

# Klondike Gold Rush NHP



## ENVIRONMENTAL ASSESSMENT 13 January 2006



### Sheep Camp Campground Relocation Klondike Gold Rush National Historical Park Skagway, Alaska

United States Department of the Interior  
National Park Service

## **PURPOSE AND NEED**

The National Park Service (NPS) is considering relocating recreational Sheep Camp Campground and a portion of the Chilkoot Trail from their current flood-prone locations to nearby sites with reduced flood and erosion potential. Sheep Camp Campground is a primitive backcountry facility with 20 campsites (serving up to fifty campers per night during peak season) located twelve miles up the rugged Chilkoot Trail in Klondike Gold Rush National Historical Park (Figure 1). The campground lies immediately adjacent to the Taiya River, a dynamic glacial river prone to spontaneous channel migrations and shallow flooding. Since its construction in 1993, the campground has experienced frequent inundation from flood waters. It is located within the one to two year floodplain and is subject to periodic flooding during the summer visitor use season (Rice 2004). A flood in 2002 created particularly unsafe conditions for Chilkoot Trail hikers and caused extensive damage to Sheep Camp facilities. Following completion of an Environmental Assessment (EA), emergency flood remediation measures were taken in the spring of 2003 which involved replacement of the flood damaged campsites, repair of a footbridge, rerouting of the Chilkoot Trail, and relocation of several pit toilets (NPS 2003).

The purpose of the proposed project is to improve the safety of visitors hiking the Chilkoot Trail, alleviate sanitation concerns, eliminate further degradation of floodplain values, and enhance backcountry operations. Frequent flooding in the existing campground has impacted visitor safety and access in this popular backcountry area of the park. Relocation of the campground from the flood zone is necessary to provide the type and level of visitor services described in the park's General Management Plan (GMP) for the Chilkoot Trail Unit (NPS 1996). This EA analyzes the proposed action and no action alternatives and related impacts. The EA has been prepared in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9).

## **BACKGROUND**

Three agencies cooperate in the management of the Chilkoot Trail: Alaska State Parks, Parks Canada, and the NPS. The Chilkoot Trail unit is enclosed within a corridor of land mostly owned by the State of Alaska, portions of which are administered by the NPS through a Memorandum of Understanding (MOU) reauthorized in 2002. Of the nearly 10,000 acres in this unit, the federal ownership is approximately 725 acres. The Sheep Camp site is located on state land and is adjacent to City of Skagway owned land. The NPS has consulted with the City of Skagway and Alaska State Parks on this project.

The NPS Organic Act of 1916 states that the purpose of the national parks is to "conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (16 U.S.C. 1). The NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The NPS Management Policies and Director's Order #55 use the terms "resources and values" to mean the full spectrum and intangible attributes for which the park is established and are 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 National Park Service is to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

Enabling legislation passed on June 30, 1976 created the Klondike Gold Rush National Historical Park..."in order to preserve in public ownership for the benefit and inspiration of the people of the United States, historic structures and trails associated with the Klondike Gold Rush of 1898,





the Secretary of the Interior is authorized to establish the Klondike Gold Rush National Historical Park, consisting of a Seattle unit, a Chilkoot Trail unit, and a White Pass Trail unit." All of the lands within the boundaries of the park in Alaska are included on the National Register of Historic Places. On June 16, 1978, the Chilkoot Trail and Dyea were designated as National Historic Landmarks. National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

The Chilkoot Trail and Dyea National Historic Landmark is located about eight road miles west of downtown Skagway. Access to the site is along a narrow, windy, and mostly gravel road from Skagway. The Dyea and Chilkoot Trail National Historic Landmark includes all of the historic Chilkoot Trail and the townsite of Dyea. The Chilkoot Trail extends from Dyea, Alaska to Bennett, British Columbia, a total linear distance of 33 miles. The United States portion of the Chilkoot Trail follows the banks of the Taiya River north from its mouth at Dyea and the Taiya Inlet to its headwaters at Chilkoot Pass a distance of approximately 16.5 miles. The trail crosses the Canadian border at the summit of Chilkoot Pass. Sheep Camp Campground is a primitive backcountry campground located at mile 12 of the Chilkoot Trail.

During the summer of 2004, a U.S. Fish and Wildlife Service (USFWS) hydrologist conducted an evaluation of Taiya River flooding and erosion issues at Sheep Camp (Rice 2004). It was noted that eastward migration of the river channel was an immediate threat to a narrow footbridge spanning a channel of the Taiya River, a section of the Chilkoot Trail at the north end of the bridge and the southern half of Sheep Camp campground. Bioengineering techniques to stabilize the channel were not considered a feasible alternative given the extremely dynamic nature of the river. Removing the campground and the trail from the active floodplain was the final recommendation (Rice 2004).

These events prompted the NPS to evaluate the location of Sheep Camp campground and propose its relocation to a site with reduced flood potential to prevent further damage to park facilities and ensure visitor safety and access along the Chilkoot Trail. Public participation has been an integral part of the Sheep Camp Campground Relocation planning process. Public scoping for this EA initially began in July of 2005 when the public was invited to comment on issues and alternatives to be considered during the environmental assessment of this project. Comments from various federal, state, and local agencies; public-interest groups; local communities; and the general public were sought through a scoping notice that was issued on July 28, 2005, for a 45 day comment period. The scoping announcement appeared in the local newspaper, was posted in several public locations throughout Skagway and was published on the NPS public comment and planning website (<http://parkplanning.nps.gov>). One written comment letter was received from a private citizen that suggested two potential campground locations one of which entailed continued utilization of the existing location. Both suggestions are addressed in the EA.

In addition to the investigation conducted by the USFWS Hydrologist, three site visits to the project area have been made by teams of NPS planners and resource managers since 2004. In July 2004, the NPS Biologist, Archeologist and Trail Crew Leader visited the area to assess a 30' section of the Chilkoot Trail immediately south of the campground that had washed out the previous week. This group searched for a potential trail reroute around the eroding trail segment which would also bypass a footbridge that likewise appeared to be threatened by the approaching river. In June of 2005, an interdisciplinary team of nine NPS employees hiked the Chilkoot Trail from Dyea to Sheep Camp. The team was comprised of five staff members from Klondike Gold Rush National Historical Park (Chief Ranger, Chief of Maintenance, Trail Crew Leader, Biologist, and Archeologist) and four regional and national support office specialists (Landscape



Architect, Geologist, Geomorphologist, and Environmental Planner). The purpose of this trip was to evaluate potentially suitable areas for relocation of Sheep Camp campground.

The area known as Sheep Camp was the site of a thriving but short-lived gold rush boom town (1897-1899), thus the area is now a major archeological site littered with historic resources making the location of modern developments challenging. After an exhaustive search of the surrounding area, two potentially suitable locations for a new campground were identified for more in depth study (Hahr 2005). During the summer of 2005, park resource management specialists conducted intensive resource inventories (including extensive subsurface testing for archeological deposits) of the potential sites and recommended a preferred location for the campground. A smaller team of NPS employees (Chief Ranger, Landscape Architect, Chief of Maintenance, Biologist and Archeologist) returned to the area in late September 2005 to consider specific details of the campground location and design.

Sanitation and the disposal of human waste in the backcountry were other issues considered by the planning team. For years, pit toilets were the preferred means of managing human waste in backcountry campgrounds along the U.S. portion of the Chilkoot Trail. However, pit toilets have long been problematic in this environment given the high volume of backcountry users, the maritime climate of SE Alaska, and limited suitable sites for this type of facility. In 2005, the NPS initiated a pilot project to evaluate the effectiveness of an environmentally sustainable composting toilet (i.e., “moldering privy”) for use on the Chilkoot Trail. Two such toilets were constructed at Sheep Camp and appear to be functioning properly after one summer of use (Steidel 2005). Moldering privies appear to provide an environmentally sound alternative to traditional pit toilets at Sheep Camp.

## **ISSUES**

To focus the environmental assessment, the NPS selected specific issues for further analysis and eliminated others from evaluation. A planning issue is an area of controversy or concern regarding management of resources or uses on the lands within the planning area. Issues for the Sheep Camp Campground Relocation project were identified through public scoping, concerns raised to NPS staff in interactions with public land users, and resource management concerns of the NPS and cooperating agencies. These issues drive the formulation of the EA alternatives, and addressing them has resulted in the range of management options across the alternatives. Subsequent environmental consequences related to each alternative focus on these issues. A brief rationale for the selection of each topic is given below:

### **Issues Selected for Analysis**

Natural Soundscape: The natural soundscape of the area could be affected temporarily by noise generated by use of helicopters to transport materials to the project area and by the use of power tools during construction.

Vegetation: Trees, shrubs, forbs, and lichens could be affected by trail relocation and campground construction.

Soils: The proposed project could affect soils in the project area.

Wildlife: The use of helicopters and chainsaws could temporarily displace wildlife from the project area. Construction of the campground in a new location could permanently displace some species of wildlife from the area while closure of the existing campground could allow reoccupation of this site by displaced species.

Recreation/Visitor Use: Construction could temporarily affect park visitors traveling or recreating in the project area. The No Action Alternative would not alleviate the safety and access concerns associated with the flooding and erosion.

Park Operations and Management: NPS operations and management at Sheep Camp could benefit from relocation of the campground to a site with reduced flood potential.

National Historic Landmark: The resources and values of the Dyea and Chilkoot Trail National Historic Landmark could be affected by the proposed actions.

Cultural Resources: Cultural resources within the area could be affected by the clearing of vegetation and ground disturbance associated with the construction of tent sites, trails, outhouses and other facilities. Visitors may also impact cultural resources by trampling and/or collecting.

Water Resources: Construction of a new footbridge would involve in-water work; therefore, water resources could be affected.

Safety: Rockfall and avalanches are possible at any time in the Upper Taiya River valley.

Floodplains: The current location of Sheep Camp Campground is within the 100-year floodplain, and a Floodplain Statement of Findings was prepared for this site in 2003 (NPS 2003). The No Action Alternative could continue to impact floodplain values. The proposed relocation of Sheep Camp Campground would remove overnight accommodations and associated development from the floodplain, and relocate these visitor facilities to a location outside of the flood hazard zone; therefore, a Floodplain Statement of Findings would not be necessary if the proposed action alternative is implemented (pursuant to Director's Order 77-2 Floodplain Management Procedural Manual). A qualified NPS Geomorphologist and Geologist evaluated potential sites for relocating Sheep Camp Campground and concluded that the proposed site is not within a flood-hazard zone (Hahr 2005). Relocation of the campground could have beneficial impacts on floodplain values.

### **Issues Eliminated from Further Consideration**

Wetlands: An NPS Biologist trained in U.S. Army Corps of Engineers wetland delineation techniques determined that there is no clear evidence of wetlands in the site chosen for campground and trail relocation. Prior to construction of the existing campground, it was determined that no wetlands exist in this location (NPS 1992). The vegetation and soils within the project area indicate these sites would not likely be classified as wetlands. Generally, soils within the Upper Taiya valley bottom are very deep and well-drained (Paustian et al. 1994). Since there are no wetlands on the site of the proposed project, no impact to wetlands would occur.

Air Quality: Since no actions are proposed that would result in any measurable effects on air resources, this issue will not be considered further.

Threatened and Endangered Species: There are no known federal or state listed threatened or endangered species, federal candidate species, or state-listed species of special concern within the project area (USFWS 2002).

Wilderness: There is no Congressionally designated wilderness within the park. A wilderness suitability analysis for the Chilkoot Trail and White Pass Units of Klondike Gold Rush National

Historical Park was completed in 1988 and reviewed in the park's GMP (1996). No block of land was found suitable due to the lack of minimal acreage. Consequently, no effects on wilderness would occur.

Subsistence: Subsistence activities in or adjacent to the project area would not be affected by the alternatives (see Appendix A for the ANILCA Section 810 subsistence evaluation).

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations: This order 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 any changes in the socioeconomic environment of the project area, and, therefore, would not be expected to have any direct or indirect impacts to minority or low-income populations or communities.

Fisheries: Although the project area is adjacent to the Taiya River, proposed activities would have no effect on fisheries. The upper Taiya River does not contain resident or migratory fish due to downstream obstructions (Paustian et al. 1994). The nearest fish populations are located approximately 6 miles downstream of the project area.

Rare Plants: In 2002, a vascular plant inventory was conducted in the park and no rare or sensitive species were located in or near the project area (Carlson et al. 2004).

## **PERMITS AND APPROVALS NECESSARY TO IMPLEMENT THE PROJECT**

Table 1 outlines the permits and approvals needed to proceed with the proposed action.

Table 1: Environmental Permits and Approvals for Project Completion			
Required Permit/Approval	Regulatory Agency	Authority	Description
Project possibly affecting historical or archeological sites (Cultural Resource Concurrence)	State Historic Preservation Officer (SHPO)	National Historic Preservation Act of 1966	For any federal project the SHPO must concur that cultural resources would not be adversely affected.
Discharge of dredged or fill material into U.S. waters (U.S. ACE Fill Permit)	U.S. Army Corps of Engineers	Section 404, Federal Water Pollution Control Act of 1972 as amended in 1977 (Clean Water Act)	The U.S. ACE must authorize the discharge of fill in U.S. waters. A U.S. ACE Nationwide Permit #18 applies.

## ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternatives were developed using an interdisciplinary team process that included NPS staff specialists. Two alternatives were developed and carried forward for detailed analysis in the EA. One alternative describes the continuation of current, existing management and serves as the No Action Alternative. The other alternative (the Proposed Action Alternative) describes proposed changes to current management, as well as what aspects of current management would be carried forward. These two alternatives were developed with input from the public, collected during scoping, from the NPS planning team, and through collaborative efforts conducted with the City of Skagway. The alternatives provide a range of choices for meeting NPS planning and program management requirements and resolving the planning issues identified through scoping.

### NO ACTION ALTERNATIVE

Under this alternative, no action would take place at Sheep Camp Campground. Sheep Camp Campground would remain in its current location and the segment of the Chilkoot Trail south of the campground would not be relocated to a site outside of the active floodplain. Zig Zag Bridge would not be relocated to a more stable location.

### PROPOSED ACTION ALTERNATIVE

Under the Proposed Action Alternative, the NPS would relocate Sheep Camp campground and a portion of the Chilkoot Trail from the active floodplain. A footbridge known as “Zig Zag Bridge” that spans a newly occupied channel of the Taiya River would also be relocated to a more stable site approximately 1,230 feet upstream of its current location crossing Waterfall Creek (Figure 2).



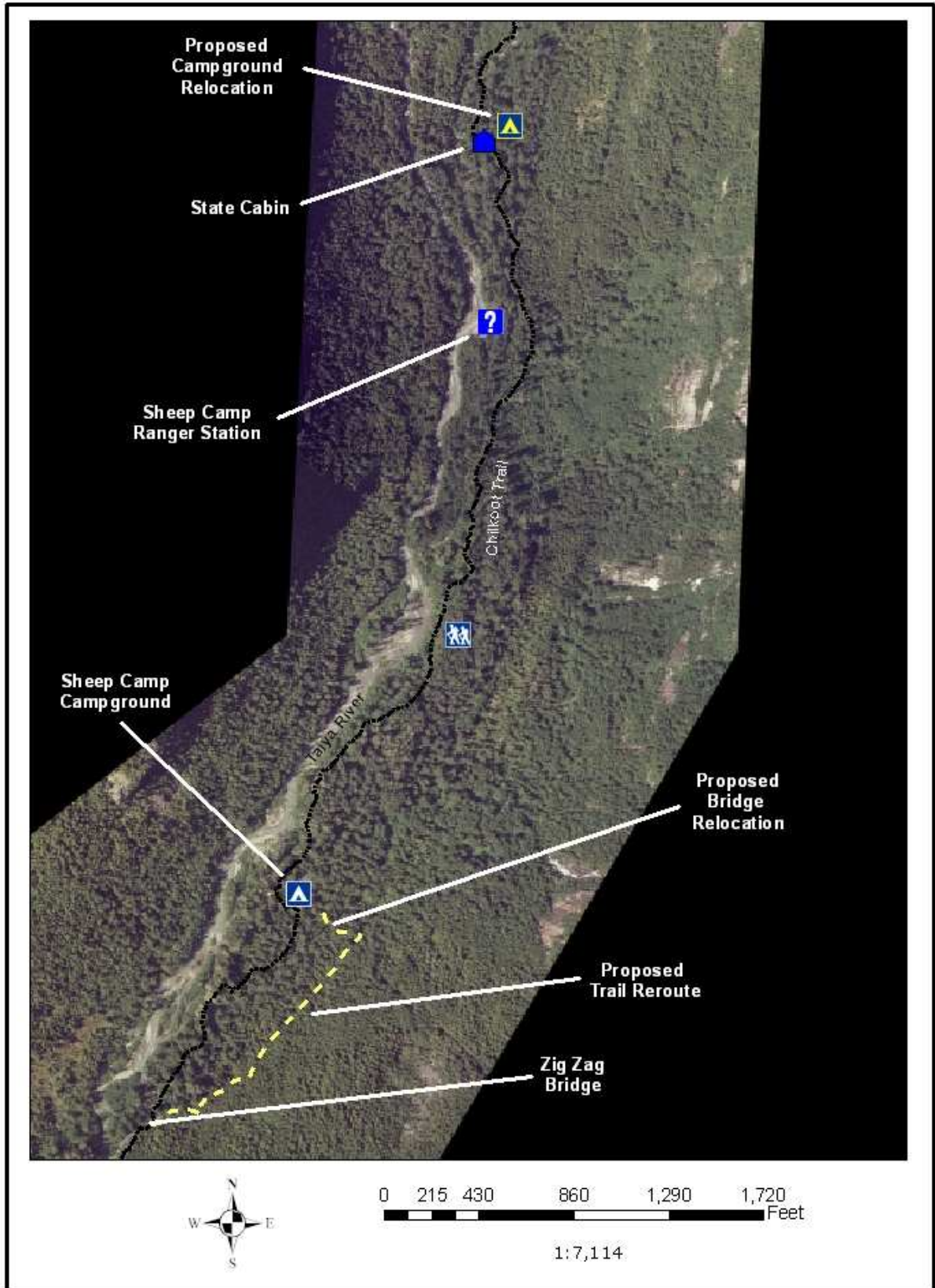
*Zig Zag Bridge during flooding*



*Sheep Camp State Cabin*

Under the Proposed Action Alternative, Sheep Camp Campground would be relocated to a new site, approximately 1 mile north, adjacent to the Sheep Camp State Cabin which was constructed as a hiker shelter in 1963. The existing campground would be permanently closed, all structures would be disassembled and transported to the new site if feasible or removed via helicopter, pit toilets would be filled in, and trails would be disguised with dead and down limbs and trees. Given the frequency of natural disturbance (i.e. flooding) and the likely occurrence of scattered archeological sites, active rehabilitation of the site is not proposed. Once human activity is eliminated from the area, natural revegetation is expected to occur relatively quickly given the disturbance-adapted vegetative community present.





*Figure 2. Overview map of Sheep Camp Area including Proposed Action Alternative campground, trail and bridge relocation sites.*

The existing campground is primitive in nature and contains 20 campsites (many containing wooden tent platforms), 2 warming shelters, 2 pit toilets, 2 composting toilets (i.e., “moldering privies”), small ranger storage shed, a food-hanging pole, bear-proof food storage, signs and picnic tables in designated food preparation areas adjacent to each warming shelter. The new campground would contain approximately the same number and types of campsites and facilities as the existing campground. Total overnight occupancy would also remain the same.



*Warming shelter and food preparation area*



*Campsite with tent platform*

The total area occupied by the existing Sheep Camp Campground is approximately 2.7 acres while the new campground would be approximately two acres in size, about 25% smaller than the existing campground. Of the total acreage, about one acre would be disturbed by crews using hand tools for the construction of facilities, campsites (including wooden tent platforms) and associated trails (Figure 3). The vegetation would be cleared with minimal disturbance to mineral soil except in the immediate location of tent platforms and outhouses. Each campsite would consist of a 15' x 15' area cleared of vegetation and one 10' x 10' elevated lumber tent platform. Facilities would be sited in natural openings whenever possible; however, it is anticipated that between 10 and 20 trees would be removed during construction of the trails and other facilities. Large live trees would be preserved and only small trees (less than 10 inches dbh) would be removed. Standing dead trees would be retained for wildlife unless they pose a safety hazard.

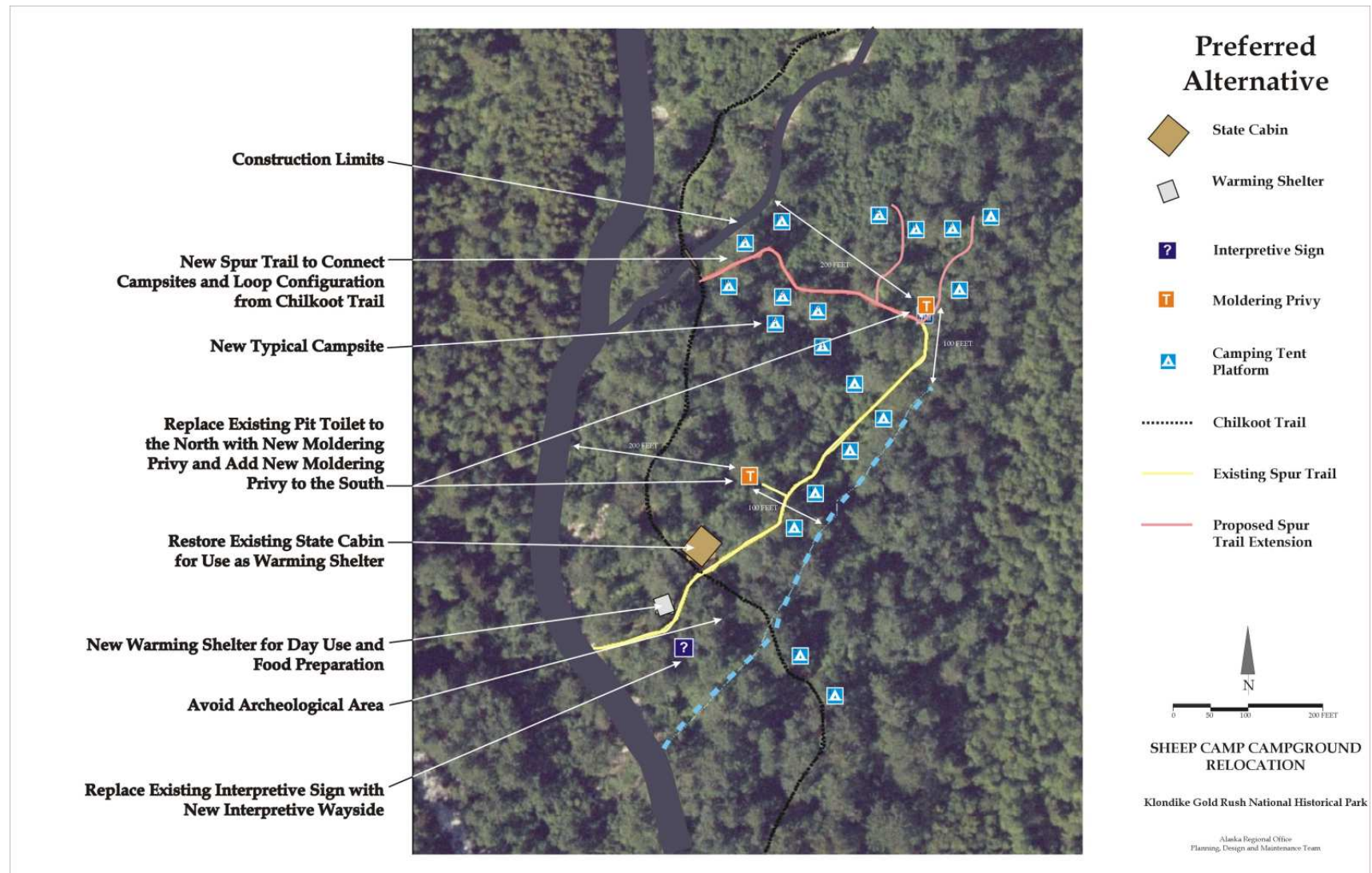
In addition, 2 moldering privy composting toilets would be constructed in the new campground. The park would relocate the two moldering privies at Sheep Camp to the new site. The existing composting waste at Sheep Camp would continue to be monitored until 2008 or 2009, at which time the final composted material would be flown out of the park for incineration in Skagway. The NPS would continue to consult with the Alaska Department of Environmental Conservation (ADEC), in regards to installation and maintenance of the moldering privies. Any new facilities would be located in accordance with ADEC regulations (at least 100 feet from any surface water; and at least 200 feet from a drinking water source).



*Moldering privy at Sheep Camp*



Figure 3. Site Plan for new campground (by NPS Landscape Architect, P. Schrooten).



The existing State Cabin (rough hewn log structure built in 1963) would be minimally repaired so that it could once again serve as a warming shelter for hikers, its original purpose. Repair would require replacement of the floor, decking and wood stove.

The proposed reroute of the Chilkoot Trail at Zig Zag Bridge would entail the construction of approximately 1,500 linear feet of new trail south of the existing campground. The trail would be rerouted onto a bench paralleling the existing trail but above the Taiya River floodplain to ensure that flooding and erosion would no longer be concerns along this length of trail. Approximately 546 feet of existing trails in the vicinity of the State Cabin would be utilized in the design of the new campground. In order to provide easy access to the Chilkoot Trail, approximately 235 feet of new trail would be constructed to form a loop with the existing trail system. Shorter trails would also be constructed to link individual campsites to the main trails. Trails would be routed around larger trees as needed, but small saplings up to three inches in diameter and dead timber would be removed. The NPS Trail Crew would remove vegetation along the trail corridor to a width of approximately 8 feet. The trail tread would be approximately 36 inches in width and brushed back an additional 2 – 3 feet on each side.

In addition to the trail relocation, Zig Zag Bridge, a footbridge located at the south end of the campground, would be replaced in-kind and relocated to a more stable site along the proposed trail reroute approximately 1,230 feet upstream of its present location. In its current location, Zig Zag Bridge spans a very dynamic channel of the Taiya River and has suffered frequent damage from flooding and scouring. The new bridge would instead span a clearwater tributary of the Taiya (Waterfall Creek). The discharge from this much smaller creek does not fluctuate substantially nor does the creek bed appear unstable as is the case with the Taiya River (Hahr 2005). Construction of a new bridge would require in-stream work and the placement of bridge abutments below the mean high water line necessitating a permit from the U.S. Army Corps of Engineers.

Bridge design would resemble that of the existing Zig Zag Bridge and would reflect historic character and known precedents (Figure 4). Two support cribs would be constructed on either side of the creek using six to eight inch diameter logs five foot long obtained from blow down and trail construction. The cribs would be 20 feet apart on either side of the creek, but would likely be on the edge of the high water level. The south side crib would be cut into the creek bank about two feet. The cribs would be 5 feet by 5 foot wide and 5 foot high with between 6 and 12 inches below grade. All material removed during excavation would be separated with the river rock used to fill the center of the cribs and the silt spread on the trail surface away from the creek. The stringers would be constructed in three 20 foot spans using 6 inch by 12 inch by 20 foot long treated lumber. The center section would run from crib to crib and the end sections would run from the cribs to 6 inch x 8 inch sills anchored to the ground using 24 inch spikes. The decking would be 3 inch by 12 inch boards 3 foot wide nailed to the stringers. Once the new trail section and bridge are complete, the old bridge would be dismantled and the parts stacked in an open area near Sheep Camp Campground for removal at a later date.



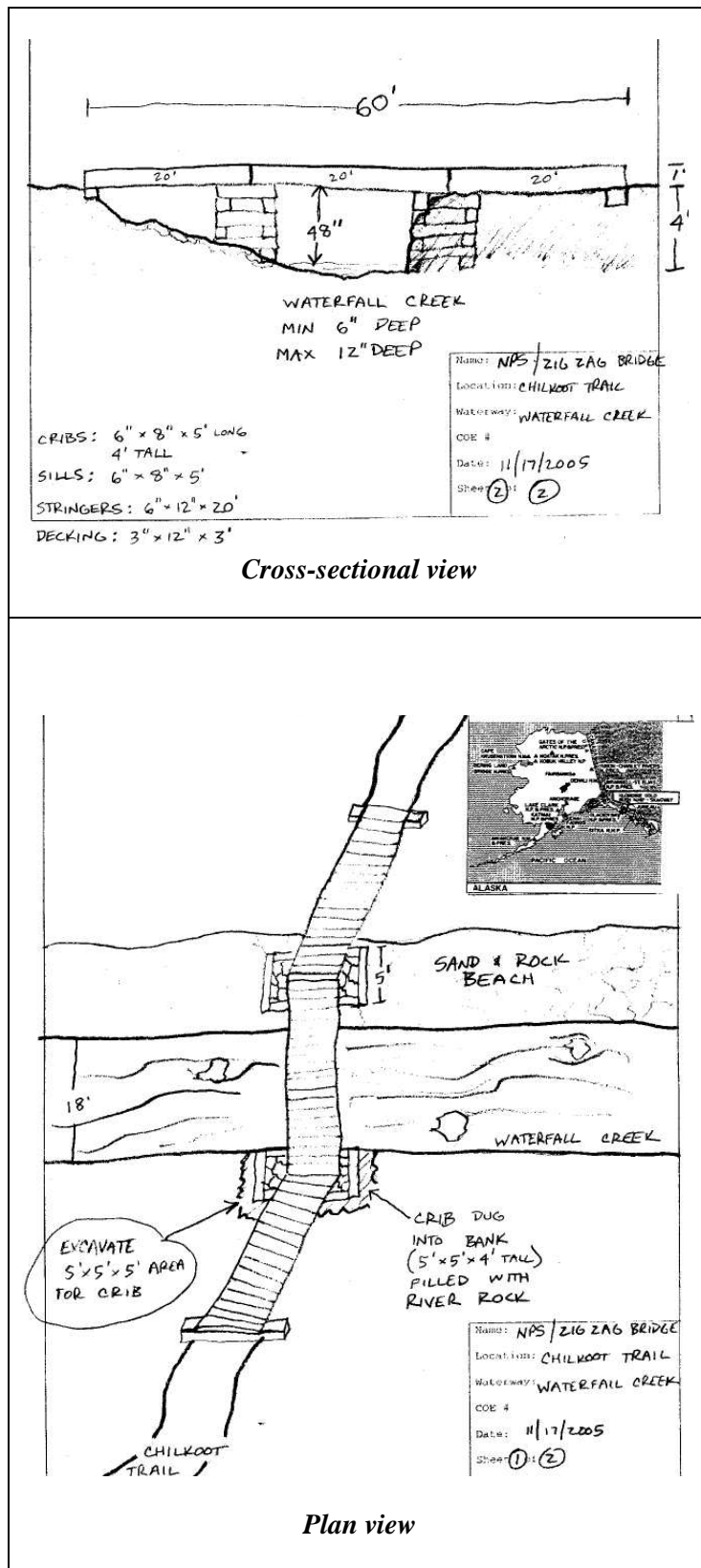


Figure 4. Zig Zag Bridge replacement design.

The construction of the trail and campsites should be completed by NPS personnel during the summer of 2006 but may continue into the summer of 2007 if work cannot be completed in one season. Construction supplies and materials would be sling-loaded to the site by helicopter. This would require 1-3 days of flights. These flights would occur in May prior to the start of the project. Crews are expected to start work on the new campground and trail relocation in June and continue working into September. The crew would travel to the site by foot and stay at the Sheep Camp Ranger Station during construction. Approximately 4-10 maintenance workers would be involved in this project. The exact location of individual campsites would be determined on the ground by the park's trail crew working in conjunction with NPS natural and cultural resource specialists. Sensitive areas identified by these specialists would be avoided. Only structures consistent with the primitive character of the area would be used. These structures would also reflect the cultural and historical character of architecture for the period of significance.

## **MITIGATING MEASURES**

Mitigation measures are specific actions that when implemented, minimize, avoid, or eliminate impacts on resources that would be affected by the actions of any alternative. The following mitigating measures would be applied to avoid or minimize potential impacts from construction activities and visitor use. Except where specifically noted, these measures would apply to all alternatives. Resources that are not listed would not have any applicable mitigation measures.

### **Soils**

Construction impacts such as soil loss and erosion would be minimized by salvaging and reusing the native soils. Removal of vegetation would be minimized when possible. Trail and campground construction would be planned and designed to minimize erosion and sedimentation. Alignment of trails would avoid disturbing fragile wetland soils or intercepting and diverting seeps and stream channels. These areas would be accessed and traversed by boardwalks or bridges to prevent compaction, churning, or rilling of soils. Trails would be constructed in a manner to avoid or minimize steep treadways, reducing the potential for soil erosion due to formation of water rills, gullies, and outboard trail tread failure. Hiking trails would also be designed to prevent development of social trails or other off trail uses.

### **Vegetation**

Work on trails and the campground would be planned so as to reduce impacts on vegetation. Trails would be designed and maintained to discourage social trail development. Efforts would be utilized to control exotic species in all alternatives. A dedicated program of invasive species control would be implemented to insure minimal negative impacts to native vegetation. The main components of the program would be to prevent spread of known exotic species populations and survey to detect new infestations, increase public awareness, manage existing exotic plant populations (e.g., techniques could include hand pulling plants), and monitor to determine population levels and effectiveness of control treatments.

### **Wildlife**

To the extent possible, trail construction activities would be timed to avoid sensitive periods, such as nesting season. The new campground and trail would be sited to avoid the following sensitive wildlife habitats:

- Wildlife travel corridors

- Foraging areas
- Denning sites
- Nesting or brood-rearing areas

Measures would be taken to reduce the potential for wildlife to get food from humans. Bear-proof food storage containers would be required in the campground. Visitors and park staff would be required to secure all food and garbage in bear-proof containers. Visitors would continue to be educated about the need to refrain from feeding wildlife through the use of signs attached to picnic tables and posted on kiosks in the campground. Park staff would be instructed in the use of pepper spray and encouraged to carry it at all times while on duty.

### **Safety**

Overall safety in the Sheep Camp area may be improved for all alternatives via education, including brochures, interpretive talks and displays. In addition to the bear safety brochures currently available, safe backcountry travel brochures stressing preparedness would be distributed.

### **Cultural Resources**

If unknown or concealed archeological or historical resources are encountered during any activity listed above, all necessary steps would be taken to protect the resources discovered and to immediately notify the Chief of Resources, Klondike Gold Rush National Historical Park, at the Park headquarters in Skagway, Alaska. Further work on the project would be suspended until the nature and extent of the resources can be determined. If artifacts are recovered, those artifacts and any other written or photographic documentation associated with this project would be curated at the Park according to standard NPS practices.

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

In accordance with Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents, including EAs. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA) of 1969, which is guided by the Council on Environmental Quality (CEQ). Generally, these criteria mean the environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (Federal Register, 1981).

The "Proposed Action Alternative" is the environmentally preferred alternative, because human health and safety, water quality, and floodplain values are enhanced under this alternative. Relocation of Sheep Camp Campground includes only the replacement of existing facilities. The overall size of the campground (i.e., the footprint) would be reduced by 25% and the maximum number of visitors the site could hold would be the same at the new site. The project would include as many aspects of sustainability as are feasible and practicable. Natural resource conservation, planning and design principles, construction methodologies, and maintenance/operational practices that support sustainability would be utilized.

## **ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION**

In addition to the management alternatives described above, several additional alternatives were initially formulated and considered in the early stages of this project. Each of these additional alternatives was subsequently determined to be infeasible, without significant benefit or inconsistent with fundamental natural and cultural resource management objectives of the NPS. These alternatives and the reasons they were dismissed from further consideration are described below.

### **Replace Camping Opportunities at Sheep Camp at Another Established Campground**

Pleasant Camp is a considerably smaller campground with 11 campsites about 1 mile south of Sheep Camp. NPS considered closing all or part of Sheep Camp Campground and adding up to 20 new campsites at Pleasant Camp to make up for the number of sites lost at Sheep Camp. This alternative was eliminated from further consideration as it would not satisfy the purpose and need identified by the NPS. This alternative would not improve visitor safety but would, in fact, increase the likelihood of injuries and accidents to hikers because of the need to hike further to get over Chilkoot Pass. By increasing the distance most backpackers would have to travel on the most physically-demanding leg of the 33-mile Chilkoot Trail (from Sheep Camp to Happy Camp via Chilkoot Pass) this alternative would not improve the safety of backcountry visitors in the park. Although the distance between Sheep Camp (12 miles from the trailhead) and the next campground, Happy Camp, is just 8 miles, it is an extremely difficult hike that takes the average hiker a full day to complete.

Because the hike between Sheep Camp and Happy Camp is so demanding, NPS recommends that hikers shorten the distance they must travel in one day by staying at Sheep Camp. Lengthening the distance and time required to travel to Happy Camp could pose a greater risk to hikers by increasing their exposure to periods of higher avalanche danger (afternoons), inclement weather and fatigue, possibly resulting in increased number of injuries and accidents. Currently, many hikers leaving from Sheep Camp find it difficult to reach Chilkoot Pass before avalanche danger increases in the afternoon. This situation would worsen if most hikers were forced to extend the distance traveled by staying at Pleasant Camp. Through public scoping, it was suggested that the NPS leave open the northern part of Sheep Camp Campground and close only the sites most affected by flooding. However, the entire campground is located within the active floodplain and is at risk from channel migration and erosion as well as frequent flooding (Rice 2004). Maintaining a portion of the campground in its present location would not enable the NPS to achieve the purpose of this proposed action: to improve visitor safety, alleviate sanitation concerns, eliminate degradation of floodplain values, and enhance backcountry operations.

### **Redirect the Taiya River to Protect the Campground in its Present Location**

The feasibility of constructing flood control structures at Sheep Camp Campground was evaluated by the NPS. Forcing the Taiya River back into its previous channel and away from the Sheep Camp camping area and Chilkoot Trail would require extensive in-water work. Heavy equipment would be needed to dredge out the previous channel and fill in new channels the river has created in the southern portion of the campground. Construction of a large rock dike would also be necessary to keep the river from returning to the new channels it has created. This alternative was dismissed as “environmentally infeasible” because it would have significant adverse environmental impacts on the Taiya River. Likewise, it would profoundly alter the historical scene and negatively affect the National Historic Landmark. It is not even known whether the heavy equipment necessary to accomplish this work could be transported to this remote location. Less labor intensive techniques such as bioengineering would not withstand the stresses along the river’s outside meanders and would need to be replaced and maintained



frequently. Consequently such an approach is not recommended (Rice 2004). Likewise, this approach is contrary to NPS Management Policies which direct park managers to minimize potentially hazardous conditions associated with flooding, and to relocate development outside the floodplain when practicable (NPS 2001).

#### **Relocate Sheep Camp Campground to Sites Other than the Proposed Action Alternative**

The entire Sheep Camp area (Figure 2) was thoroughly evaluated by an interdisciplinary team of NPS resource managers, rangers, planners, and other specialists. An area was considered potentially suitable if it was:

- above the active floodplain;
- not known to contain sensitive resources (archeological sites, wetlands, high groundwater, species of management concern, etc.);
- east of the Taiya River and no further south than Zig Zag Bridge; and
- not geologically unstable (i.e., prone to avalanches, rockfalls, debris flows).

The selection of alternative campground locations in the Sheep Camp vicinity was constrained by several factors including geohazards, topography, cultural resources, land ownership, floodplain, park operations, and natural resources. The Taiya River watershed from Pleasant Camp to the Chilkoot Pass is an extremely rugged, mountainous area characterized by narrow U-shaped valleys, remnant alpine glaciers, steep valley walls, and glacier-scoured alpine summits. Few areas outside of the relatively flat floodplain, are of the appropriate slope and size for a campground of the required capacity. The area west of the Taiya River was considered unsuitable because it is known to contain the most significant remains of historic Sheep Camp, making it a very important archeological site. Accessing the west side of the valley would also require the construction of at least one large bridge across the Taiya River, logistically and economically challenging given the remoteness of the site and the dynamic and largely unpredictable nature of the river.

Areas to the south of Zig Zag Bridge were eliminated from further consideration because this would put the campground even further from Chilkoot Pass thus not meeting the visitor safety objective. Areas containing evidence of recent and frequent avalanche activity were also considered unsuitable from a visitor safety and facility management perspective. This included the area immediately to the south of the Ranger Station where a very large snowslide occurred in 1997, as well as the entire area starting one-quarter mile north of the State Cabin and extending to Chilkoot Pass (Hahr 2005). Areas with known archeological sites were also considered unsuitable and excluded from further consideration (Higgs 2005).

**Table 2. Comparison of Alternative Actions**

	<b>No Action Alternative</b>	<b>Proposed Action Alternative</b>
<b>Management Emphasis</b>	This no-action alternative provides a baseline for evaluating the changes and impacts of the proposed action alternative. Under this alternative, current conditions and features would be managed as-is.	Management would emphasize improving the safety of visitors hiking the Chilkoot Trail, alleviate sanitation concerns, eliminate further degradation of floodplain values, and enhance backcountry operations by relocating Sheep Camp Campground, Zig Zag Bridge, and 1,500 linear feet of the Chilkoot Trail to a site out of the active floodplain. Frequent flooding in the existing campground has impacted visitor safety and access in this popular backcountry area of the park.
<b>Chilkoot Trail Relocation</b>	No trail relocation would occur. Hikers would continue to traverse a 1,500 linear foot section of trail that is currently affected by erosion and flooding from the Taiya River.	The proposed action alternative is to relocate approximately 1500 linear feet of the Chilkoot Trail 200-300 yards east of its current location placing it above the active floodplain. Relocation of the trail from the floodplain would eliminate ongoing impacts to visitor safety and access due to frequenting flooding and erosion along this trail segment.
<b>Sheep Camp Campground Relocation</b>	No relocation of the campground would occur. Natural and cultural resources would remain in their current conditions.	The proposed action alternative is to relocate Sheep Camp Campground to a site approximately one mile north of its present location. The exact location of the proposed facilities would be determined on the ground by the park's natural and cultural resource specialists working in conjunction with the trail crew. Sensitive areas identified by these specialists would be avoided.
<b>Relocation of Zig Zag Bridge</b>	No relocation of the bridge would occur. Eventually, the bridge will collapse as a result of flooding and scouring around abutments forcing hikers to ford a main channel of the Taiya River to continue along the Chilkoot Trail. Natural and cultural resources would remain in their current conditions.	The proposed action alternative would relocate Zig Zag Bridge which is presently threatened by movements of the Taiya River to a stable site approximately 1,230 feet upstream of its current location.

**Table 3. Comparison of Alternative Impacts**

	<b>No Action Alternative</b>	<b>Proposed Action Alternative</b>
<b>Natural Soundscape</b>	* Minor adverse long-term impacts.	* Minor adverse long-term and short-term impacts. * Minor beneficial long-term impacts.
<b>Vegetation</b>	* No impacts.	* Minor adverse long-term and short-term impacts. * Minor beneficial long-term impacts.
<b>Soils</b>	* Minor adverse short-term impacts.	* Minor adverse short-term impacts. * Minor beneficial long-term impacts.
<b>Wildlife</b>	* Minor adverse long-term impacts.	* Minor adverse long-term impacts. * Minor beneficial long-term impacts.
<b>Recreation/ Visitor Use</b>	* Major adverse long-term impacts.	* Major beneficial long-term impacts.
<b>Park Operations and Management</b>	* Major adverse long-term impacts.	* Major beneficial long-term impacts.
<b>National Historic Landmark</b>	* No impacts.	* Negligible adverse short-term and long-term impacts.
<b>Cultural Resources</b>	* No impacts.	* Minor adverse long-term impacts.
<b>Water Resources</b>	* Minor adverse long-term impacts.	* Minor beneficial long-term impacts.
<b>Safety</b>	* No impacts.	* No impacts.
<b>Floodplains</b>	* Minor adverse long-term impacts.	* Minor beneficial long-term impacts.

**AFFECTED ENVIRONMENT**

The Alaska units of Klondike Gold Rush National Historical Park are located at the northern limit of navigation along the Inside Passage of Southeast Alaska. A portion of the park lies within Skagway, which is about 80 air miles north of Juneau and 500 air miles east of Anchorage. The Chilkoot Trail unit of the park encompasses most of the Taiya River valley and is northwest of the City of Skagway. The Taiya River valley is approximately 17 miles long and one-half mile wide. It rises from sea level to approximately 3700 feet elevation.

Visitation to Klondike Gold Rush National Historical Park (the park) averages nearly a million people annually of which approximately 3,000 hike the 33-mile Chilkoot Trail. The initial 16.5 miles of the trail are in the United States and are managed by the NPS under a cooperative agreement with the State of Alaska. The remaining 16.5 miles are in Canada. Use of this trail has remained stable over the past decade. Sheep Camp (elevation 1000 feet) is a strategically important campground along the Chilkoot Trail because it is the final stop before the steepest and

most physically challenging section of the hike up the Golden Stairs and over Chilkoot Pass (elevation 3700 feet).

Immediately following the Klondike Gold Rush, the Chilkoot Trail was largely forgotten as a travel route to the Interior in favor of the White Pass & Yukon Route Railroad out of Skagway. In 1961, the state of Alaska sought to preserve the historic route by developing a recreational trail from Dyea to Chilkoot Pass. That effort was completed in 1963 with the construction of the modern Chilkoot Trail and two log public shelters (i.e., State Cabins) at historic Sheep Camp and Canyon City. In the 1960s and 1970s, there were no designated camping areas and backpackers were allowed to camp anywhere they desired. Eventually informal campgrounds developed near the two State Cabins. The campground at the Sheep Camp State Cabin was located just south of the cabin along the banks of the Taiya River. Increasing numbers of hikers, frequent flooding, and resource impacts resulted in the relocation of the campground to its current site in 1993.

Today within the U.S. portion there are four primitive camping areas with outhouses, bear poles and bear-proof food storage boxes for safe storing of food, a trail crew cabin near Canyon City, a ranger residence at Sheep Camp, several interpretive signs, six warming shelters located at the four campgrounds, and numerous foot bridges. The NPS Trail Crew works on the trail annually to keep it maintained.

### ***Natural Environment***

The Sheep Camp site is located within the Coastal Temperate Rainforest characterized by a moderate coastal (marine) climate. Forest types include coniferous forests of western hemlock, mountain hemlock, Sitka spruce, sub-alpine fir. Black cottonwood, paper birch, alder and willow are common at these sites. Understory species include highbush cranberry, goat's beard, devil's club, blueberry and currant. A wide variety of herbaceous plants exist and occur as ground vegetation, including ferns, twisted stalk, mosses and pyrolas.

Mountain goat and black bear are the most common larger wildlife species within the project area. Brown bear, moose and wolves are seen infrequently. The park has had few bear problems resulting in the temporary closure of Chilkoot Trail camping areas. Other animals that may be found in the area include mink, snowshoe hare, pine marten, fox, lynx, coyote, and numerous small mammals. The Taiya River valley provides resting and feeding habitat for migratory birds generally before early May and after mid-October. Mallard ducks are the most common, though green-winged teal, widgeon, common and Barrow's goldeneye, common merganser, and Canada geese may be found. Blue and spruce grouse, ptarmigan and a variety of raptors and songbirds are found within the project area. In a recent survey NPS personnel located two bald eagle nests in the lower Taiya River valley. During April and May dozens of eagles are often observed at the mouth of the Taiya River during the spring eulachon run. Similar numbers of eagles are observed in the Taiya River valley in fall during coho salmon spawning. Dolly Varden and Coho salmon are known to be present in the Taiya River from the mouth to approximately 1 mile north of Canyon City historic site, above which waterfalls prevent further upstream movement (6 miles downstream of the project area). Pink salmon spawn in the Taiya River up to this point as well. There are no known threatened or endangered animal or plant species or critical habitats in the project area.

The area is at the northern limit of the moist Maritime Climatic Zone which is noted for milder winters, warm summers and lack of permafrost. The climate is generally mild, with an overcast sky during two-thirds of the year. The precipitation at Skagway is approximately 26 inches per year, while further inland at higher elevations over 50 inches are received. The coldest month is January with a mean temperature of 21 degrees Fahrenheit. In Skagway July is the warmest



month, with a mean temperature of 58 degrees Fahrenheit. The average length of the frost-free season is 180 days, extending generally from about the first of May to the middle of October. Strong winds may occur in any season, but they are common in winter. The mountains surrounding the Chilkoot Trail are covered by deep snow in the winter, but most snow melts during June, July and August.

Perennial ice fields remain above the 3,000 foot level. The Taiya River valley is very active geologically. Avalanches, rock fall, debris slides and flooding are the most prevalent natural hazards in the upper Taiya River valley. Slopes in the upper valley mostly range from 40 to 50 percent except for the relatively flat valley bottom; however, both less steep and even steeper slopes occur in the canyons throughout the project area. Avalanches are most common above tree line on slopes in excess of 30 degrees. Although the valley bottom and lower foot slopes are forested and gently sloping, the proximity of steep slopes make even these areas potential runoff zones for avalanches, debris slides and rock fall (Hahr 2005). The park is also located in a seismically active area and earthquake events may affect rock and snow stability.

The Taiya River drainage basin encompasses an area of 179 square miles with an annual discharge of 1,074 cubic feet per second (cfs). The mean monthly discharge varies from 82 cfs in January to 3,485 cfs in July. During the months of June through September the mean monthly average is 2,635 cfs while during the other eight months it averages 293 cfs. The Taiya River is a very turbid river due to glacial melt. Frequent channel migration and channel braiding is likely attributable to high bedload sediment supply. Flow in Waterfall Creek is sustained by mountain slope runoff and shallow flood plain aquifers (Paustian et al. 1994). Klondike Gold Rush National Historical Park is in a designated Class II area under the Clean Air Act of 1977.

Specific information regarding the floodplain status is not available for the Taiya River and an extensive study would be necessary to delineate the 100 year floodplain. The existing campground is probably within the one to two year floodplain (Rice 2004). The area around the State Cabin is dominated by open black cottonwood and alder forest with some Sitka spruce in the understory. The two acre site proposed for relocation of the campground is gently sloping (8%) with a northeast aspect. This site is above the Taiya River floodplain and is considered fairly stable (Hahr 2005). The National Wetland Inventory has not been completed for the Taiya River valley. The vegetative species and soils within the project area indicate these sites would not likely be classified as wetlands. Soils within the Upper Taiya valley bottom are very deep and well-drained. Parent material is glacial outwash and alluvium. Lower floodplain surfaces are subject to flooding on a seasonal basis while higher terraces are either not flooded or flooded only during extreme high flows. Patches of hemlock forest indicate the most stable sites in the valley bottom (Paustian et al. 1994).

### ***Cultural Environment***

The American side of the Chilkoot Trail includes the major historical sites of Dyea, Finnegan's Point, Canyon City, Pleasant Camp, Sheep Camp, The Scales, and portions of the Summit. It also includes other smaller historical sites, portions of the historic trail(s), telephone lines, aerial tram lines, and numerous features and artifacts found along the trail(s). The entire trail lies within the boundaries of the Chilkoot Trail and Dyea National Historic Landmark and is listed on the National Register. The Chilkoot Trail and Dyea National Historic Landmark extends from the mouth of the Taiya River at Dyea north to the Canadian border at Chilkoot Pass, and encompasses the valley bottom and mountain foot slopes averaging one mile in width across the valley. Prior to the Klondike Gold Rush, the Chilkoot Trail was a well established Tlingit trade route into the interior. Dyea and Skagway were both sites of seasonally occupied Tlingit villages.

During the peak of the Klondike Gold Rush of 1897-1898, Sheep Camp was a bustling trailside community with a highly transient population of around 8,000. In its heyday historical research indicates that it boasted approximately 60 businesses (Norris and Taylor 1986). Business names, such as Big Tent Saloon, Cavanaugh Restaurant, Dyea-Klondike Transportation Co., Grand Pacific Hotel, Brackett's Dance Hall, Junction Store & Coffee House, Little Gem Bakery, Sheep Camp Drug Store and Hospital, hint at the variety of entrepreneurs and services offered. Photographs of Historic Sheep Camp depict the rapid growth and demise of the town site, and also the sprawl of tents for hundreds of acres along both sides of the Taiya River. During the peak period of occupation (February and March of 1898), photographs show tents set up even in the middle of the frozen Taiya River. Historic Sheep Camp was established at the upper limit of tree growth in the valley where wood was readily available for building and heating. Most of the stampedeers stayed in Sheep Camp while they moved their outfits up to the summit. Once they had everything up there, they went through customs and then moved on to Lindeman or Bennett in British Columbia. Although people were living at Stone House (just north of Sheep Camp), the Scales, and the Summit, living up there could be brutal during the winter and expensive because all the wood for cooking and warmth had to be shipped up by hand from Sheep Camp.

The main historical access to Sheep Camp (at mile 12) from Pleasant Camp (at mile 11) and the south occurred on the west side of the Taiya River where late 1970s NPS rangers retraced visible sections of the original trail during impromptu surveys conducted over several summers (Higgs 2005). Archeologists followed up on their initial work and documented the historical trail sections, several historical sites, in addition to extensive remains of historic Sheep Camp all located on the west side of the river (Carley 1981, Hayes 1994, Griffin 1998). Based on archeological surveys on the east side of the Taiya River (Carley 1981, Fenicle 1992, Gurcke 1992, Hayes 1993, 1994, Griffin 1996, 1998), the current Sheep Camp campground appears to be located near the southern outskirts of historic Sheep Camp but still within the camp.

Most of the Sheep Camp archeological site lies within the narrow valley floor of the Taiya River. Historic Sheep Camp can be characterized as a dissected town site on a long linear valley floor where short term transient camps occurred. The Taiya River, which drains north to south through the site, represents the major water source. Two creeks and many seasonal springs created from snowmelt and rains come down from the steep valley walls to feed the river. Significant over bank flooding of the Taiya has perpetuated river course changes over the years, leading to the erosional loss or overburden burial of some gold rush features associated with the former boom camp. Most of what is known about remains of historic Sheep Camp comes from surface manifestations of historic structures and artifacts identified within the core business area of the boom town. Historic photographs and archaeological surveys demonstrate that most of the transient camp lay south of the business core.

During the summer of 2005, NPS archeologists conducted intensive archeological surveys of the two potentially suitable sites identified by the NPS interdisciplinary team for the campground relocation as well as the proposed trail reroute corridor. Survey methods included visual reconnaissance and metal detector investigations covering 100 percent of the survey areas, and systematic subsurface sampling entailing transect interval and discretionary shovel testing (Higgs 2005). New and previously known features were identified and scattered artifacts were documented in all three areas surveyed. The mile long portion of the Chilkoot Trail that traverses historic Sheep Camp is in an extremely rich historic resource area. While the existing campground appears to lie at the southern end of the historic townsite, the State Cabin area has been identified as the northern boundary (Higgs 2005). While immediately adjacent to known archeological features, the area proposed for campground relocation contains no known historic resources (Higgs 2005).

An Assessment of Actions (Form XXX) has been submitted by the park for this proposal (Appendix B). Upon approval the action would comply with Section 106 of the National Historic Preservation Act. This approval must occur prior to any construction.

### ***Human Environment***

Tourism is a major source of income for the Skagway region. Cruise ships have a major effect upon facilities and services in Skagway. The daily arrival of up to 10,000 cruise ship passengers requires extensive services and facilities for transportation and recreation. Nearly a million visitors each year arrive in Skagway traveling by cruise ship, the Alaska Marine Highway (ferry), Klondike Highway, White Pass and Yukon Route Railroad, various airlines and other means. The 3000 visitors annually using the Chilkoot Trail bring most of their necessary supplies and equipment with them. Hence they have little effect on the local economy compared to the cruise ship passengers.

Sheep Camp is located 12 miles from the trailhead in Dyea. It is the most popular camping area and the northernmost camp on the U.S. side of the trail. Most hikers make this an overnight destination camp in preparation for the 8 mile trek to Happy Camp in Canada. During July, the peak of the hiking season, it was common to have more than 40 campers each night, with over 80 at peak times. Finnegan's Point (mile 4.8) is the least used camp (12 campers maximum), while Canyon City (mile 7.5) and Pleasant Camp (mile 10.5) frequently fill to capacity with 40 and 24 campers respectively.

Privately operated helicopter scenic flights initiated in 1985 operate from a heliport near the airport in Skagway. Flights are conducted to a glacier in the Taiya River valley, and hikers on the Chilkoot Trail are seldom out of hearing distance as helicopters pass overhead on their flight. Up to 2 dozen flights could occur on a busy day. Most flights occurring in the Taiya Valley affect hikers and campers from Canyon City south with few flights directly over Sheep Camp. Helicopters are used by the NPS 3-5 days during the summer for transporting materials (e.g., equipment, supplies, food) for trail crews, archeology field camps, natural resource field crews, and backcountry rangers. Most use occurs during late May/early June through early October. Helicopters are also used for medical evacuations of injured or sick hikers during the summer.

## **ENVIRONMENTAL CONSEQUENCES**

### **NO ACTION ALTERNATIVE**

#### Natural Soundscape:

The natural soundscape in the park would not be impacted in the short-term by noise associated with campground, trail and bridge relocation activities. In the immediate vicinity of Sheep Camp, the natural soundscape would benefit from this alternative as 20-40 fewer hikers could camp in this area. Long-term effects to the soundscape are expected to be minimal however, as the smaller campground would remain open and the same or increasing numbers of backpackers would continue to pass through the area on their way to Chilkoot Pass. NPS helicopters would continue to be used by NPS personnel in spring and fall (usually just one day per season) to transport supplies needed during the summer field season or irregularly for emergencies. However, the adverse effect of this noise on the natural soundscape would be minor, because the noise is intermittent, would occur only within Sheep Camp, and occurs only during summer months.

**Conclusions.** There would be continuing minor adverse long-term impacts on the natural soundscape. Because impacts would be minor, there would be no impairment of park resources and values associated with this topic.

Vegetation:

Since the NPS would not relocate the campground, trail and bridge, vegetation present in the project area would not be impacted by new construction.

**Conclusions.** There would be no impacts on vegetation; therefore, there would be no impairment of park resources and values associated with this topic.

Soils:

No new impact to soils would occur under this alternative as no ground disturbance is proposed. Existing impacts resulting from the bank erosion at the Zig Zag bridge and Sheep Camp Campground would continue to occur. An increase in erosion would result; however, these adverse impacts would be minor, localized, and short-term given the tendency of the bank to stabilize naturally over time.

**Conclusions.** There would be continuing minor adverse short-term impacts on soils. Because impacts would be minor, there would be no impairment of park resources and values associated with this topic.

Wildlife:

Wildlife occurring in the area such as marten, red squirrel, black bear, brown bear, wolverine, mountain goat, varied thrush, common raven, chestnut-backed chickadee, northern goshawk, weasel, sapsucker, and rodents would not be disturbed by the use of chainsaws and other hand tools to relocate the campground, trail and bridge because no construction would take place. Disturbance and displacement of wildlife currently occurs in the project area due to the noise associated with backpackers, park operations, and facility maintenance; therefore, wildlife in the area have either been displaced from the site or have habituated to current levels of human activity. Existing noise from campers and thru-hikers would continue to have the potential to displace wildlife from adjacent habitats. This adverse effect would be of minor intensity, however, because the noise potentially causing displacement would continue to occur predictably and mainly during the summer and would only affect wildlife within areas close to the trail and campground. Predictable noise levels have fewer impacts than disturbances that are unpredictable and occur sporadically (Joslin and Youmans 1999).

**Conclusions.** Minor adverse long-term impacts on wildlife would continue as a result of continued operation of the Chilkoot Trail and Sheep Camp campground. There would be no new impacts on wildlife. Because continuing impacts would be minor; there would be no impairment of park resources and values associated with this topic.

Recreation/Visitor Use:

Visitors to the park would continue to be impacted by flooding and erosion along the Chilkoot Trail and at the Sheep Camp Campground. Given the present direction of channel migration, Zig Zag Bridge and a section of the Chilkoot Trail north of the bridge would likely be washed out by the river. Therefore, in order to hike the Chilkoot Trail and access Sheep Camp, backpackers would have to ford several hundred feet of braided river channels with strong surface flows averaging 1-3 feet in depth. Crossing these sections of submerged trail during high flows would present backpackers with swiftly flowing water thigh to waist deep. Adults and especially children could be at risk of drowning while crossing these river channels at high or even moderate flows. Most backpackers would have to stay at Pleasant Camp (1.5 mile down valley from Sheep Camp) making their journey over Chilkoot Pass to Happy Camp longer and more difficult, possibly increasing risk of injury/accidents and negatively impacting the visitor experience.



Hikers could continue to use the trail and the few campsites that are available at Sheep Camp, but many would have a much more difficult hike over Chilkoot Pass due to the added distance they must travel and the need to ford a main channel of the Taiya River just south of Sheep Camp. In high water events, the park would probably be forced to close the trail to the public 2-3 times a summer season because the threat to human health and safety would be too great. If the trail were closed 2-3 times a summer, 100-150 visitors would not be able to experience the Chilkoot Trail each year. The long-term adverse effects on recreation/visitor use would be major and 50-100 visitors may choose not to hike the trail at all under these circumstances.

**Conclusions.** Major adverse long-term impacts to visitor use of the Chilkoot Trail would result if no action were taken at Sheep Camp campground. It is likely that many visitors would continue to hike the trail despite these hazardous conditions.

#### Park Operations and Management:

Park operations and management would likely be impacted under this alternative. In the likely event that Zig Zag Bridge, a portion of the Chilkoot Trail and Sheep Camp Campground are destroyed by flood waters, Park Rangers would have to ford a swiftly flowing channel of the Taiya River regularly in order to perform their routine duties. The park ranger stationed at Sheep Camp would not have the opportunity to contact as many hikers on their way up and over Chilkoot Pass since many fewer backpackers would be able to stay at Sheep Camp due to unacceptable flood danger and loss of campsites from erosion over time. The ability of the park ranger to educate and inform the public would be greatly impacted by this alternative. The trail would be open a majority of the summer season and an unknown number of visitors would continue to hike the trail despite these often unsafe conditions.

**Conclusions.** This alternative would result in adverse impacts to park operations/management. Expected adverse impacts would be major over the long term.

#### National Historic Landmark:

The Dyea and Chilkoot Trail National Historic Landmark would not be affected under this alternative as relocation of the campground, trail and bridge would not occur. Flooding of the trail and campground would not affect the National Historic Landmark as the natural flowing Taiya River is consistent with the values protected by the National Historic Landmark designation.

**Conclusions.** There would be no impacts on the National Historic Landmark; therefore, there would be no impairment of park resources and values.

#### Cultural Resources:

Cultural resources would be unaffected by the relocation of the campground, trail and bridge. Cultural resources would continue to be affected by the movement of the Taiya River across its floodplain. Flooding would continue to remove artifacts and alter existing historical features associated with the original Sheep Camp.

**Conclusions.** There would be no new impacts on cultural resources; therefore, there would be no impairment of park resources and values.

#### Water Resources:

Water resources would be impacted under this alternative because the existing outhouses would continue to be located in a flood-hazard zone. No action regarding human waste disposal at Sheep Camp would result in the likelihood of continued contamination to surface and subsurface waters in the area. Although the "No Action Alternative" would involve no ground or vegetation disturbance, it is undesirable because large numbers of visitors would hike through the river on a daily basis, possibly causing impacts to water quality. By regularly walking through the river, hikers would increase bank erosion resulting in increased sedimentation and turbidity. This

situation could negatively affect water quality both surface and subsurface if not addressed. This long-term adverse effect would be of minor intensity, however, given the lower numbers of campers expected at Sheep Camp and the reduced capacity of the site. Replacement of Zig Zag Bridge would not occur under this alternative due to the likelihood that this site would soon be eroded away by the Taiya River. This long-term adverse effect on water resources would be minor and short-term, however, given that stream bank erosion is a natural occurrence in this active floodplain and generally turbid river.

**Conclusions.** Minor adverse long-term impacts on water resources would likely occur under this alternative if nothing is done to address the human waste disposal issue and the stream bank erosion issue at Sheep Camp. Because impacts would be minor; there would be no impairment of park resources and values associated with this topic.

#### Safety:

Although the entire upper Taiya River valley is a geologically active area, geohazards such as rockfalls, debris flows, and avalanches are uncommon in the immediate vicinity of Sheep Camp Campground. The current campground location has not been affected by geologic processes since its construction in 1993; however a similar area immediately up valley was severely impacted by an avalanche in 1997. The current campground location appears to have relatively low risk of geohazards.

**Conclusions.** Continuing the existing conditions would not result in increased impacts from safety hazards.

#### Floodplains:

Floodplains would continue to be impacted under this alternative as Sheep Camp campground would continue to operate in the floodplain. Continued operation of the campground would occur under this alternative; however, this type of development represents a minimal amount of intrusion on floodplains and floodplain processes in the Taiya River valley. As described in the Affected Environment section, the Taiya River valley is a U-shaped glacial valley with a very narrow floodplain and steeply ascending foot slopes. Suitable sites for trails and campgrounds are difficult to find above the river's floodplain. The NPS has kept development in these areas to a minimum and as a result, ongoing impacts to floodplains and floodplain processes along the Chilkoot Trail are minor, adverse, long-term, and localized. The park prepared a Floodplain Statement of Findings (NPS 2003) for operation of the campground in its current location which describes measures it would take to minimize threats to visitor safety from flooding.

**Conclusions.** Minor adverse long-term impacts on floodplains would continue to occur under this alternative but these impacts are localized and do not represent a major commitment of resources on the part of the NPS. Because impacts would be minor; there would be no impairment of park resources and values associated with this topic.

#### Cumulative Impacts Analysis:

Cumulative impacts are defined as the *incremental impacts* on the environment resulting from adding the proposed action to other past, present, and reasonably foreseeable future actions (also referred to as regional actions), including those taken by both federal and nonfederal agencies, as well as actions undertaken by individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time (CEQ Sec 1508.7).

Past, present, and reasonably foreseeable future actions impacting the issues addressed above within the Taiya River Watershed, include the following:

- Once a thriving stampeder camp of approximately 8,000 inhabitants for a brief period during the height of the Klondike Gold Rush, Sheep Camp now serves as a remote

backcountry camping area accommodating up to 80 hikers a night at the peak summer visitor season. Because of the Canadian permit system capping the number of hikers allowed over Chilkoot Pass each day at 50 persons, the maximum number of hikers at the Sheep Camp campground each day is unlikely to increase. Winter use of the trail is virtually non-existent, but use during the now slow shoulder season could increase as the Chilkoot Trail grows in popularity.

- Human activity has been ongoing in the Taiya River valley for several thousand years. The Tlingit Indians controlled Chilkoot Pass and used it as an important trade route between the Coast and the Interior for an unknown number of years before the arrival of the first European Americans. In 1880 the Tlingits opened up the trail to the first gold prospectors. Since that time, the number of humans in the valley steadily rose peaking during the Klondike Gold Rush. The upper valley was essentially abandoned from 1900 to 1961 when the State of Alaska began construction of the modern Chilkoot Trail for recreational use. Low numbers of hikers and hunters used the trail between those years but use was limited and irregular. Much of the watershed was extensively logged during the peak years of the Klondike Gold Rush (1897-1899). Periodic glacial outburst floods and channel migrations have acted to keep the valley bottom in early successional stages of exposed gravel bars, shrubfields, and spruce/cottonwood riparian forests. Areas that have escaped frequent disturbance are characterized by mature stands of western hemlock.
- Scenic air tours regularly occur over the Taiya River valley in summer. The Bureau of Land Management and the National Park Service regulates where air tour operators may land but overflights are unrestricted. Currently the number of operators and the amount of traffic appears stable. The NPS uses helicopters for administrative purposes primarily in spring and fall (usually just one day per season) to transport supplies needed during the summer field season. Likewise, helicopter landings in the park occur irregularly throughout the visitor use season for emergency evacuations and rescues.
- The Chilkoot Trail Unit of the park is managed to protect the cultural/natural resources and provide a primitive backcountry experience to park visitors. The park plans to maintain the current level of backcountry visitor opportunities into the future. The upper Taiya watershed (from the West Creek Tributary to the Canadian border) is to be managed for recreational uses at current levels. Downstream portions of the valley (the lower 3 miles of the river) have mixed landownership (NPS, State of AK, City of Skagway, private) and could experience considerable development in the future. The NPS continues to work with these various landowners to ensure that park resources and values are protected.

Although human influence has been extensive in the Sheep Camp area beginning in the gold rush era, the area is now relatively undeveloped and modern facilities are quite primitive. Existing impacts to natural and cultural resources in the area include loss of upland forest and riparian habitats to trail and campground development; altered floodplain processes due to development within the 100 year floodplain; disturbance to wildlife from people and aircraft; noise and light disturbance from facilities; introduction of non-native, invasive plant species; and destruction/theft of cultural resources. Regardless of the above past, present, and reasonably foreseeable future actions, there would be no cumulative (incremental) impacts on the issues described above, under this alternative, as no new actions would be taken.

**Conclusions.** No actions would occur that would result in changes to natural soundscape, vegetation, soils, wildlife, recreation/visitor use, park operations and management, National Historic Landmark, cultural resources, water resources, safety, and floodplains. There would be

no incremental (cumulative) impacts associated with the No Action Alternative to the issue topics identified. All impacts would be associated with past, present, and future actions.

## **PROPOSED ACTION ALTERNATIVE**

### Natural Soundscape:

The natural soundscape in the park would be impacted to a minor degree in the short-term (up to 4 months each summer for at most two years) by noise associated with the transport of materials and the construction of a new campground, bridge, and 1,500 feet of trail; however, the noise would occur early in the season when few visitors are hiking the trail. The 2-5 helicopter flights needed to transport materials to the site would not represent a measurable difference in noise levels over existing operation levels. Relocating the campground to the proposed location would result in minor long-term adverse impacts at the new location, but minor, long-term beneficial impacts at the current location which would be closed to camping and allowed to recover to a more natural state. These adverse impacts would occur intermittently and mainly during the peak visitor use season (between June and September). However, the adverse effect of this noise on the natural soundscape would be minor, because the noise is intermittent, within Sheep Camp, and occurs only during summer months. Since this alternative would not result in an increase in visitor numbers no new impacts would occur.

**Conclusions.** Overall, the proposed action would result in minor, short-term and long-term adverse impacts to the natural soundscape at the new bridge, trail, and campground locations, but these impacts would occur intermittently and mainly during the peak visitor use season (between June and September). The proposed action would also result in minor, beneficial, site-specific, long-term impacts to natural soundscape at the existing developed sites due to closure of these areas and natural recovery to pre-disturbance conditions. The overall effect would be no new impacts to natural soundscape as a result of this project. Past, present and future impacts to the natural soundscape in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to the natural soundscape. The nature of these impacts would not result in the impairment of park resources and values associated with this topic.

### Vegetation:

This alternative requires the disturbance of approximately two acres of native vegetation for all of the proposed activities. Trail alignment, campsites, and outhouses would be sited in order to avoid the removal of trees greater than 10 inches in diameter. Between 10 and 20 trees could be removed along with understory vegetation comprised of shrubs and forbs. Concentrating campers at designated sites would result in the loss of a minimal amount of vegetation in the immediate vicinity of the facilities and the preservation of large areas of native vegetation in a predominantly natural state. Ground disturbance associated with the construction could increase the potential for weed spread and establishment within the project area. A 2000 exotic plant survey of the Chilkoot Trail Unit (Furbish and Jorgensen 2001) documented several species of exotic plants in the Sheep Camp area. However, only one species was targeted for management control – Common plantain (*Plantago major*). Follow up surveys annually since 2001 could not relocate this species. Since the park periodically monitors developed areas for exotic and invasive plants and implements control actions if necessary, weed spread would only be a minor concern for this project. The species present at the site are not highly invasive and continued monitoring and control work would prevent the spread of exotic species in the area. Likewise, the spruce/cottonwood/alder forest on both sites is an early successional disturbance-adapted

community. Areas dominated by late-successional plant communities would be avoided and thus would not be altered by this project. The proposed actions would result in a developed area footprint at the new campground that is 25% smaller than the footprint at the existing campground. The existing campground is approximately 2.7 acres in size whereas the proposed campground relocation would occupy a smaller area of 2.0 acres. The site proposed for relocation of the campground is not pristine. It is an existing developed area containing limited visitor facilities including the State Cabin, an outhouse, and about 546 feet of trails. Since the same number and types of facilities are proposed at the new campground as comprise the existing campground, the total vegetated area impacted by development in the Sheep Camp area would remain the same once the existing campground is dismantled and closed to camping. Altogether, because the affected area is relatively small and impacts would be clustered rather than dispersed, and because thousands of acres of high quality, native vegetation would remain intact, adverse impacts on vegetation would be minor both in the short-term and long-term.

**Conclusions.** Overall, the proposed action would result in minor, adverse, site-specific, short-term and long-term impacts to vegetation at the new bridge, campground and trail locations, as well as minor, beneficial, site-specific, long-term impacts to vegetation at the existing developed sites due to closure of these areas and natural recovery to pre-disturbance conditions. Past, present and future impacts to the vegetation in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to vegetation. The nature of these impacts would not result in the impairment of park resources and values associated with this topic.

#### Soils:

Although ground disturbance would occur under this alternative (approximately 2 acres), adverse impacts to soils in the project area would be minor over both the short-term and long-term for several reasons. Significant erosion is unlikely given the gently sloping terrain at all sites proposed for new development. Likewise, soils in this part of the Taiya River valley are poorly developed and are characterized by high sand and rock content (Paustian et al. 1994). This alternative would not result in an increase in disturbed lands (i.e., compacted or unstable soils) over existing levels in the Sheep Camp area because currently disturbed areas would be allowed to recover. Under this alternative, the developed area footprint would decrease about 25% from the current size; so overall, no new impacts would occur. The site proposed for relocation of the campground is not pristine. It is an existing developed area containing limited visitor facilities including the State Cabin, an outhouse, and about 546 feet of trails. The extraction of fill material from borrow pits for the new bridge and trail would result in minor, adverse, localized effects due to the limited area affected.

**Conclusions.** Overall, the short-term impacts to soils from this alternative would be minor, adverse, and site-specific at the new bridge, campground and trail locations given existing conditions in the project area. The proposed action would also result in minor, beneficial, site-specific, long-term impacts to soils at the existing developed sites due to closure of these areas and natural recovery to pre-disturbance conditions. The overall effect would be no new impacts to soils as a result of this project. Past, present and future impacts to soils in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to soils. The nature of these impacts would not result in the impairment of park resources and values associated with this topic.

#### Wildlife:

Wildlife occurring in the area such as marten, red squirrel, black bear, brown bear, wolverine, mountain goat, varied thrush, common raven, chestnut-backed chickadee, northern goshawk, weasel, sapsucker, and rodents would be disturbed by the use of chainsaws and other hand tools to replace lost facilities and the use of helicopters to transport materials to the project site. Wildlife could be temporarily displaced from the project area while construction is occurring (3 months each summer over two years). Normal habitat use and movement patterns would likely continue at times of day when construction activities are not occurring (evenings, night, early morning). Nesting birds such as eagles and goshawks are especially sensitive to disturbance by helicopters. Efforts would be made to avoid known bald eagle nests by having helicopters maintain a minimum 2000 feet distance from these sites. Since helicopter use would be of such short duration, impacts to breeding birds would be minor adverse and short-term. Floodplain habitats (i.e. deciduous riparian woodlands) currently occupied by the existing campground and trail are of higher value to wildlife than the less-productive upland sites proposed for relocation of these facilities. Floodplains and valley bottoms are important travel corridors for many species of wildlife including bears; therefore removal of development from the floodplain would be beneficial to wildlife movement and migration in the Sheep Camp area. Overall, removal of facilities from the floodplain and relocation to upland sites would result in beneficial impacts to wildlife in the Sheep Camp area. Disturbance and displacement of wildlife currently occurs in the project area due to the noise associated with backpackers, park operations, and facility maintenance; therefore, wildlife in the area have either been displaced from the site or have habituated to current levels of human activity. The site proposed for relocation of the campground is not pristine. It is an existing developed area containing limited visitor facilities including the State Cabin, an outhouse, and about 546 feet of trails. Existing noise from campers and thru-hikers would continue to have the potential to displace wildlife from adjacent habitats. Relocation of these facilities would result in minor impacts to wildlife comparable to existing levels. This adverse effect would be of minor intensity, however, because the noise potentially causing displacement would continue to occur predictably and mainly during the summer and would only affect wildlife within areas near the trail and campground.

**Conclusions.** The proposed action would also result in minor, beneficial, site-specific, long-term impacts to wildlife at the existing developed sites due to closure of these areas and natural recovery to pre-disturbance conditions. Minor adverse long-term impacts on wildlife would continue as a result of actions proposed under this alternative; however there would be no new impacts on wildlife overall. Past, present and future impacts to wildlife in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to wildlife. Because continuing impacts would be minor; there would be no impairment of park resources and values associated with this topic.

#### Recreation/Visitor Use:

Visitors to the park would be temporarily impacted by the noise and inconvenience associated with construction of replacement facilities; however, these effects would be negligible and short-term and would only occur while visitors are hiking past the new campground, trail, and bridge locations. Work within the park would not result in trail or campground closures, but noise and the visual perturbation associated with construction could detract from the visitor's experience of the park briefly as they travel through the relocation sites. Long-term major benefits to recreation/visitor use would result from the relocation of facilities from flood-prone areas as more hikers would not have to travel further to get to Happy Camp as they do now. By relocating the Chilkoot Trail, Zig Zag Bridge, and Sheep Camp campground, this alternative would have a major long-term beneficial effect on park visitors.



**Conclusions.** Over the long-term, the proposed action would result in major, beneficial, regional, long-term impacts to recreation/visitor use. Past, present and future impacts to recreation/visitor use in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued major rating for overall cumulative impacts to recreation/visitor use.

Park Operations and Management:

Park operations and management would benefit from the relocation of the campground, trail and bridge at Sheep Camp. These relocations would improve the visitor experience on the Chilkoot Trail and provide for an increased level of visitor safety. Relocating trails and other facilities further away from the dynamic Taiya River would also improve the efficiency of NPS staff in maintaining NPS facilities and providing for visitor safety in this remote backcountry area. By minimizing potential injuries and accidents related to daily stream crossings and exhaustion, the trail rangers could spend more time interacting with the general public and performing their other job responsibilities in an efficient manner. Replacement of Zig Zag bridge in a more stable location would eliminate the need for backpackers and park staff to ford the swift and cold Taiya River thus increasing risk of accident/injury. Locating the new campground one mile to the north of the existing campground would place it considerably closer to the Sheep Camp Ranger Station, Chilkoot Pass and the next campground along the Chilkoot Trail, Happy Camp. Thus, the proposed action would shorten the travel time to Happy Camp thereby reducing exposure to avalanches and other potential hazards en route. This alternative would replace flood and erosion threatened facilities at Sheep Camp campground without measurably increasing the overall presence of overnight visitors in this part of the Taiya River valley. The proposed actions would result in a developed area footprint at the new campground that is 25% smaller than the footprint at the existing campground. The visitor capacity would be unchanged and the total number of campsites, outhouses, and shelters would be approximately the same. Parks Canada limits the number of hikers over Chilkoot Pass to 50 persons per day. The capacity of Sheep Camp campground is sufficient to meet the current demand which is unlikely to change in the future given the limits imposed by Parks Canada. The total length of trails in the area would also be similar.

**Conclusions.** Overall, the proposed action would result in major, beneficial, regional, long-term impacts to the park operations and management. Past, present and future impacts to park operations and management in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued major rating for overall cumulative impacts to park operations and management.

National Historic Landmark:

The Dyea and Chilkoot Trail National Historic Landmark would be affected by the relocation of the bridge, trail and campground at Sheep Camp. Impacts are examined in detail in the attached XXX form in compliance with Section 106 of the National Historic Preservation Act of 1966 (Appendix B). Short-term effects would occur during construction. These activities would only be seen when in the immediate vicinity of the campground. This alternative would result in no net gain of campsites along the trail and in the camping area. The site proposed for relocation of the campground is not pristine. It is an existing developed area containing limited visitor facilities including the State Cabin, an outhouse, and about 546 feet of trails. These existing facilities would be incorporated into the new campground thus reducing the amount of new construction overall. The long-term impact (i.e., the visual impact of the new facilities) would be minimized by the primitive nature of these facilities and the fact that they would be well

concealed within the forest. The facilities to be constructed would be compatible with the historic period for which the National Historic Landmark was established.

**Conclusions.** Given the primitive nature of the facilities to be relocated and that there would not be an increase in development, impacts to the Dyea and Chilkoot Trail National Historic Landmark would be negligible, negative, short and long-term, and localized. Past, present and future impacts to the Dyea and Chilkoot Trail National Historic Landmark in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued negligible rating for overall cumulative impacts to the Dyea and Chilkoot Trail National Historic Landmark. The nature of these impacts would not result in the impairment of park resources and values associated with this topic.

#### Cultural Resources:

Impacts to cultural resources are examined in detail in the attached XXX form in compliance with Section 106 of the National Historic Preservation Act of 1966 (Appendix B). The State of Alaska Historic Preservation Officer (SHPO) has concurred that the Proposed Action alternative would not adversely affect cultural resources (Appendix C). NPS archeologists have intensively surveyed the sites proposed for relocation of the bridge, campground and trail, and determined that these areas are clear of archeological features or other gold rush era remains (Higgs 2005). While the proposed area is adjacent to an area where subsurface archeological deposits were located, these deposits were considered to be deep enough that indirect impacts to them would be negligible. The areas proposed for relocation of these facilities under this alternative have all been thoroughly evaluated and recommended by NPS archeologists (Higgs 2005). This alternative would not result in an increase in disturbed lands over existing levels in the Sheep Camp area because currently disturbed areas would be allowed to recover. Under this alternative, the developed area footprint would decrease about 25% from the current size; so overall, no new impacts would occur. The site proposed for relocation of the campground is not pristine. It is an existing developed area containing limited visitor facilities including the State Cabin, an outhouse, and about 546 feet of trails. These existing facilities would be incorporated into the new campground thus reducing the amount of new ground disturbance overall.

Archeologists would work closely with the NPS Trail Crew to site replacement facilities in suitable areas. Archeological surveys delineated the northern boundary of Historic Sheep Camp (Higgs 2005). The southern boundary of the proposed campground relocation site is immediately north of known archaeological features associated with Historic Sheep Camp. Under this alternative, no activities are proposed that would result in disturbance to known archeological sites. The primary cultural resource concerns are the loss of archaeological data and cultural resources through unintentional or planned collecting activities, and vandalism in the entire Sheep Camp area (Higgs 2005). This potential adverse impact would be mitigated through active patrolling of the area by NPS backcountry rangers, and educating the public about the sensitivity of the cultural resources at Sheep Camp and along the trail.

**Conclusions.** Given that no increase in visitor use would result and direct impacts to cultural resources would be avoided under this alternative, impact to cultural resources would be minor, negative, long-term, and localized. Past, present and future impacts to cultural resources in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to cultural resources. The nature of these impacts would not result in the impairment of park resources and values associated with this topic.

#### Water Resources:

Water resources could be impacted under this alternative by in-stream construction associated with bridge relocation in and near the Taiya River and its tributaries. This situation would negatively affect surface water quality, but this short-term adverse effect would be of minor intensity given the small area impacted and the high sediment load of the Taiya River especially in spring when construction would occur. Relocating the trail and campground to upland sites would result in an overall reduction of ongoing impacts to water resources associated with operation of these facilities in their current floodplain location. The clearing of vegetation for trails and campsites would expose soil and result in increased erosion; however, sites proposed for development under this alternative are separated sufficiently from surface waters so as to prevent measurable impacts to water resources. Since these sites would be located away from the river, increased sedimentation is unlikely to occur. Construction of a new bridge would result in some sedimentation and increased turbidity within Waterfall Creek. However, this short-term impact would be minor, adverse and localized because it would occur in early summer when turbidity due to high runoff is higher.

**Conclusions.** Minor adverse short-term impacts on water resources would occur under this alternative, but long-term effects would be minor, localized and beneficial due to the relocation of the campground and trail from the active floodplain. Past, present and future impacts to water resources in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to water resources. Because impacts would be minor; there would be no impairment of park resources and values associated with this topic.

#### Safety:

Although the entire upper Taiya River valley is a geologically active area, the sites proposed for the campground, trail and bridge relocations appear to be relatively stable; however, natural geologic hazards such as rockfalls, debris flows, and avalanches occur throughout the Sheep Camp area and may occur without warning at any time. Obvious active avalanche paths exist immediately up and down valley of the proposed campground site adjacent to the State Cabin, but no major geomorphic events (i.e., avalanches, rock falls, flooding or mass wasting) have impacted the site in at least 60 years as evidenced by the mature trees that dominate the surrounding area and the condition of the cabin itself. Although the proposed campground relocation site appears to have relatively low risk of geohazards, this does not rule out the possibility of such events occurring in the future (Hahr 2005). Avalanches occur mainly in winter and early spring, times of the year when recreational use of the Chilkoot Trail is negligible. The proposed development would be kept to a minimum and does not represent a major commitment of resources on the part of the NPS. The proposed campground, bridge and trail relocations sites were recommended by NPS specialists (Geologist and Geomorphologist) as suitable locations for these facilities (Hahr 2005). Both the existing campground location and the proposed relocation site lie in a geologically active part of the Taiya River valley; therefore impacts to visitors from avalanches and other geohazards would not be expected to increase from current levels.

**Conclusions.** The proposed alternative would not result in increased impacts from geohazards to visitors, staff and NPS facilities in the Sheep Camp area. Past, present and future impacts to safety in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible cumulative impacts in the Sheep Camp area would have no impacts to safety.

#### Floodplains:

The proposed relocation sites of the campground and trail have been determined to be above the active floodplain of the Taiya River by a qualified NPS Geomorphologist and Geologist (Hahr 2005). The current location of Sheep Camp Campground is within the 100-year floodplain, and a Floodplain Statement of Findings was prepared for this site in 2003 (NPS 2003). The proposed relocation of Sheep Camp Campground would remove overnight accommodations and associated development from the active floodplain, and relocate these visitor facilities to a location outside of the flood hazard zone; therefore, a Floodplain Statement of Findings would not be necessary if the proposed action alternative is implemented (pursuant to Director's Order 77-2 Floodplain Management Procedural Manual). A qualified NPS Geomorphologist and Geologist evaluated potential sites for relocating Sheep Camp Campground and concluded that the proposed site is not within a flood-hazard zone (Hahr 2005). Relocation of the campground could have beneficial impacts on floodplain values. The NPS has kept development at the existing campground to a minimum; therefore, relocation of the campground and trail to sites above the active floodplain would have minor, beneficial, long-term, and localized impacts to floodplains and floodplain processes.

**Conclusions.** Minor beneficial localized long-term impacts on floodplains would occur under this alternative due to removal of the campground and trail from the active floodplain. Past, present and future impacts to floodplains in the Sheep Camp area are discussed in the No Action Alternative. Cumulatively, these other past, present, and reasonably foreseeable future actions would have negligible, if any, impacts. The additional contribution of negligible impacts from this alternative results in a continued minor rating for overall cumulative impacts to floodplains. Because impacts would be minor; there would be no impairment of park resources and values associated with this topic.

#### Cumulative Impacts Analysis:

As noted in the "No Action Alternative," past, present, and reasonably foreseeable future actions have impacted the above mentioned issues, in many ways. These actions and related impacts would not differ under this "Proposed Action Alternative." Additional adverse impacts resulting from implementing the "Proposed Action Alternative" would be minor for all impact topics (see above analysis). Therefore, the cumulative impacts of implementing the "Proposed Action Alternative" in addition to other past, present, and reasonably foreseeable future actions would be minor at most for all impact topics. Three impact topics considered (i.e., Park Operations, Floodplains and Management, Recreation/Visitor Use) would be beneficially impacted by the proposed alternative (see above analysis). These long-term, beneficial impacts would be unaffected by the cumulative impacts discussed above.

**Conclusions.** The cumulative (incremental) impacts of implementing the "Proposed Action Alternative" in addition to other past, present, and reasonably foreseeable future actions would be minor at most for all impact topics.

## **CONSULTATION AND COORDINATION**

The following agencies, organizations, and individuals were consulted in the preparation of this document.

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## **APPENDIX A**

### **ANILCA SECTION 810 (a) SUMMARY EVALUATION AND FINDINGS**

#### **I. INTRODUCTION**

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence activities, which could result from the proposal to improve the safety of visitors hiking the Chilkoot Trail, alleviate sanitation concerns, eliminate further degradation of floodplain values, and enhance backcountry operations in the Chilkoot Trail Unit of Klondike Gold Rush National Historical Park (the park) in Skagway, Alaska.

#### **II. THE EVALUATION PROCESS**

Section 810(a) of ANILCA states:

“In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands ... the head of the federal agency ... over such lands ... shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, 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 affected 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;
- (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and ( C ) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.”

ANILCA created new conservation system units and additions to existing units of the national park system in Alaska. Section 816 of ANILCA prohibits the taking of wildlife in national parks and monuments except as specifically authorized. Klondike Gold Rush National Historical Park was established in 1976 before the passage of ANILCA. ANILCA and NPS regulations do not authorize subsistence use on federal lands within Klondike Gold Rush National Historical Park.

The potential for significant restriction must be evaluated for the proposed action’s effect upon “... subsistence uses and needs, the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate the use.”

#### **III. PROPOSED ACTION ON FEDERAL LANDS**

The National Park Service (NPS) is considering relocating Sheep Camp Campground and a portion of the Chilkoot Trail from their current flood-prone locations to nearby sites with reduced flood and erosion potential. Sheep Camp Campground is a primitive backcountry facility

(serving up to fifty campers per night during peak season) located twelve miles up the rugged Chilkoot Trail in Klondike Gold Rush National Historical Park. The campground lies immediately adjacent to the Taiya River, a dynamic glacial river prone to spontaneous channel migrations and shallow flooding. Since its construction in 1993, the campground has experienced frequent inundation from flood waters. It is located within the one to two year floodplain and is subject to periodic flooding during the summer visitor use season (Rice 2004). A flood in 2002 created particularly unsafe conditions for Chilkoot Trail hikers and extensive damage to Sheep Camp facilities. Following completion of an Environmental Assessment (EA), emergency flood remediation measures were taken in the spring of 2003 which involved replacement of the flood damaged campsites, repair of a footbridge, rerouting of the Chilkoot Trail, and relocation of several pit toilets (NPS 2003).

During the summer of 2004, a U.S. Fish and Wildlife Service (USFWS) hydrologist conducted an evaluation of Taiya River flooding and erosion issues at Sheep Camp (Rice 2004). It was noted that eastward migration of the river channel was an immediate threat to a narrow footbridge spanning a channel of the Taiya River, a section of the Chilkoot Trail at the north end of the bridge and the southern half of Sheep Camp campground. Bioengineering techniques to stabilize the channel were not considered a feasible alternative given the extremely dynamic nature of the river. Removing the campground and the trail from the active floodplain was the final recommendation (Rice 2004).

These events prompted the NPS to evaluate the location of Sheep Camp campground and propose its relocation to a site with reduced flood potential to prevent further damage to park facilities and ensure visitor safety and access along the Chilkoot Trail. Public participation has been an integral part of the Sheep Camp Campground Relocation planning process. Public scoping for this EA initially began in July of 2005 when the public was invited to comment on issues and alternatives to be considered during the environmental assessment of this project. Comments from various federal, state, and local agencies; public-interest groups; local communities; and the general public were sought through a scoping notice that was issued on July 28, 2005, for a 45 day comment period. The scoping announcement appeared in the local newspaper, was posted in several public locations throughout Skagway and was published on the NPS public comment and planning website (<http://parkplanning.nps.gov>). One written comment letter was received from a private citizen that suggested two potential campground locations one of which entailed continued utilization of the existing location. Both suggestions are addressed in the EA.

In addition to the investigation conducted by the USFWS Hydrologist, three site visits to the project area have been made by teams of NPS planners and resource managers since 2004. In July 2004, the NPS Biologist, Archeologist and Trail Crew Leader visited the area to assess a 30' section of the Chilkoot Trail immediately south of the campground that had washed out the previous week. This group searched for a potential trail reroute around the eroding trail segment which would also bypass a footbridge that likewise appeared to be threatened by the approaching river. In June of 2005, an interdisciplinary team of nine NPS employees hiked the Chilkoot Trail from Dyea to Sheep Camp. The team was comprised of five staff members from Klondike Gold Rush National Historical Park (Chief Ranger, Chief of Maintenance, Trail Crew Leader, Biologist, and Archeologist) and four regional and national support office specialists (Landscape Architect, Geologist, Geomorphologist, and Environmental Planner). The purpose of this trip was to evaluate potentially suitable areas for relocation of Sheep Camp campground. After an exhaustive search of the surrounding area, two potentially suitable locations for a new campground were identified for more in depth study (Hahr 2005). During the summer of 2005, park resource management specialists conducted intensive resource inventories of the potential sites and recommended a preferred location for the campground. A smaller team of NPS

employees (Chief Ranger, Landscape Architect, Chief of Maintenance, Biologist and Archeologist) returned to the area in late September 2005 to consider specific details of the campground location and design.

The purpose of the proposed project is to improve the safety of visitors hiking the Chilkoot Trail, alleviate sanitation concerns, eliminate further degradation of floodplain values, and enhance backcountry operations. Frequent flooding in the existing campground has impacted visitor safety and access in this popular backcountry area of the park. This EA analyzes the proposed action and no action alternatives and related impacts. The EA has been prepared in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9).

Visitation to Klondike Gold Rush National Historical Park (the park) averages nearly a million people annually of which approximately 3,000 hike the 33-mile Chilkoot Trail. The initial 16.5 miles of the trail are in the United States and are managed by the NPS under a cooperative agreement with the State of Alaska. The remaining 16.5 miles are in Canada. Sheep Camp (elevation 1000 feet) is a strategically important campground along the Chilkoot Trail because it is the final stop before the steepest and most physically challenging section of the hike up the Scales and over Chilkoot Pass (elevation 3700 feet).

This analysis addresses two alternatives: the “No Action” alternative and the “Proposed Action” alternative. A full discussion of the alternatives and anticipated effects can be found in the Environmental Assessment (EA) for this project.

#### **IV. AFFECTED ENVIRONMENT**

A summary of the affected environment pertinent to subsistence is presented here. For a comprehensive description, see the “Affected Environment” and “Environmental Consequences” sections of the EA. The Resource Management Plan (RMP) contains additional descriptions of the environment of Klondike Gold Rush National Historical Park (NPS 2000).

Federal Lands within Klondike Gold Rush National Historical Park are closed to subsistence uses. Other federal lands adjoining the park in the Tongass National Forest are open for subsistence uses. Regional subsistence activities that take place include hunting, fishing, trapping, berry picking, and plant gathering. Black bear, moose, fish, furbearers, small mammals, waterfowl, berries, other edible plants, and wood constitute the major subsistence resources used by local residents in Unit 1D.

#### **V. SUBSISTENCE USES AND NEEDS EVALUATION**

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

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

1) The potential to reduce populations:

The “No Action” alternative is the status quo. It does not involve relocation of Sheep Camp Campground by the National Park Service, and consequently has no potential to reduce populations of subsistence resources through the actual reduction of numbers, the redistribution of resources, or habitat loss beyond the existing level resulting from the existing level of development of the project area.

The “Proposed Action” alternative involves relocation of the Sheep Camp Campground by the National Park Service from its current flood-prone location adjacent to the Taiya River to a new site located approximately one mile to the north that is outside of the active floodplain. In addition, a segment of the Chilkoot Trail would be relocated above the floodplain and a footbridge currently threatened by the river would be relocated to a more stable site 1,230 upstream. This alternative would relocate flood and erosion threatened facilities at Sheep Camp campground without measurably increasing the overall presence of overnight visitors in this part of the Taiya River valley. The proposed actions would result in a developed area footprint at the new campground that is 25% smaller than the footprint at the existing campground. The visitor capacity would be unchanged and the total number of campsites, outhouses, and shelters would be approximately the same. The total length of trails in the area would also be similar. The new campground would be considerably closer to the backcountry ranger station than the existing campground and it would shorten the travel distance to Happy Camp, the next campground along the Chilkoot Trail, from 8 to 7 miles.

No subsistence is known to occur in these areas. The relocation of the campground, trail and bridge is not expected to reduce or redistribute subsistence resources. Wildlife and habitats would be subjected to minimal temporary impacts and disturbances caused by these improvements. The potential impacts would be temporary and would not reduce wildlife populations or their habitat.

2) Restriction of Access:

The “No Action” alternative is the status quo. It does not involve relocation of the campground, trail and bridge in the Sheep Camp area by the National Park Service. Consequently, it will not lead to an increase in restrictions to access.

The “Proposed Action” alternative involves relocation of the campground, trail and bridge in the Sheep Camp area by the National Park Service. This alternative would remove the threat of flood damage to facilities without measurably increasing the capacity or size of the Sheep Camp campground. The rights of access for subsistence harvest on NPS lands are granted by section 811 of ANILCA. The park is managed according to legislative mandates, NPS management policies, and the Code of Federal Regulations. This alternative would not in any way affect the access to resources by local subsistence users. Consequently, no restrictions on access to resources by subsistence users are proposed.

3) Increase in Competition:

The “No Action” alternative is the status quo. It does not involve relocation of the campground, trail and bridge in the Sheep Camp area by the National Park Service. Consequently, it will not lead to an increase in competition.

The “Proposed Action” alternative involves relocation of the campground, trail and bridge in the Sheep Camp area by the National Park Service. This alternative would remove the threat of flood damage to facilities without measurably increasing the capacity or size of the Sheep Camp campground. This alternative would not produce any increases in competition for subsistence resources. The continued implementation of provisions of ANILCA Title VIII should ensure a subsistence priority on federal lands within the region.

## **VI. AVAILABILITY OF OTHER LANDS**

The availability of other lands outside and within the park have been considered in the proposed actions. There is no other feasible way to meet NPS needs of providing safe and accessible opportunities for visitors to experience the Chilkoot Trail without basing those activities on lands in the park. The proposed actions are consistent with NPS mandates. Because the proposed actions occur on federal lands that are not available for subsistence use, the proposed actions do not affect the availability of federal lands for subsistence use.

## **VII. ALTERNATIVES CONSIDERED**

No alternatives other than the “No Action” and “Proposed Action” alternatives were considered.

## **VIII. FINDINGS**

This analysis concludes that the “Proposed Action” alternative will not result in a significant restriction of subsistence uses. The “No Action” alternative will also not result in a significant restriction of subsistence uses.

## **REFERENCES:**

- NPS. 1996. General Management Plan/Development Concept Plan and Environmental Impact Statement, Klondike Gold Rush National Historical Park, Skagway, Alaska.
- NPS. 2000. Resource Management Plan, Klondike Gold Rush National Historical Park, Skagway, Alaska.

## APPENDIX B

### Section 106 National Historic Preservation Act Compliance

#### ASSESSMENT OF ACTIONS HAVING AN EFFECT ON CULTURAL RESOURCES

##### A. DESCRIPTION OF UNDERTAKING

1. **Park:** Klondike Gold Rush National Historical Park
2. **Work/Project Description:**
  - a. Project Name: Sheep Camp Campground Relocation / Trail Reroute / State Cabin repairs
  - b. Project Number(s): KLGO 05-03
  - c. Describe project and area of potential effects (as defined in 36 CFR Part 800.2(c)); explain why work/project is needed.

Klondike Gold Rush National Historical Park (KLGO) is proposing three related projects at historic Sheep Camp, located along the recreational Chilkoot Trail in Southeast Alaska. A full discussion of the natural and cultural environment at Sheep Camp and a more detailed description of the proposed projects can be found in the project's Environmental Assessment (Hahr 2005) and the Sheep Camp Recreational Campground Relocation Project Cultural Resource/Archaeological Survey report (Higgs 2005), both of which are attached.

##### • **Sheep Camp Campground Relocation**

The existing recreational Sheep Camp Campground is a primitive backcountry campground located along the Chilkoot Trail approximately twelve miles from the trailhead in Dyea. KLGO is considering relocating the Sheep Camp Campground from its current flood-prone position to a nearby site with reduced flood and erosion potential. Since its construction in 1993, the current campground has experienced frequent flooding during the summer (the high visitor use season). This is not surprising since the campground is located within the 1-2 year floodplain. A flood in 2002 created particularly unsafe conditions for Chilkoot Trail hikers and did extensive damage to the park's facilities at the campground. The purpose of the proposed project is to improve the safety of visitors hiking the Chilkoot Trail, to alleviate sanitation concerns, to eliminate further degradation of floodplain values, and to protect park facilities from likely future floods by moving the campground out of the 1-2 year floodplain.

Due to topographical constraints, archeological resources (Klondike Gold Rush era artifacts and features), and natural hazards (e.g. steep slopes, floodplain, and avalanche zones), potentially suitable campground sites in this area are limited. Given these limitations, however, an area has been found and selected for the proposed new campground. It is located approximately one mile north of the current campground and partially intrudes into the original recreational Sheep Camp Campground that grew up around the State of Alaska Sheep Camp Log Cabin that was constructed when the Chilkoot Trail was first opened to recreational hikers by the State in the early 1960s.

The proposed new campground is approximately 2 acres in size (about 25% smaller than the existing campground), located in an open deciduous forest with a fairly gentle northeast-oriented slope (8%). A detailed description of the site including photographs and maps can be found in Higgs 2005 and Hahr 2005. The proposed campground is located within or adjacent to the northeastern extent of historic Sheep Camp. It also incorporates the Sheep Camp State Cabin and the northeastern extent of the original campground (in use from the early 1960s to 1995) (Higgs 2005).



The new campground would contain approximately the same number and types of campsites and facilities as the existing campground. Of the total acreage, about one acre would be disturbed by crews using hand tools for the construction of facilities, campsites (including wooden tent platforms) and associated trails. Specifically, the new campground will consist of about 20 tent sites, a warming shelter and two “cold composting” or moldering privies. Each tent site will consist of one 10 foot x 10 foot elevated wooden tent platform. The area cleared for the platforms will be approximately 15 foot x 15 foot with brush cut to ground level. Sites will be situated to reduce or eliminate the need to remove any tree larger than 3 inch diameter and the use of elevated platforms eliminates the need to level a large area for tents. Footings or anchor posts will be set in the ground at each corner of the pad to keep the unit in place and level. These will be either 4 inch x 4 inch posts buried three foot deep or rods drilled into the bedrock and anchored with epoxy. The trail from the Chilkoot Trail to the campsites will be constructed in the most convenient route to minimize the need to remove vegetation and trees and will rejoin the Chilkoot Trail northwest of the campground. The trail will be 2 to 3 feet wide with the center of the trail removed to solid ground and the brush trimmed back to make a 5 foot corridor. Two moldering privies like the ones currently in use at the existing Sheep Camp Campground will be constructed at locations to be determined. These sit directly on the ground on a wooden crib, with the outhouses mounted on the top. The use of the moldering privy will eliminate the need to excavate pit toilets, and to relocate pit toilets as they fill.

A warming shelter will be constructed near the existing State Cabin. This will be located in an area south of the State Cabin and will be of the same construction as the existing units found at the other campgrounds (wood platform and tent frame covered with canvas tent). The area selected for the shelter will be cleared of brush and trees in a 20 foot x 20 foot area. The base of the shelter will sit on the ground and be leveled by pads and blocks set at grade. Most of these structures (new signs, tent platforms, outhouses, a ranger storage shed, and warming shelters) will simply be relocated from the old Sheep Camp Campground.

Construction of the trail and campsites should be completed by NPS personnel during the summer of 2006 but work may continue into the summer of 2007 if the job cannot be completed in one season. Construction supplies and materials would be sling-loaded to the site by helicopter. This would require 1-3 days worth of flights. These flights would occur in May prior to the start of the project and the summer season. Crews are expected to start work on the new campground and trail relocation in June and continue working into September. The crews would travel to the site by foot and stay at the Sheep Camp Ranger Station during construction. Approximately 4-10 maintenance workers would be involved in this project. The exact location of individual campsites will be determined on the ground by the park’s trail crew working in conjunction with NPS natural and cultural resource specialists. Sensitive areas identified by these specialists will be avoided.

Once the new Sheep Camp Campground has been established, the existing campground would be permanently closed and all structures would be disassembled and transported either to the new site where they would be reassembled and reused if feasible or removed via helicopter to the park maintenance facility in Skagway. The old pit toilet holes would be filled in and all existing trails would be disguised with dead and down limbs and trees. Given the frequency of natural disturbance (i.e. flooding) and the occurrence of scattered archeological features, active rehabilitation of the site (i.e. scarifying the surface areas of old camp sites, existing trail surfaces and any other disturbed areas) is not proposed. Once human activity is eliminated from the area, natural re-vegetation is expected to occur relatively quickly given the disturbance-adapted vegetative community present. The old campground would be annually monitored by the park natural and cultural resources staff for up to three years to ensure that non-native invasive plants are not present and that artifacts and features are not being disturbed.

- **Trail Reroute / Bridge Construction**

KLGO is also planning on rerouting approximately 1,500 feet of recreational Chilkoot Trail south of the existing Sheep Camp Campground. The purpose of this new trail reroute is to avoid sections of the current trail that have been damaged or destroyed by the 2002 flood. The new trail would run parallel to the existing trail but would be located east of Waterfall Creek and above the Taiya River floodplain to ensure that flooding and erosion would no longer be concerns along this section of trail. The proposed reroute would start at the current Zig Zag Bridge, but bypass that footbridge and roughly follow a natural bench above the east bank of Waterfall Creek. Near its northern end, the trail would abruptly turn due west and cross Waterfall Creek. At this point a new footbridge would have to be built approximately 1,230 feet upstream of the current footbridge (Zig Zag Bridge). The new trail would then connect up to the old trail at the existing Sheep Camp Campground.

Construction of the trail will be done using standard trail building techniques. All work would be done by hand with the exception of the occasional use of a chain saw to fell and trim trees. The NPS Trail Crew would remove vegetation along the new trail corridor to a width of approximately 8 feet. The trail tread would be approximately 36 inches in width and brushed back an additional 2 – 3 feet on each side. The trail will be routed around larger trees as needed but small saplings up to three inches and dead timber will be removed. Every effort will be made to avoid wetland areas and major obstacles requiring disturbance to rock formations. If it is necessary to locate the trail in or near wetlands, elevated boardwalks will be used to alleviate damage to delicate mosses and fungi. Work will stop immediately at any location if historic materials or artifacts are uncovered during construction until the area can be checked out and cleared by the park archeologist assigned to the project.

The new trail will require the construction of a new footbridge at the north end of the reroute. The new bridge design would resemble that of the existing Zig Zag Bridge and would be compatible with the historic scene. Two support cribs will be constructed on either side of the Waterfall Creek using six to eight inch diameter logs, five foot long, obtained from blow down and trail construction. The cribs will be 20 feet apart on either side of the creek, but will likely be on the edge of the high water level. The south side crib will be cut into the creek bank about two feet. The cribs will be 5 foot by 5 foot wide and 5 foot high with between 6 and 12 inches below grade. All material removed during excavation will be separated with the river rock used to fill the center of the cribs and the silt spread on the trail surface away from the creek. The stringers will be constructed in three 20 foot spans using 6 inch by 12 inch by 20 foot long treated lumber. The center section will run from crib to crib and the end sections will run from the cribs to 6 inch x 8 inch sills anchored to the ground using 24 inch spikes. The decking will be 3 inch by 12 inch boards 3 foot wide nailed to the stringers. Once the new trail section and bridge are complete, the old bridge will be dismantled and its parts stacked in an open area near the Sheep Camp Campground for removal at a later date. The old section of trail will simply be abandoned and it should re-vegetate nicely or wash away.

- **Sheep Camp State Cabin Repairs**

KLGO is also proposing to minimally repair the existing State Cabin (a rough hewn log structure built in 1963) so that it could once again serve as a warming shelter for hikers, its original purpose. Temporary repairs will be made to the floor of the cabin by removing the existing floor deck and shimming the joists. Repairs will be made to rotten joists in order to stabilize and level the floor. The deck boards will be re-nailed to the joists and any rotten boards will be replaced with plywood decking. These repairs are only meant to make the floor safer to walk on until a full restoration of the cabin can be accomplished.

3. **Has the area of potential effects been surveyed to identify cultural resources?** No ☐ Yes ☒ Source or Reference: See number 7 below and in particular Higgs 2005.

☐ Check here if no known cultural resources will be affected. (If this is because area has been disturbed, please explain or attach additional information to show the disturbance was so extensive as to preclude intact cultural deposits.)

4. **Potentially Affected Resource(s):**

a. Name and number(s): State of Alaska site numbers are listed for the following potentially affected resources: Klondike Gold Rush National Historical Park (49-SKG-086), Chilkoot Trail and Dyea National Historic Landmark (49-SKG-132), the Chilkoot Trail (49-SKG-067), and historic Sheep Camp (49-SKG-092).

b. Location: The current recreational Sheep Camp Campground is located at approximately mile 12 on the recreational Chilkoot Trail within the park's Chilkoot Trail Unit. The proposed location for the new recreational Sheep Camp Campground is one mile north at approximately mile 13. This is also where the State Cabin is located. The proposed trail reroute would start at the Zig Zag Bridge (around mile 11.58) and terminate approximately 1,230 feet upstream from this footbridge.

c. NR status: These three projects are located within the Chilkoot Trail and Dyea National Historic Landmark which is also listed on the National Register of Historic Places.

5. **The proposed action will:** (Check as many as apply.)

- ☐ Destroy, remove, or alter features/elements from a historic structure;  
☐ Replace historic features/elements in kind;  
☐ Add non-historic features/elements to a historic structure;  
☒ Alter or remove features/elements of a historic setting or environment (including terrain);  
☒ Add non-historic features/elements (including visual, audible, or atmospheric) to a historic setting or cultural landscape;  
☒ Disturb, destroy, or make archeological resources inaccessible;  
☐ Disturb, destroy, or make ethnographic resources inaccessible;  
☒ Potentially affect presently unidentified cultural resources;  
☐ Begin or contribute to deterioration of historic features, terrain, setting, landscape elements, archeological or ethnographic resources;  
☐ Involve a real property transaction (exchange, sale, or lease of land or structures);  
☐ Other (please specify):

6. **Measures to prevent or minimize loss or impairment of historic / prehistoric properties (Remember that setting, location, and use may be relevant):**

The Chilkoot Trail extends from Dyea, Alaska to Bennett, British Columbia, a total linear distance of 33 miles. During the Klondike Gold Rush (1897-1898), approximately 30,000+ stampeders used the Chilkoot Trail on their way to the Klondike gold fields in Canada. During this period, Sheep Camp was one of the thriving but short-lived communities along the trail. In its heyday historical research indicates that Sheep Camp boasted approximately 60 businesses. Business names, such as Big Tent Saloon, Cavanaugh Restaurant, Dyea-Klondike Transportation Company, Grand Pacific Hotel, Brackett's Dance Hall, Junction Store & Coffee House, Little Gem Bakery, Sheep Camp Drug Store and Hospital, hint at the variety of entrepreneurs and services offered. Photographs of Historic Sheep Camp depict the rapid growth of the town site and the sprawl of tents for hundreds of acres along both sides of the Taiya River. Winter photographs even show tents in the middle of the frozen Taiya River. The most active period for historic Sheep Camp was during the early spring of 1898 (February – April) when the camp reached a population estimated at around 8,000. In April that year, a Dyea newspaper reported that there

was "scarcely an inch" of available ground in Sheep Camp in which to camp, with "tents so thickly set as to prevent one passing between them in any instance." (Norris and Taylor 1986).

After the Klondike Gold Rush, the Chilkoot Trail returned to its traditional function as a subsistence and recreational area for a very small population of Taiya Inlet Natives and Euro American settlers. The once thriving town of Sheep Camp rapidly went down hill after the stampede passed through and a new wave of gold seekers never materialized. The post office closed on October 21, 1899 and the town was probably vacated soon afterwards. Between the gold rush and the 1960s, it is possible that years would go by without a single party of hikers visiting Sheep Camp and crossing over the Chilkoot Pass. During this time period a few parties may have hunted in the vicinity of Sheep Camp but no one was living there for any length of time. In the early 1960s the State of Alaska opened up the current recreational Chilkoot Trail and in 1963 the State built a log cabin at Sheep Camp for hikers to sleep in overnight. The Sheep Camp Campground grew up around this cabin. The National Park Service established its presence on the trail in 1973 and has been responsible for managing it ever since.

Past archeological compliance and inventory work (Carley 1981, Fenicle 1992, Fortini 1995, Griffin 1996, 1998, Gurcke 1992, Hayes 1993, 1994) have provided researchers with fairly detailed information about the location and layout of what is left of historic Sheep Camp. The current Sheep Camp Campground appears to be located near the southeastern boundary of the historic gold rush era camp. This area might be properly called the "suburbs" of Sheep Camp with the "downtown" or business core of Sheep Camp located about a mile north. Recent archeological surveys indicate that the proposed campground is located at or near the extreme northern end of historic Sheep Camp (Higgs 2005).

#### • **Sheep Camp Campground Relocation**

The area of the proposed new Sheep Camp Campground was surveyed by park archeologists during the summer of 2005 and several known archeological features were relocated north of the Ranger Station and south of the State Cabin (between mile 12.48 and 13). One hundred thirty-five shovel tests were placed within the proposed campground site area. These shovel probes took place along northeast-oriented lines. None of the 135 systematic shovel tests produced cultural material. However, metal detecting and additional discretionary shovel tests located historic materials along the southern periphery of the proposed campground site where previously documented features are known to exist. Feature SC 34 is a new archaeological feature that was found during this testing just east of the Sheep Camp State Cabin. Additional finds were made along the northern extent of structural features SC 10 and SC11. Mixed-period artifacts uncovered during the shovel tests were collected and the historic artifacts have been curated at the park (Higgs 2005).

Given SC 34's location just northeast of SC 11, and other features associated with East Sheep Camp farther south, the northeast boundary of historic Sheep Camp can be extended to include the State Cabin area. This indicates that the proposed campground as preliminarily defined (i.e. June 2005) would have impacted the northeast extent of historic Sheep Camp. The transect shovel testing results indicate, however, that there are apparently no significant archaeological remains in the acreage north of the State Cabin.

These archaeological surveys delineated the northern boundary of historic east Sheep Camp. This resulted in moving the southern boundary of the proposed campground north of known archaeological features associated with historic Sheep Camp (SC10, SC11, and SC34) with a few exceptions. To avoid mitigation of Sheep Camp features 11 and 34, lead park archeologist Andrew Higgs recommend that ground disturbing construction be limited to areas north of the State Cabin with the exception of a few areas south of the cabin. Because of the nearness of archeological features to the new campground, the lead park archeologist is concerned about the loss of archaeological data through unintentional or planned

collecting activities, and vandalism. This potential adverse impact can be dealt with through active patrolling of the campground by the backcountry rangers and educating the public about the sensitivity of the cultural resources at Sheep Camp and along the trail (Higgs 2005).

- **Trail Reroute**

An area for the proposed trail reroute that avoids the flood-damaged sections of the main trail was selected after an initial survey. This new section of trail was then flagged by the park trail crew in association with the lead park archeologist, then carefully walked over and visually examined by park archeologists. The trail corridor was then metal detected and a gold rush era light metal Yukon stove (CT 368) was found. Given the high visibility and portability of this 2 foot long stove, it was collected in September 2004 and is now part of the KLGO museum collection. Another feature (CT 383) was found 15 meters west and down slope of the trail centerline on the margin of the trail corridor. Given the low visibility of this feature (a subsurface metal artifact scatter completely covered with moss), it is unlikely that hiker traffic would “discover” or bother the feature so it was left in place. A series of 79 shovel tests were then placed in a linear fashion along the new trail corridor so that two tests occurred every 10 meters. None of these tests located any cultural material. After the work noted above was done, lead park archeologist Andrew Higgs recommended that the trail reroute as proposed be allowed to proceed as it was felt that the proposed linear pedestrian trail will have minimal effect on the historical integrity of the overall cultural landscape (Higgs 2005).

- **Repairs to the existing Sheep Camp State Cabin**

As indicated earlier, the State Cabin was constructed in 1963. Only minor repairs have been done to the building in the 40+ years of its existence. The building is settling and the floor is buckling and the structure will need major repairs in the near future. The temporary repairs proposed will be made to the floor of the cabin by removing the existing floor and shimming the joists. Repairs will be made to the rotten joists to stabilize the floor. The deck boards will be re-nailed to the joists and any rotten boards will be replaced with plywood decking. These repairs are only meant to make the floor safer to walk on until a full rehabilitation or restoration of the cabin can be accomplished.

A professional Condition Assessment for the Sheep Camp cabin was conducted in 2003 by Harrison Goodall. The park has requested funds for rehabilitation of this, and it’s ‘sister cabin’ at Canyon City.

Currently, there are a number of artifacts “on display” at Sheep Camp cabin that the visitors have collected and deposited through the years. In order to promote a more positive archaeological preservation message, the existing artifacts that are now “on display” at the Sheep Camp cabin will be used to develop an appropriate display and message that promotes understanding of the area and the need to continue to preserve the site *in situ* per NPS management policies. They will be photo-documented in place and removed to Skagway for temporary storage until a proper display area is completed.

- **Stipulations (for all three projects)**

All ground disturbing construction activities (such as the placement of moldering privies, the placement of signs, and the rehabilitation of the State Cabin) shall be monitored by park archeologists.

If unknown or concealed archeological or historical resources are encountered during any activity listed above, all necessary steps will be taken to protect the resources discovered and to immediately notify the Chief of Resources, Klondike Gold Rush National Historical Park, at the park headquarters in Skagway, Alaska. Further work in the area of discovery will be suspended until the

nature and extent of the resources can be determined. If artifacts and / or features are found during ground disturbing activities, they will be properly documented by park archeologists. If the artifacts are “in the way,” they may be removed by park archeologists and they and any written or photographic documentation associated with this project will be curated at the park according to standard NPS practices. A final archaeological compliance report will be prepared, with copies being shared with the SHPO and Regional Office staff.

Once the new Sheep Camp Campground is established, the existing campground shall be permanently closed and all structures disassembled and removed from the site. The old pit toilets will be filled in and the trails and camping spots disguised with dead and down limbs and trees. The active rehabilitation of the site (such as scarifying the surface areas of old camp sites, existing trail surfaces and any other disturbed areas to promote growth of native plants) is discouraged and may not occur without archeological monitoring. The old campground and the old section of trail will be monitored by the park cultural resources staff to ensure that archeological artifacts and features are not being disturbed. Once the new trail reroute and bridge are complete, the old bridge will be dismantled and removed.

The potential adverse impact to the surrounding archeological features and artifacts can be dealt with through active patrolling of the campground by the backcountry rangers and educating the public about the sensitivity of the cultural resources at Sheep Camp and along the trail. A brief “Cultural Resources Management Plan for the Sheep Camp Campground” should be written that will explain to the backcountry rangers, the trail maintenance crews, and other park staff, the importance of the cultural resources located here and how they should be managed.

7. **Supporting Study Data:** (attach if feasible; if action is in a plan, EA or EIS, give name and project or page number):

Bearss, Edwin C.

1970 *Proposed Klondike Gold Rush National Historical Park Historic Resource Study*.  
Washington, D. C.: National Park Service.

Carley, Caroline D.

1981 *Inventory of Cultural Resources in the Chilkoot and White Pass Units of Klondike Gold Rush National Historical Park. Reconnaissance Report No. 40*.  
Seattle, WA: Office of Public Archaeology, Institute for Environmental Studies, University of Washington.

Fenicle, Diane L.

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Fortini, William R., Jr.

1995 *Final Report - Field Season 1995. Compliance Projects KLGO 95-03, 95-04, 94-17, 94-25, 94-27, 94-28, 94-29, 95-A, B, C, D, E, F, G; Chilkoot Trail Survey; and Sites CT #126 and 140*. Skagway, AK: National Park Service.

Griffin, Eve

1996 *Klondike Gold Rush National Historical Park: Chilkoot Trail Archaeology 1996 Survey Report*. Skagway, AK: National Park Service.



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Archaeology 1998 Survey Report. Skagway, AK: National Park Service.

Gurcke, Karl

1992 Archeological Compliance Report: Construct four new Chilkoot Trail Shelters  
and the new Sheep Camp Campground. Skagway, AK: National Park Service.

Hayes, David

1993 Final Report of 1993 Field Survey: Canyon City to Pleasant Camp; and  
Compliance Projects from Dyea, Sheep Camp, and 14.2 Mile Bridge. Skagway,  
AK: National Park Service.

1994 Final Report of 1992 Archaeological Field Work: Compliance Projects at  
Finnegan's Point, Pleasant Camp, Sheep Camp, 12 Mile Bridge, and 11.5 Mile  
Trail Re-Route. Skagway, AK: National Park Service.

Hahr, Meg

2005 Environmental Assessment: Sheep Camp Campground Relocation, Klondike  
Gold Rush National Historical Park, Skagway, AK.

Higgs, Andrew

2005 Sheep Camp Recreational Campground Relocation Project Cultural Resource /  
Archaeological Survey 2005, Summary Report. Skagway, AK: National Park  
Service.

Norris, Frank and Carol Taylor

1986 Historic Structures and Sites: Dyea and the Chilkoot Trail. Anchorage, AK:  
National Park Service. Draft report.

Spude, Robert L.

1980 Chilkoot Trail. *Occasional Paper No. 20*. Fairbanks, AK: Anthropology and  
Historic Preservation, Cooperative Park Studies Unit, University of Alaska,  
Fairbanks.

8. **Attachments:** ☐ Maps ☐ Archeological survey, if applicable ☐ Drawings ☐  
Specifications ☐ Photographs  
☐ Scope of Work ☐ Site plan ☐ List of Materials ☐ Samples ☒ Other: Hahr 2005,  
Higgs 2005

9. **Prepared by:** Karl Gurcke **Date:** 12/08/05  
**Title:** Historian  
**Phone:** (907) 983-2921, (907) 983-9214 **Fax:** (907) 983-9249  
**Email:** [karl\\_gurcke@nps.gov](mailto:karl_gurcke@nps.gov)

## B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisers as indicated by check-off boxes or described below:

**SPECIALISTS:** Your comments here (or attached) show that you have reviewed this proposal for conformity with requirements of Section 106, with the 1995 Servicewide PA (if applicable), and applicable parts of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, NPS Management Policies, and NPS-28, and have given your best professional advice about this project and the issues relevant to the Section 106 process, including identification and evaluation of historic properties and further consultation needs.

### ☐ **ARCHEOLOGIST**

Name: Andrew Higgs

Date:

Comments: See attached report

*Check if project does not involve ground disturbance* ☐

#### ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

Recommendations for conditions or stipulations:

### ☐ **CURATOR**

Name: Debbie Sanders

Date:

Comments:

#### ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

Recommendations for conditions or stipulations:

### ☐ **HISTORIAN**

Name: Frank Norris

Date: 2/10/04

Comments:

#### ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

Recommendations for conditions or stipulations:

### ☐ **HISTORICAL ARCHITECT:**

Name: Steve Peterson

Date:

Comments:

ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

*Check if project meets Secretary's Standards* ☐

Recommendations for conditions or stipulations:

☐ **HISTORICAL LANDSCAPE ARCHITECT**

Name: Steve Peterson

Date:

Comments:

ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

*Check if project meets Secretary's Standards* ☐

Recommendations for conditions or stipulations:

☐ **OTHER ADVISERS**

Name: Theresa Thibault

Title or area of specialty: Chief of Resources

Date:

Comments:

ASSESSMENT OF EFFECT:

☐ Does not meet criteria of Adverse Effect

☐ Programmatic Exclusion

☐ Meets Criteria of Adverse Effect

*Check if project meets Secretary's Standards* ☐

Recommendations for conditions or stipulations:

C. **PARK 106 COORDINATOR REVIEW AND RECOMMENDATIONS** (completed by the park Section 106 coordinator)

1. **Assessment of Effect:**

- ☐ Does not meet criteria of Adverse Effect  
☐ Programmatic Exclusion  
☐ Meets Criteria of Adverse Effect

2. **Compliance requirements:** (The following is the park's assessment of Section 106 process, needs and requirements for this undertaking.):

☐ A. STANDARD 36 CFR PART 800 CONSULTATION

☐ B. PROGRAMMATIC EXCLUSION UNDER THE 1995 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

APPLICABLE EXCLUSION:

☐ C. PLAN-RELATED UNDERTAKING

Specify plan/EA/EIS: EA Sheep Camp Campground Relocation. EA to be released for public comment January 13, 2006.

☐ D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

Specify: \_\_\_\_\_

☐ E. STIPULATIONS/CONDITIONS

Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

Recommended by Park Compliance Coordinator

Name: \_\_\_\_\_

Title: Chief of Resources

Date: \_\_\_\_\_

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D. **SUPERINTENDENT'S APPROVAL**

The proposed work conforms to NPS Management Policies and NPS-28 and I have reviewed and approve the recommendations, stipulations or conditions noted in Section C of this form.

Name/Signature of Superintendent \_\_\_\_\_

Date \_\_\_\_\_

## APPENDIX C

### State of Alaska historic Preservation Office Letter of Concurrence

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION  
OFFICE OF HISTORY AND ARCHAEOLOGY

FRANK H. MURKOWSKI, GOVERNOR

550 W. 7TH AVENUE, SUITE 1310  
ANCHORAGE, ALASKA 99501-3565  
PHONE: (907) 269-8721  
FAX: (907) 269-8908

January 5, 2005

File No.: 3130-1R NPS

SUBJECT: Sheep Camp Campground Relocation/ Trail Reroute/ Bridge Construction/ State Cabin Repairs, Klondike Gold National Historical Park, Skagway (Project No. KLGO 05-03)

Theresa Thibault  
Chief of Resources  
Klondike Gold Rush National Historical Park  
P. O. Box 517  
Skagway, AK 99840

Dear Ms. Thibault,

The Alaska State Historic Preservation Office received your correspondence and the following documents on December 27, 2005:

- *Assessment of actions having an effect on cultural resources.*
- *Environmental Assessment for the Sheep Camp Campground Relocation (8 December 2005).*
- *Chilkoot Trail Unit, Sheep Camp Recreational Campground relocation Project, Cultural Resource/Archaeological Survey 2005, Summary Report by Andrew Higgs (September 2005)*

We have reviewed the referenced project for potential conflicts with cultural resources under Section 106 of the National Historic Preservation Act. We concur with your determination that the following historic properties will not be adversely affected by your undertaking:

- Klondike Gold Rush National Historical Park (SKG-086)
- Chilkoot Trail and Dyea National Historic Landmark (SKG-132)
- Chilkoot Trail (SKG-067)
- Sheep Camp (SKG-092)

Please contact Stefanie Ludwig at 269-8720 if you have any questions or if we can be of further assistance.

Sincerely,



Judith E. Bittner  
State Historic Preservation Officer

JEB:sl