, and reasonably foreseeable future actions would occur.

Conclusion

Implementation of Alternative 1 (No Action) would have **no impact** to the socioeconomic environment. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.3.8 Water Quality and Fisheries Resources

No direct impacts to water quality and fisheries resources would occur from implementation of Alternative 1 (No Action). If the relocation of bulk fuel storage tanks does not occur, the threat of water contamination due to a spill remains. If fuel from the bulk storage facilities spilled into Brooks Lake, contaminants could quickly spread to the Brooks River and Naknek Lake, and affect the substantial fishery resources of the area. The substandard sanitation facilities in existing employee housing could contaminate local water quality in the event of a heavy storm, flood, or similar event.

Cumulative Impacts

Past actions that have impacted water quality and fisheries resources include the facilities and trails constructed at Brooks Lake and Brooks Camp for administrative, maintenance, and visitor service purposes; the road corridor to the Valley of Ten Thousand Smokes; and subsequent increased visitor use. Of all the past actions described in Section 4.2.2, the greatest impact to water quality and fisheries resources was likely associated with floatplanes and boats and the visitors they bring to the park. Small amounts of fuel have leaked into both Naknek and Brooks Lakes from planes and boats. Impacts related to these activities included contamination of water bodies with pollutants such as petroleum hydrocarbons and bioaccumulation of these contaminants in fish. Contaminants in small concentrations have had, and would likely continue to have a temporary impact on area water quality and fisheries resources. Increased numbers of fisherman put additional pressure on area fisheries. The impacts of past and on-going actions on water quality and fisheries resources would likely persist for greater than two years.

Of all the reasonably foreseeable future actions that could occur within the project area described in Section 4.2.2, removal of all facilities north of Brooks River and Brooks River emergency bank stabilization would likely have the highest potential to impact water quality and fisheries resources. With adherence to the SWPPP completed for each project, there would not be any construction related impacts. All of the previously mentioned projects would potentially reduce the contaminants (whether they be sediment or petroleum hydrocarbons) that would impact water quality and fisheries resources.

Alternative 1 would maintain the bulk fuel storage tanks in close proximity to water bodies, and would thus result in the continued threat of a spill that would likely have deleterious impacts on water quality and fisheries resources.

Conclusion

Implementation of Alternative 1 (No Action) would result in **minor** impacts to water quality and fisheries resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4 Alternative 2: Removal of Old Facilities and Construction of New Facilities in a New Location (Proposed Action)

Under Alternative 2, the Proposed Action, the NPS would implement three project components: 1) relocate and replace maintenance facilities and structures currently located in the vicinity of Brooks Lake to a new upland site along the Valley of Ten Thousand Smokes Road; 2) relocate and replace employee housing currently located at Brooks Camp (four wall-tents) with two duplexes near the new maintenance facilities; and 3) develop a conceptual design for future employee housing and other administrative structures to be relocated near the new maintenance facilities. (See Section 2.3 for a complete description of Alternative 2.)

4.4.1 Visual Resources

Implementation of the Proposed Action would result in temporary impacts on visual resources during construction due to the presence of heavy equipment and excavation activities. Clearing native vegetation from the site would create a break in the natural landscape visible to visitors

arriving and departing by floatplane and from the higher elevations of the Dumpling Mountain trail. Relocation of administrative facilities from the shores of Lake Brooks to a new site that would be screened and separated from visitor use areas would lessen the visual impacts for visitors to the Brooks Lake area. The new facility site would have a curved entrance road to maintain natural vegetation screening so that it would not be visible to visitors traveling on the Valley of Ten Thousand Smokes Road. Removing the existing wall-tents at Brooks Camp would assist in rehabilitating the visual resources in that area (Figure 8). These impacts would persist for greater than two years.

Cumulative Impacts

As described in Section 4.3.1, past, ongoing, and reasonably foreseeable future actions have impacted and will continue to have impacts to visual resources in the area. The implementation of the Proposed Action would result in incremental long-term impacts to visual resources due to the increase in the development footprint in the Brooks River Development Area. The cumulative impacts attributable to implementation of the Proposed Action would persist for greater than two years.

Conclusion

Implementation of the Proposed Action would result in **minor** impacts to visual resources. However, the removal of facilities from Brooks Camp and the Brooks Lake visitor use area would result in long-term beneficial impacts to visual resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai, or that are key to the natural and cultural integrity of the park.

4.4.2 Visitor Use

Implementation of the Proposed Action would result in impacts on visitor use patterns during construction and rehabilitation activities. Relocation of administrative facilities out of the visitor travel corridor would result in long-term beneficial impacts to visitor use.

Cumulative Impacts

As described in Section 4.3.2, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to visitor use in the area. The implementation of the Proposed Action would result in temporary disruption of visitor use patterns during construction periods. The cumulative impacts attributable to implementation of the Proposed Action would be both temporary (construction) and persist for greater than two years (removal of facilities).

Conclusion

Implementation of the Proposed Action would result in **minor**, temporary impacts to visitor use. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.3 Wildlife

Implementation of the Proposed Action would disturb approximately four acres of wildlife habitat during excavation and construction of the new facilities and utility lines. Brush and trees in the previously undisturbed area would be cut after July 20th and before May 1st to avoid impacts to nesting birds and to comply with the MBTA.

Project components would also be scheduled to avoid impacts to bears. Known wildlife trails would not be impacted. Mitigation measures would be implemented (see Section 2.4.3) to minimize bear-human interactions. Bears, small mammals, and other wildlife could be temporarily displaced due to noise and activities associated with facility construction, causing a short-term adverse impact. Displaced wildlife would not likely have difficulty becoming established elsewhere on lands in close proximity, since no prime or unique habitat would be lost. Adverse impacts to wildlife would occur locally and would be both short-term from construction disturbance and long-term from habitat loss from increased development footprint.

With the removal of the 4 wall-tents from Brooks Camp, and the relocation of open maintenance facilities from Brooks Lake to a fenced new maintenance yard, bears would face reduced risk of injury or death resulting from categorization as nuisance or dangerous bears. Removing maintenance facilities near the shores of Brooks Lake would decrease the impacts of development on prime brown bear habitat. For these reasons, beneficial impacts to wildlife are expected to occur and would persist for greater than two years.

Cumulative Impacts

As described in Section 4.3.3, past, ongoing, and reasonably foreseeable future actions have had and will continue to have minor impacts to wildlife in the area. The implementation of the Proposed Action would directly result in the loss of about four acres of regionally common wildlife habitat and restoration of about one-half acre of prime bear habitat. It would result in a reduced risk of human-bear interactions. The cumulative impacts to wildlife attributable to implementation of the Proposed Action would persist for greater than two years.

Conclusion

The Proposed Action would result in **minor** impacts to wildlife and habitat. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.4 Cultural Resources

Implementation of the Proposed Action would likely result in no direct impacts to cultural resources. Non-historic facilities would be removed from areas that are known to be rich in archaeological resources. Facility removal and site rehabilitation would not involve ground-disturbance. New facility construction would occur in an area that has low probability for archaeological resources. Prior to approval for ground disturbance, field surveys of the new facility and areas of potential affect would be completed and consultation would occur.

The historic Bureau of Fisheries, USFWS headquarters and laboratory by Brooks Lake is over 50 years old and would not be removed or altered by this alternative. Other buildings associated with the Bureau of Marine Fisheries Management would be evaluated for eligibility to the National Register of Historic Places to determine appropriate treatment. Indirect effects of this alternative could include a reduced level of human activity in the vicinity of the removed non-historic structures, thereby decreasing impacts to cultural resources in the area. Impacts to cultural resources would be limited in intensity and extent, but would likely persist for greater than two years.

Cumulative Impacts

As described in Section 4.3.4, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to cultural resources in the area. The implementation of the Proposed Action would result in some beneficial indirect impacts to cultural resources. The cumulative impacts attributable to implementation of the Proposed Action would persist for greater than two years.

Conclusion

Implementation of the Proposed Action would result in **minor** impacts to cultural resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.5 Vegetation and Soils

Implementation of the Proposed Action would disturb approximately four acres of vegetation and soils during excavation and construction for the new facilities and utility lines. The implementation of the Proposed Action would directly result in the loss of about four acres of regionally common vegetation and soils. The impact on terrestrial vegetation from new facility construction would include: direct loss of habitat, direct loss of native plant cover, and a potential reduction in function, such as biomass production or carbon dioxide sequestration. Impacts to surrounding vegetation would be minimized by plainly demarcating clearing limits. Fugitive dust from construction could indirectly affect nearby vegetation; however, these impacts would be temporary, localized, and minimized through the use of dust abatement practices (i.e., watering). Activities would be confined to the construction zone and no surrounding vegetation would be disturbed. The impacts on soils would include compaction and direct loss of soil cover in the area of the new facilities.

Direct impacts to vegetation and soils as a result of removing old facilities include exposure of local soils to potential erosion and the creation of an area suitable for the establishment and propagation of invasive and exotic plant species, as the cleared areas would be revegetated passively. Trampling of vegetation could also occur during facility removal.

Impacts to vegetation and soils as a result of implementing the Proposed Action would persist for greater than two years.

Cumulative Impacts

As described in Section 4.4.5, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to vegetation and soils in the area. The vegetation and soils that are or would be lost as a result of past, ongoing, and reasonably foreseeable future actions are a small fraction of those contained in the developable non-wilderness section of the Brooks River Development Area, and in the mostly-wilderness 4.3 million-acre park. The implementation of the Proposed Action would contribute about four acres increase to the amount of vegetation and soils already lost to development parkwide. The cumulative impacts attributable to implementation of the Proposed Action would be long-term.

Conclusion

Implementation of the Proposed Action would result in direct and indirect impacts to about four acres of vegetation and soils. Impacts would be **moderate** and long-term. There would be no

impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.6 Natural Sound

Implementation of the Proposed Action would result in temporary intrusion of noise during the construction and facility removal phases of the project. Human-produced sounds from the housing and maintenance (especially generator) functions would be similar, but relocated to the site of the new facilities, farther from the visitor-use areas. Sounds from the new maintenance facilities would be buffered by vegetative cover. The existing facilities are also somewhat buffered by vegetative cover, but they are located close to the lake shore that can carry sounds. The direct and indirect effects to the natural soundscape are low in intensity and extent, but would likely persist for greater than two years.

Cumulative Impacts

As described in Section 4.3.6, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to the natural soundscape. The implementation of the Proposed Action would result in impacts to the natural soundscape. The cumulative impacts attributable to implementation of the Proposed Action would persist for greater than two years.

Conclusion

Implementation of the Proposed Action would result in impacts to the natural soundscape that would be **minor** and long-term. While impacts would be persistent, they would be reduced with the new facility design that has greater sound buffering. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.7 Socioeconomics

Implementation of the Proposed Action would result in few changes to the social and economic environment. Construction would not create new local employment opportunities because current NPS staff would perform facility construction and removal. Rock and gravel would likely be obtained from local sources in the park. Most construction materials would likely be procured from sources outside of the neighboring communities of King Salmon and Naknek. Implementation of the Proposed Action is not expected to have an impact on existing concession operations.

Cumulative Impacts

As described in Section 4.3.7, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to the socioeconomic environment. Implementation of the Proposed Action could potentially result in impacts to the socioeconomic environment. The cumulative impacts attributable to implementation of the Proposed Action would be a very small portion of the existing socioeconomic environment.

Conclusion

Implementation of the Proposed Action would result in **negligible** impacts to socioeconomic resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

4.4.8 Water Quality and Fisheries Resources

Implementation of the Proposed Action would result in a beneficial impact due to the relocation of bulk fuel storage tanks from near the shores of Brooks Lake to a more inland site. The potential impacts to water quality and fisheries resources would be reduced, should a spill occur. Relocating some of the existing Brooks Camp employee housing, which has inadequate septic facilities, to new duplex housing units near the new maintenance facility site, would reduce potential threats to water quality. With adherence to the SWPPP, there would be no construction related impacts to water quality and fisheries resources. Beneficial impacts to water quality and fisheries resources are expected to persist for greater than two years.

Cumulative Impacts

As described in Section 4.3.8, past, ongoing, and reasonably foreseeable future actions have had and will continue to have impacts to water quality and fisheries resources. The cumulative impacts attributable of the Proposed Action would be long-term.

Conclusion

Implementation of the Proposed Action would result in **minor beneficial** long-term impacts to water quality and fisheries resources. There would be no impairment of park resources that fulfill specific purposes identified in enabling legislation of Katmai or that are key to the natural and cultural integrity of the park.

5.0 CONSULTATION and COORDINATION

5.1 Agency Consultation and Coordination

The Federal Highway Administration is a Cooperating Agency on this EA. They would assist the NPS in contracting part of the proposed action.

Alaska Coastal Management Program (ACMP), Coastal Zone Negative Determination –
See Appendix A.

ANILCA Section 810(a), Subsistence Summary Evaluation and Findings –
See Appendix B.

NHPA Section 106 Consultation –

NPS has informally consulted with the State Historic Preservation Officer (SHPO) (Personal Communication, Dale Vinson, June 12, 2007). After additional archeological surveys are completed in June 2007, SHPO will be consulted again, and their concurrence will be sought in an anticipated NPS determination of “No Historic Properties Adversely Affected.” Consultation with tribal entities (King Salmon Tribe; Council of Katmai Descendants) has been conducted and is ongoing (NPS 2006).

ESA Section 7 USFWS Consultation –

The proposed project will not adversely impact any federally listed threatened or endangered species or habitat (USFWS 2007).

5.2 List of EA Preparers and Contributors

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7.0 FIGURES

- Figure 1. Park Location Map
- Figure 2. Brooks Camp Location Map
- Figure 3. Brooks Camp Developed Area
- Figure 4. Wilderness and National Historic Landmark
- Figure 5. Project Site
- Figure 6. Conceptual Site Plan
- Figure 7. Brooks Lake Structures to be Removed
- Figure 8. Brooks Camp Structures to be Removed

Brooks Lake Maintenance Facility Environmental Assessment



Figure 2. Brooks Camp Location Map

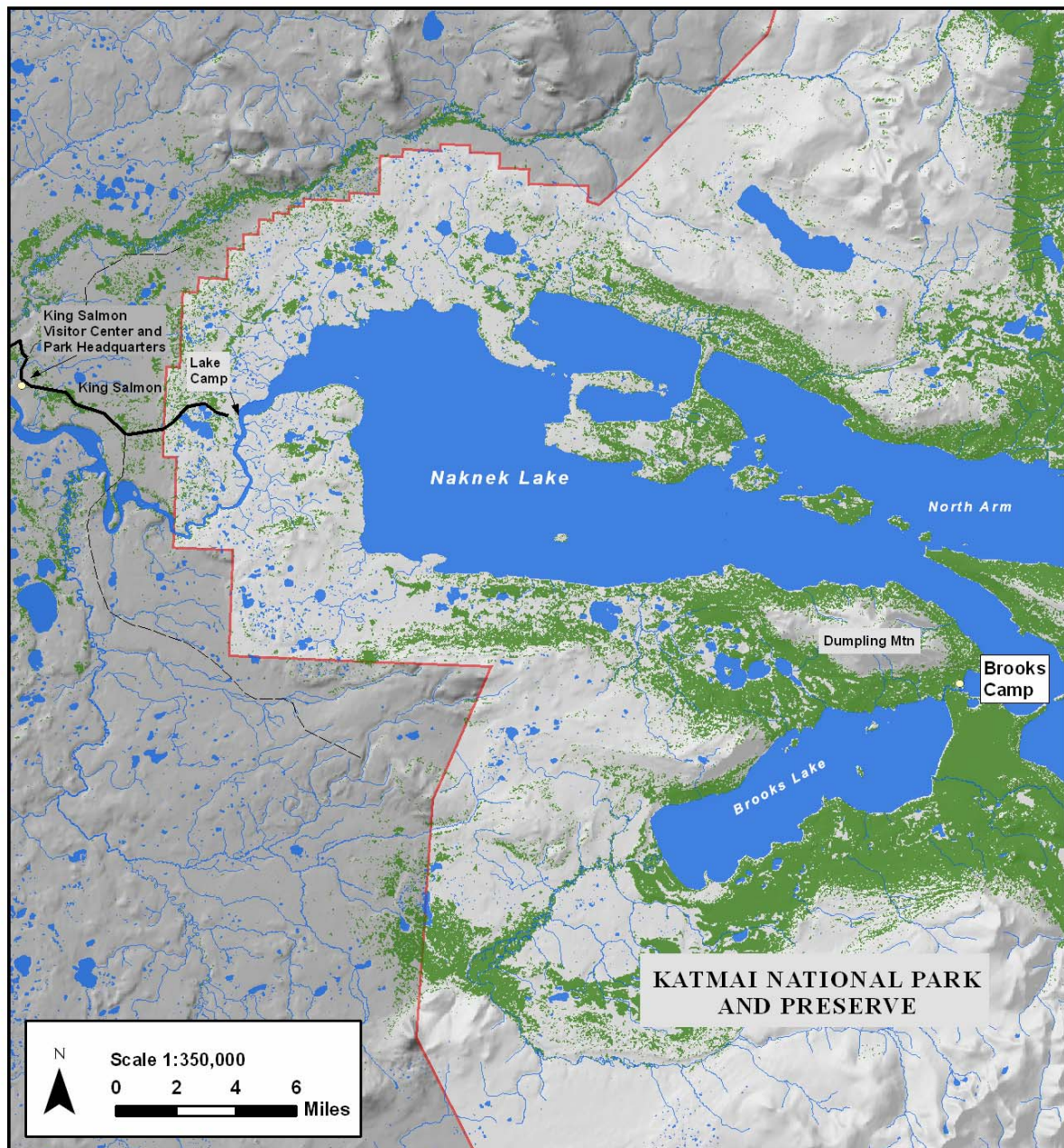


Figure 3. Brooks Camp Developed Area



Figure 4. Wilderness and National Historic Landmark

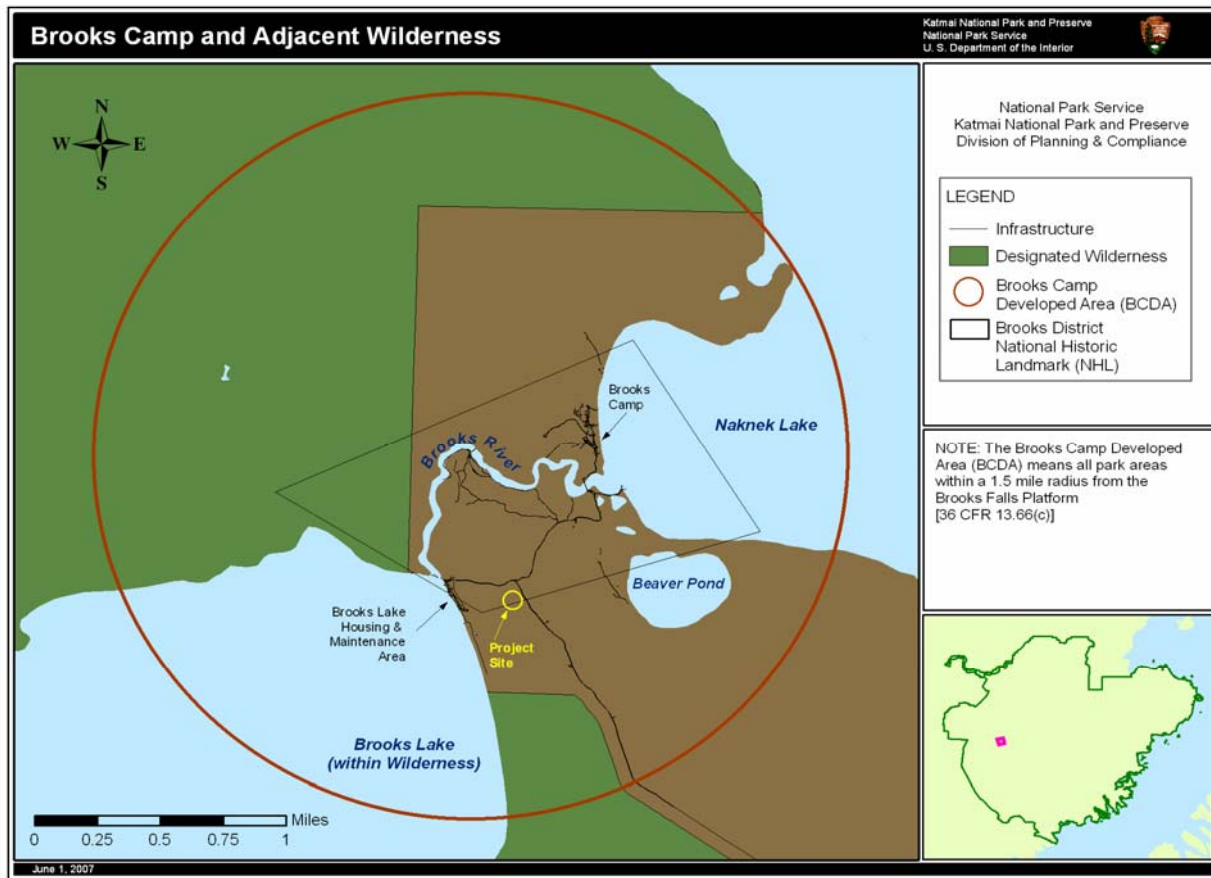


Figure 5. Project Site

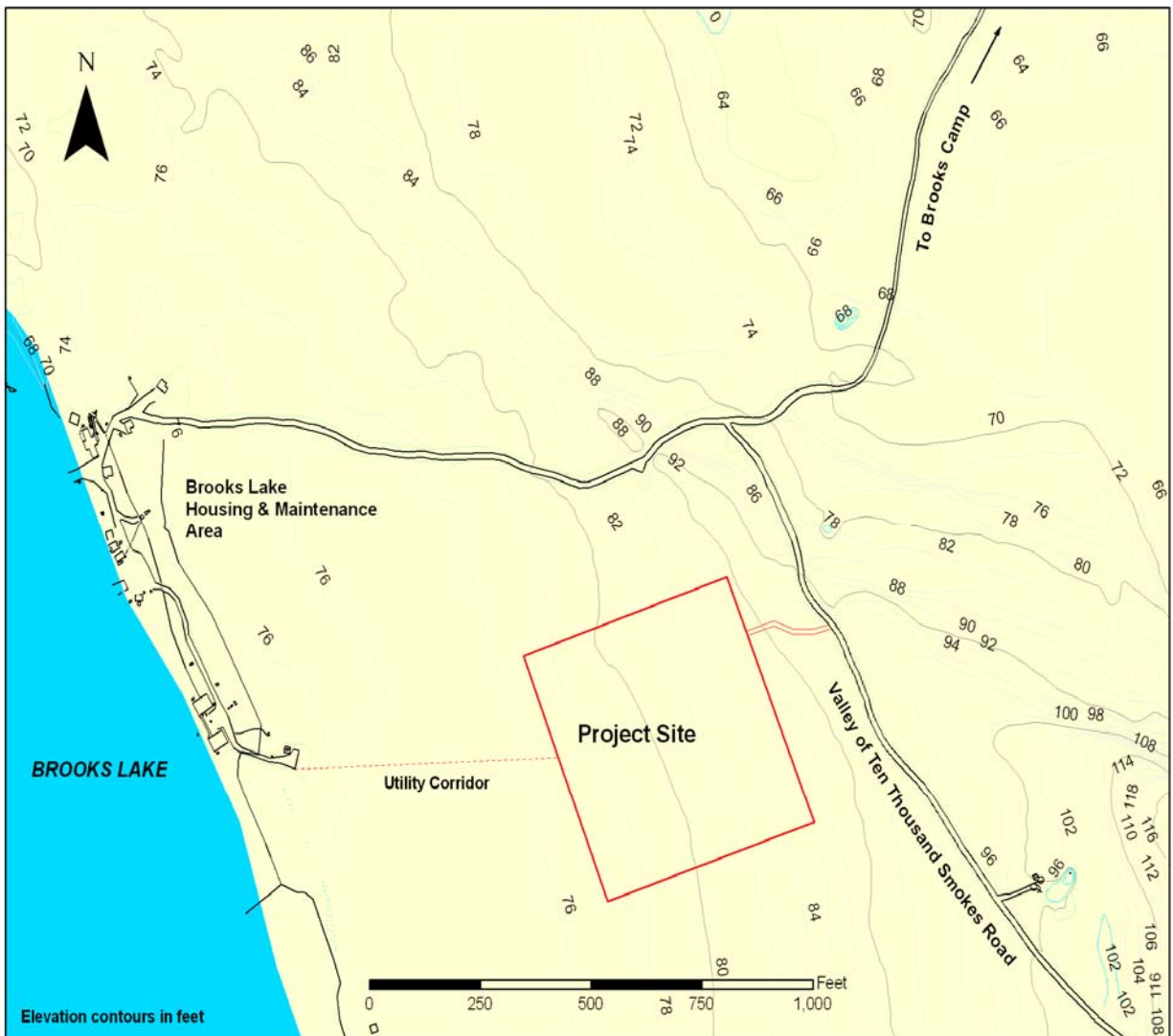


Figure 6. Conceptual Site Plan

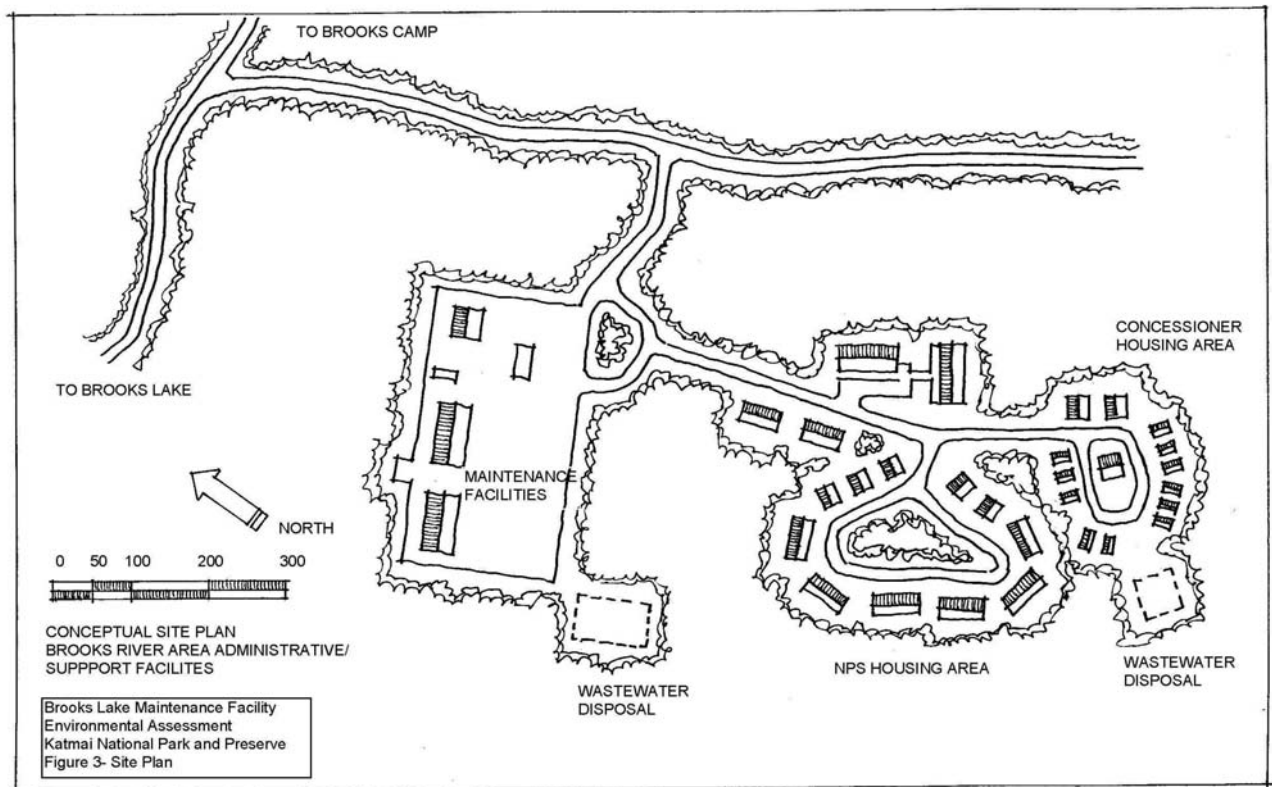


Figure 7. Brooks Lake Structures to be Removed

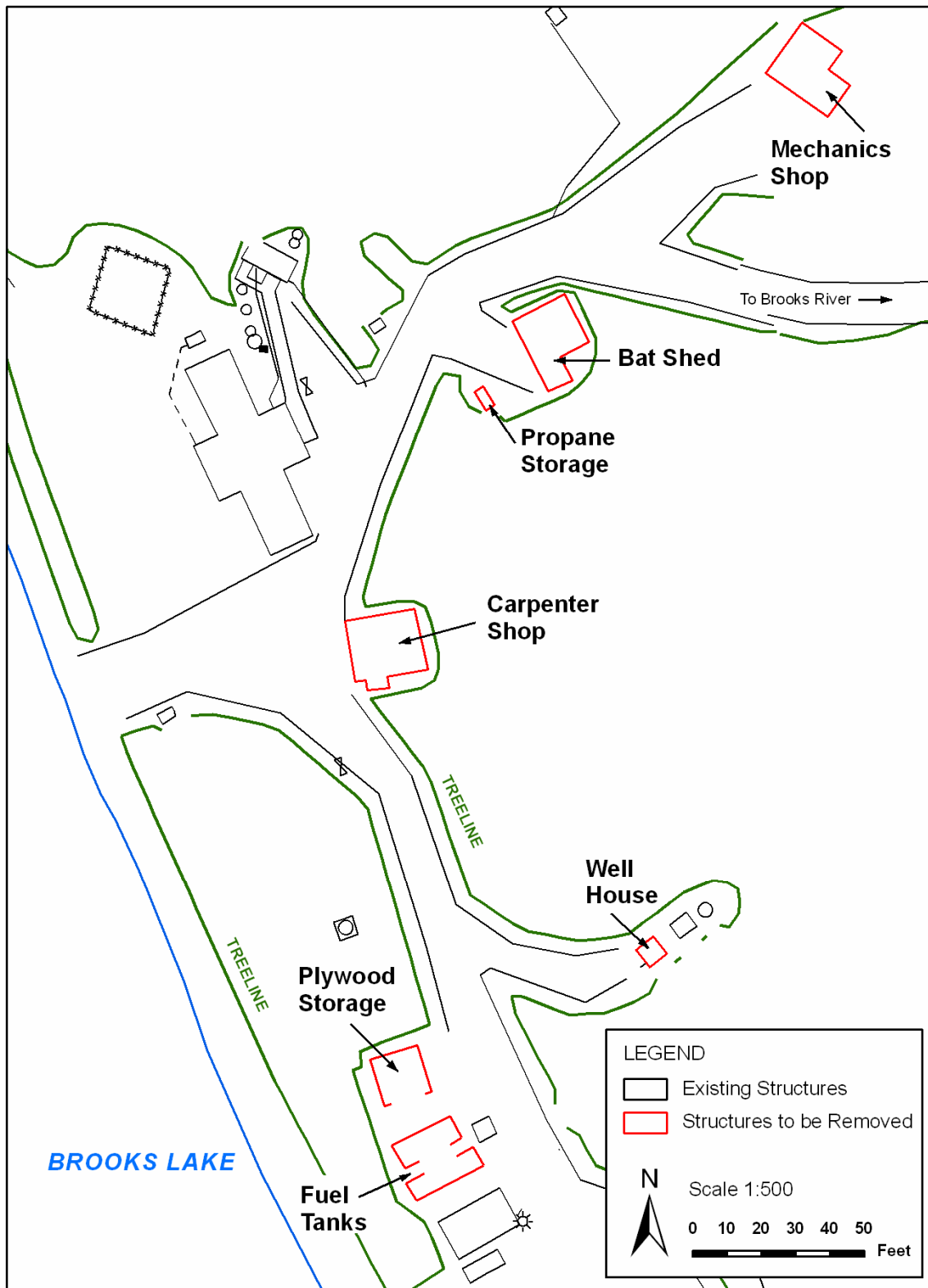
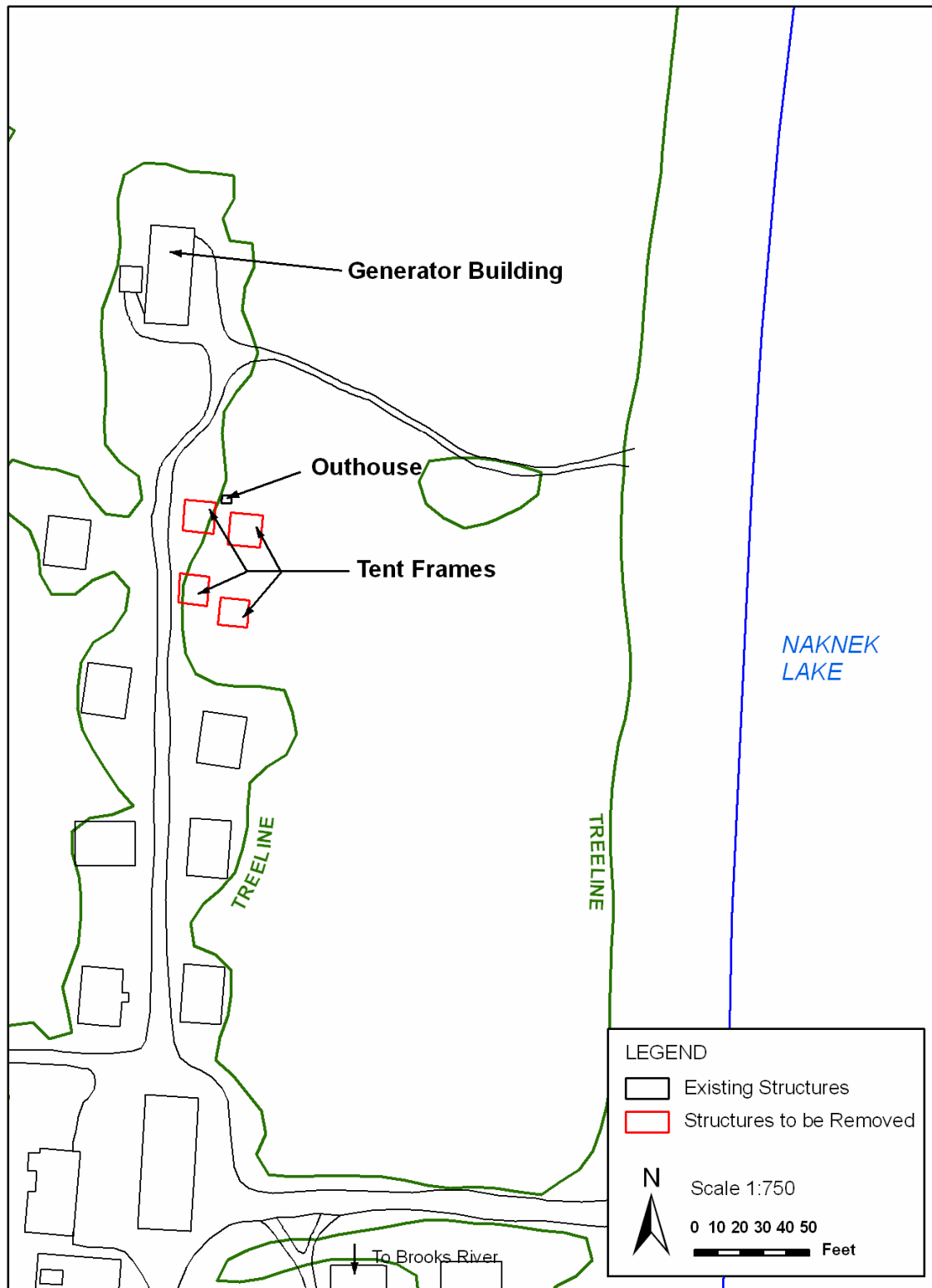


Figure 8. Brooks Camp Structures to be Removed



8.0 APPENDIX

- A. Coastal Zone Negative Determination
- B. ANILCA Section 810 Subsistence Evaluation
- C. Cost Estimates

APPENDIX A

Coastal Zone Negative Determination

NEGATIVE DETERMINATION

Proposed Brooks Lake Maintenance Facility with Relevant Standards of the Alaska Coastal Management Plan (ACMP) and Enforceable and Administrative Policies of the 1996 Lake and Peninsula Borough (L&PB) Coastal Management Plan

A. Coastal Development

L&PB Coastal Management Plan (CMP) Section A-1, Water-Related Activities

Response: The relocation and replacement of the maintenance facility and housing units in the vicinity of Brooks Lake is an activity that is neither water-dependent nor water-related. The new maintenance and housing facility would be relocated to an inland site away from Brooks Lake and Naknek Lake. This location would improve safety and efficiency of Brooks Camp maintenance, administrative support, and visitor facilities.

L&PB CMP Section A-2, Mitigation

Response: This project would be expected to result in no negative impacts for fish and wildlife populations and their habitats, commercial fishing, subsistence, air and water quality, cultural resources, and recreational resources. Mitigation measures would be taken for visual resources, visitor use, wildlife, cultural resources, vegetation and soils, natural sound, socioeconomics, and water quality and fisheries resources as described in Section 2.4 of the EA.

L&PB CMP Section A-4, Compatibility

Response: The proposed project would be compatible with adjacent land and water uses and the primary purposes of the Brooks River area: (1) to protect habitats for, and populations of, fish and wildlife, including, but not limited to, high concentrations of brown bears and their den areas and maintain the watersheds and habitat vital to red salmon spawning in an unimpaired condition, (2) to provide for the general public resource-based recreation that does not impair natural and cultural values and (3) to protect and interpret outstanding natural, cultural, geologic and scenic values.

B. Coastal Habitats and Resources

L&PB CMP Section B-1, State Habitat Standards

Response: The proposed Brooks Lake maintenance facility project would comply with state habitat standards at 6 AAC 80.130.

L&PB CMP Section B-2, Upland Habitats

Response: The proposed project would involve relocating the Brooks Lake maintenance facility and fuel storage tanks and four Brooks Camp employee housing units to an upland site located along the Valley of Ten Thousand Smokes (VTTS) Road. A vegetation clearing work plan would be developed prior to clearing of the construction zone. The plan would document the type and size of the vegetation affected by clearing of the construction easement. Disturbed sites

would be cleared, but revegetation would be passive (i.e., direct reseeding would not occur). After each structure is removed or relocated, the former sites would be rehabilitated and passively revegetated.

A Storm Water Pollution Prevention Plan (SWPPP) would be completed in accordance with federal and state regulations. The SWPPP would include project best management practices (BMPs) to reduce runoff and avoid water quality impacts. BMPs would include using clean fill material if needed, using minimum clearing distances, use of silt fences and sediment basins to reduce erosion during construction, dust abatement practices, and use of roadside culverts to maintain natural drainage and surface water flow patterns. Additional mitigations for upland habitats would occur as described in Response A-2.

L&PB CMP Section B-4, Anadromous Fish Waters

Response: A bulk fuel storage plant consisting of 5,000 gallons of diesel storage and 4,000 gallons of gasoline storage, as well as a 70-kilowatt (kW) power generation facility, are all located within 20 feet of the north shore of Brooks Lake. These non-water dependent structures would be relocated to an upland site adjacent to the VTTS Road and the site rehabilitated and passively revegetated. The proposed maintenance and housing facilities would be outside of the 100-foot minimum distance from the ordinary high water mark of anadromous fish waters (Naknek and Brooks Lakes) and would be expected to have no adverse effect on anadromous fish waters. Please refer to mitigation measures in Response A-2.

L&PB CMP Section B-12, Bank Stabilization

Response: This project would be expected to result in no negative impacts to the lake shoreline. BMPs would be in place to ensure that the removal and rehabilitation of the existing maintenance facility area adjacent to Brooks Lake would not result in sedimentation into lake waters.

C. Air, Land, and Water Quality

L&PB CMP Section C-1, State Standards

Response: The project would comply with the stricter of the ACMP air, land, and water quality standards in 6 AAC 80.140, or the borough standards. Negative impacts to water quality would be avoided through the use of BMPs as described in Response B-2.

L&PB CMP Section C-2, Wastewater Discharge

Response: The proposed Brooks Lake maintenance facility project would involve the construction of a new wastewater system at the planned upland site adjacent to the VTTS Road. The wastewater system would meet the needs of the new maintenance facility and employee housing area. The NPS would submit a modified domestic wastewater collection plan to the ADEC for approval and a permit to construct and operate the system.

L&PB CMP Section C-3, Waste Handling and Spill Contingency Planning

Response: The NPS currently incorporates provisions for the proper transfer, storage, disposal, and handling of petroleum products and fuel, solid waste, waste oil and sewage in accordance with local, state, and federal regulations for the Brooks River area. The new maintenance facility

and housing area would be incorporated in a contingency response plan to address discharges of oil, petroleum products, or hazardous substances.

L&PB CMP Section C-4, Environmental Protection Technology

Response: The proposed new maintenance facility would incorporate environmental protection technology to limit emissions and the discharge of effluent, and for the storage, handling, cleanup, and disposal of oil and hazardous materials. Examples of this technology would include utilizing passive solar panels, used oil heaters, glycol recyclers, and organic parts washers. Katmai Park has also implemented an Environmental Management System (EMS) program to incorporate sustainable planning, pollution prevention, Best Management Practices, waste reduction, and environmentally preferable purchasing in park activities.

L&PB CMP Section C-5, Discharge of Suspended and Settleable Solids

Response: The proposed construction and management of the Brooks Lake maintenance facility and housing area would not result in suspended materials or settleable solids introduction into waters of the Borough in a manner, timing, or quantity which could have a significant adverse impact on marine or freshwater productivity or habitats, marine fish, shellfish, or resident or anadromous fish populations. As described in Response B-2, the SWPPP would include project BMPs to reduce runoff and avoid water quality impacts.

L&PB CMP Section C-7, Sewage Disposal

Response: The proposed Brooks Lake maintenance and housing facilities sewage disposal areas would be setback a minimum of 1,500 feet from public and private water systems and a minimum of 200 feet from any surface waters. All water and wastewater separation distances would comply with ADEC regulations at 18 AAC 72 and 18 AAC 80.

L&PB CMP Section C-8, Siting of Petroleum Product Facilities

Response: One of the objectives of the proposed project is to transfer the existing two bulk fuel storage tanks (4,000-gallon and 5,000-gallon capacities) from Brooks Lake to the new upland maintenance facility area. These fuel tanks would be sited a minimum of 1,500 feet from domestic water supplies and a minimum of 200 feet from ordinary high water or MHHW of any surface waters. Impermeable berms and basins capable of retaining 115 percent of the tank capacity (or capacity of the largest tank where multiple tanks are separately valved) plus 12 inches of freeboard would be installed to minimize the potential for inadvertent pollution.

L&PB CMP Section C-10, Cumulative Impacts on Water Quality

Response: This project would be expected to result in no cumulative negative impacts on water quality as described in Section 4 of the EA.

D. Subsistence Use/Personal Use

L&PB CMP Section D-2, Development Impacts

Response: Per ANILCA, subsistence activities are only permitted in Katmai National Preserve, not in Katmai National Park. The effects of the proposed action on subsistence uses and needs were dismissed from further analysis in the EA because the proposed action is located in the Park. An ANILCA Section 810(a) summary evaluation and analysis is contained in Appendix B of the EA, based on potential impacts of proposed NPS activities in the Preserve. The proposed

project would not be expected to alter subsistence habitats or result in any measurable reduction in or redistribution of wildlife or other subsistence resources in Katmai National Preserve. The project would not be expected to result in increase competition for fish, wildlife, or other resources that would significantly impact subsistence users. NPS regulations and provisions of the ANILCA mandate that if and when it is necessary to restrict taking of fish or wildlife, subsistence users will be given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition from resource users other than subsistence users. The park superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure continued viability of a particular fish or wildlife population.

L&PB CMP Section D-3, Access

Response: An ANILCA Section 810(a) analysis was completed and added as Appendix A to the EA. The proposed action is not expected to limit or restrict the access of subsistence users to natural resources within the Katmai National Preserve. The park superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

E. Transportation and Utilities

L&PB CMP Section E-4, Siting, Construction, and Operation

Response: The proposed Brooks Lake maintenance facility and housing area would be sited, designed, constructed, and operated to minimize impacts to habitats, biological resources, coastal resource uses, recreation, socio-economic characteristics, and traditional subsistence and personal use activities as described in the EA. The proposed improvements would be located adjacent to the existing VTTS Road corridor and away from anadromous fish streams and lakes.

H. Recreation

L&PB CMP Section H-1, Protection of Recreation Values

Response: Public use goals and objectives for the Brooks River area pertinent to this specific project are that the NPS and concessioner are to develop and maintain facilities for recreational users that are consistent with park management concerns regarding wildlife, fish, biological diversity, preservation of cultural resources and public safety. This project would enhance this goal by providing adequate facilities for the support of the long term operation of Brooks Camp. Construction activities would be timed to avoid, as much as possible, interference with visitor use and enjoyment of the area.

I. Archeological and Historic Resources

L&PB CMP Section I-1, Cultural and Historic Resource Areas and I-2, Resource Protection

Response: The NPS would comply with the National Historic Preservation Act and related laws and regulations, including consultation with the State Historic Preservation Office (SHPO) and affected parties. Cultural resource mitigation measures are described in Section 2 of the EA. No impacts to cultural resources would be expected.

APPENDIX B

Subsistence Evaluation

Alaska National Interest Land Conservation Act (ANILCA)

Section 810(a) Summary Evaluations and Findings

BACKGROUND

Subsistence uses, as defined by the Alaska National Interest Land Conservation Act (ANILCA), Section 803, means "the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade." Subsistence activities include hunting, fishing, trapping, and collection of berries, edible plants, and wood or other materials.

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the ANILCA. It summarizes the evaluation of potential restrictions to subsistence uses that could result from the proposed action by the National Park Service (NPS) to relocate and replace selected facilities at the Brooks Camp Developed Area in Katmai National Park. Since the ANILCA made no provisions to allow subsistence activities in Katmai National Park, this analysis will only address potential impacts of proposed NPS activities in Katmai National Preserve.

II. EVALUATION PROCESS

Section 810(a) 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.”

A proclamation by President Woodrow Wilson in 1918 created Katmai National Monument from a reservation of approximately 1,700 square miles. Three major purposes of the monument designation were 1) to preserve an area important to the study of volcanism, 2) to preserve the Valley of Ten Thousand Smokes and 3) to conserve an area potentially popular with persons seeking unique scenery and for those with scientific interest. Increased in 1931 to include Brooks Lake, Grosvenor Lake, Lake Colville, and part of Naknek Lake, again in 1942 to include offshore islands within five miles of the monument coastline, and again in 1969 to include the remainder of Naknek Lake, the monument grew to contain 4,361 square miles.

With the passage of the ANILCA in 1980 the designation of 3.7 million acres of the monument was changed to a national park, and an additional 308,000 acres was included as a national preserve. Furthermore, 3.4 million acres of the park and preserve were designated as wilderness. The Katmai Preserve was created by the ANILCA Section 202(2) for the following purposes (among others) “to protect habitats for, and populations of, fish and wildlife including, but not limited to, high concentrations of brown/grizzly bears and their denning areas; to maintain unimpaired the water habitat for significant salmon populations; and to protect scenic, geological, cultural and recreational features.” The taking of fish and wildlife for subsistence uses is allowed by the ANILCA within Katmai National Preserve pursuant to Section 203, however, subsistence activities are not authorized within Katmai National Park.

The potential for significant restriction of subsistence uses must be evaluated for the proposed action’s effect 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.” (Section 810, ANILCA).

III. PROPOSED ACTION ON FEDERAL PUBLIC LANDS

The NPS is considering facility upgrades at the Brooks Camp Developed Area of Katmai National Park and Preserve starting in summer of 2007. This site is located approximately 30 air miles east of the park headquarters and gateway visitor center in King Salmon, Alaska. Access to Brooks Camp is primarily from King Salmon by either float plane or boat. Brooks Camp is located at the mouth of the Brooks River, on the shore of Naknek Lake.

The proposed project includes three components related to administrative facilities:

- Relocate and replace maintenance facilities currently located in the vicinity of Brooks Lake in Katmai National Park and Preserve. Existing facilities would be removed or converted to other NPS uses.

- Construct 2 duplex housing units in the park in the vicinity of the new location for maintenance facilities. Existing housing units (tent structures) in the Brooks Camp area would be removed and the sites rehabilitated to a natural condition.
- Develop a conceptual design for future employee housing and other administrative structures in the park. Structures would be located in the vicinity of the new location for the maintenance facilities and the proposed location for the duplex housing units. Maintenance structures, laundry facilities, and concessionaire maintenance facilities are examples of administrative structures in the park.

Project components and alternatives are described in detail in Chapter 2 of this Environmental Assessment.

IV. AFFECTED ENVIRONMENT

A summary of the affected environment pertinent to subsistence uses at Katmai National Preserve is presented here.

Katmai National Preserve, encompassing 308,000 acres, is located on the northern end of the Alaska Peninsula in Game Management Unit 9 and contains geologic features, scenery, wildlife, and cultural resources of national significance. Subsistence activities are not permitted in Katmai National Park in accordance with the ANILCA Title II Section 203; Title VIII Section 816(a); and Title XIII Section 1314(c). However, subsistence uses are allowed within Katmai National Preserve in accordance with the ANILCA Title II Section 203 and provisions of Title VIII. Other federal public lands in GMU 9C include Bureau of Land Management lands situated along the south-southeast boundary of the Kvichak River drainage and adjacent to the northwest boundary of the Katmai National Preserve.

Subsistence activities in Katmai National Preserve include hunting, trapping, fishing, gathering firewood, picking berries and wild plants, and gathering bird eggs. The area is used for subsistence by residents of Kokhanok, Igiugig, Levelock, Naknek and King Salmon to harvest caribou, brown bear, moose, beaver, snowshoe hare, fox, lynx, mink, wolf, wolverine, ptarmigan, waterfowl, salmon, trout, berries, wild edible plants, and other wood resources.

The proposed project is completely within the Brooks Camp Developed Area. The Brooks Camp Developed Area lies completely within Katmai National Park (formerly Katmai National Monument). Lands within Katmai National Park are closed to subsistence uses. The proposed project will not affect subsistence activities in Katmai National Preserve.

The ANILCA authorized subsistence uses with Katmai National Preserve, and on adjacent federal public lands managed by the BLM and the USFWS. Becharof National Wildlife Refuge shares a common boundary with the park and is the closest land to Brooks Camp where Title VIII subsistence is allowed. The boundary between the park and the refuge is irregular, however the closest refuge land to Brooks Camp is a distance of approximately 16 miles.

Regional subsistence activities that occur outside of the park include hunting, fishing, trapping, berry picking, and plant gathering. Caribou, moose, beaver, snowshoe hare, fox, lynx, mink,

wolf, wolverine, river otter, beaver, ducks, geese, waterfowl eggs, edible plants and berries, salmon, trout, pike, whitefish, and white spruce constitute the major subsistence resources used by local residents.

The Brooks River provides spawning habitat for primarily sockeye (red) salmon which migrate from Bristol Bay to the Naknek River, to Naknek Lake and to the Brooks River. Most of the salmon harvested in the Naknek River system have been produced within Katmai National Park and many have been produced in the Brooks River/Brooks Lake section of this system.

For additional detailed description of the affected environment, see *General Management Plan, Wilderness Study Review, Land Protection Plan*, Katmai National Park and Preserve, Alaska, 1986.

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on subsistence activities by the proposed project, three evaluation criteria were analyzed relative to current subsistence resources that could be impacted. The evaluation criteria are:

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

1) The Potential to Reduce Populations:

There should be no significant reductions in populations of subsistence fish and wildlife resources as a result of the proposed project in the Brooks Camp Developed Area. There is little or no subsistence hunting and trapping activity in the area and the proposed project should have no long-term effect on local moose, bear, and small game populations. Some spruce and birch trees and other vegetation may be disturbed; however this should have no impact on the availability, quality, and overall abundance of moose, bear, or small game habitat.

The proposed project is not expected to alter subsistence habitats or result in any measurable reduction in or redistribution of wildlife or other subsistence resources in Katmai National Preserve. Provisions of the ANILCA, the Federal Subsistence Board, and NPS regulations provide the tools for adequate protection of fish and wildlife populations within Katmai National Preserve while ensuring a subsistence priority for local rural residents. In addition, the park superintendent may enact closures or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

2) Restriction of Access:

The proposed action in the Brooks Camp Developed Area is not expected to limit or restrict the access of subsistence users to natural resources within the Katmai National Preserve. The park superintendent may enact closures or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

3) Increase in Competition:

The proposed project at the Brooks Camp Developed Area is not expected to result in increased competition for fish, wildlife, or other resources that would significantly impact subsistence users. NPS regulations, and provisions of the ANILCA, mandate that if and when it is necessary to restrict taking of fish or wildlife, subsistence users will be given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition from resource users other than subsistence users. The park superintendent may enact closures or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

VI. AVAILABILITY OF OTHER LANDS

The proposed project is site-specific to the Brooks Camp Developed Area located in Katmai National Park. Since there are no other land inholdings available within the project area, no other lands are suitable for the project. The proposed project is consistent with NPS mandates, the park's General Management Plan, and is not expected to impact subsistence uses. Subsistence users also have access to and utilize other federal, State, and private lands within the region for subsistence activities.

VII. ALTERNATIVES CONSIDERED

A No Action Alternative to preserve the status quo and continue to operate and maintain Brooks Camp and Brooks Lake with the existing facilities was considered in this analysis. This alternative was rejected in favor of the proposed action alternative because it did not relocate and improve substandard maintenance and housing facilities with energy efficient, standard quality administrative structures that require less maintenance, satisfy regulatory health and safety requirements, and move facilities away from sensitive archeological areas. No other alternatives were considered in this analysis.

VIII. FINDINGS

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

APPENDIX C

Cost Estimates

Initial One-Time Construction Costs:

Proposed Alternative: Maintenance Yard and Shop: (PMIS 101027)	\$ 2,421,000.
Proposed Alternative: Duplex Employee Housing: (PMIS 88854)	\$ 470,000.
No Action Alternative: No New Construction:	\$ 0.

Annual Operating Costs:

Proposed Alternative: New Maintenance Facilities:	\$ 33,000.
No Action Alternative: Maintenance Facility Costs:	\$ 27,000.

The increased annual operating costs of the new maintenance facilities would be recuperated by efficiencies in park maintenance operations, specifically in savings in travel, freight and rehabilitation and replacement costs.

The annual operating costs for employee housing would not change from the No Action Alternative to the proposed action.