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National Park Service  
U.S. Department of the Interior



Klondike Gold Rush National Historical Park  
Alaska

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## **Dyea Area Plan and Environmental Assessment**

*January 2014*

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# Dyea Area Plan

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## *Environmental Assessment* *January 2014*

National Park Service  
U.S. Department of the Interior

Klondike Gold Rush National Historical Park  
Alaska

### **Note to Reviewers**

Comments on this document can be submitted at <http://parkplanning.nps.gov>.

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Cover Photo: A pack train of sheep on Dyea at Trail Street. John M. Blankenberg, Photographer. Candy Waugaman Collection, KLG0 Library DT-9-8844

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## Summary

The *Dyea Area Plan and Environmental Assessment* provide direction and guide management decisions for the Dyea area of Klondike Gold Rush National Historical Park for the next 20 years. While the 1996 *General Management Plan* includes general management guidance for Dyea, it does not provide sufficient guidance for the National Park Service to be proactive in protecting the cultural landscape and associated high quality visitor experiences in the Dyea area because of the exponential growth in levels and types of visitor activities since it was published. The goal of this new *Dyea Area Plan and Environmental Assessment* is to use new information obtained since 1996 to provide specific guidance for implementing the general direction in the 1996 GMP and to describe how the NPS would manage the Dyea Unit to protect and interpret the cultural landscape and historic resources and values within the dynamic natural environment.

The plan describes how the National Park Service would provide future generations with a variety of opportunities to experience the park's Dyea area while protecting natural and cultural resources and values. National Park Service actions are guided by established laws such as the National Park Service Organic Act and the National Historic Preservation Act, and by policies such as the NPS Management Policies. Tables 1 and 2 summarize the plan alternatives and the environmental impacts of each alternative. Proposed actions would be phased in over the 15-20 year life of the plan as funding allows.

**Table 1: Action Alternatives**

	<b>No Action Alternative</b>	<b>Action Alternative</b>
	Under the No Action alternative, NPS lands in Dyea would continue to be managed according to direction in the 1996 <i>KLGO GMP/Development Concept Plan</i> and the Superintendent’s Compendium. Any proposed management actions would be subject to individual environmental compliance (NEPA and NHPA Section 106) procedures and would be implemented on a case-by-case basis.	Under Alternative 2, the park would adopt a Dyea Area Plan. NPS lands in Dyea would continue to be managed according to direction in the 1996 <i>KLGO GMP/Development Concept Plan</i> and the Superintendent’s Compendium and high priority actions would be implemented as proposed in the 2006 <i>Cultural Landscape Treatment Recommendations</i> and the 2013 <i>Cultural Landscape Report</i> . In addition to the actions common to both alternatives, this alternative proposes the actions listed below:
1	The Dyea Flats and Slide Cemetery Roads would continue to be graded annually.	The existing Dyea Flats Road and Slide Cemetery Road would be brought up to NPS and FHWA standards by correcting deficiencies such as drainage problems and sightline obstructions. Sightlines would be maintained by clearing vegetation. Portions of the Dyea Flats Road may be realigned or moved to avoid damage from river erosion.
2	Access to the Historic Townsite would continue with no discernible “formal” entrance into the Historic Townsite.	A new Historic Townsite entrance area would be developed at the intersection of Dyea Road and Dyea Flats Road. The entrance area would include parking for up to 5 vehicles (including parking for the River Trail to the Dyea Core Historic Townsite), public restroom facilities (two vault toilets), and small scale features such as benches and signs.
3	The park would rehabilitate the Kinney Toll Bridge (McDermott) Cabin and explore suitable use and relocation in a separate planning document.	The Kinney Toll Bridge (McDermott) Cabin would be relocated and rehabilitated as an interpretive wayside and orientation node. The Matthews Cabin would be interpreted as part of this site development.
4	No new trails would be developed. Social trails may or may not be managed. Bicycles and hikers would continue to use the same trails. Bicycles would continue to share the road with automobiles.	A new multiuse River Trail would connect the relocated Kinney Toll Bridge (McDermott) Cabin with the Dyea Core Historic Townsite trail system. This separate hike/bike trail would be developed by choosing a route that does not adversely affect cultural resources.
5	Maintenance equipment would continue to be stored in Skagway and transported to Dyea as needed.	The aging Kalvick garage located south of the Kalvick house would be replaced by a maintenance support facility on federally owned property.
6	The park would replace substandard park housing in Dyea with a new bunkhouse but would complete NEPA review in a separate planning document.	The park would replace substandard park housing in Dyea with a new bunkhouse for seasonal park employees on park land adjacent to other park housing identified in the GMP as appropriate for support facilities.

7	No new parking would be added at Slide Cemetery. The one outhouse would continue to serve the public.	The Slide Cemetery parking area expansion would include parking spaces for two additional vehicles, for a total of five vehicles, and one Vault Toilet.
8	Social trails would continue to be used within the Dyea Core Historic Townsite and continue to impact sensitive archaeological materials. No coordinated system of managed trails would exist.	A set of trails would be developed within the Dyea Core Historic Townsite that would align with the historic street grid. The trail system would link with other trails in the Historic Townsite as well as with trails leading onto the Municipal-owned “flats” area. Existing trails in the core historic townsite that would not be incorporated into the new trail system would be closed and allowed to naturally revegetate.
10	The park would continue evaluating conditions at the gravesites and communicate with involved stakeholders, but would evaluate any actions relating to relocation of graves in a separate planning document.	The park would identify a relocation area on federal property for graves in the event that it becomes necessary to relocate them away from the river. Any relocation activity would be carried out with appropriate landowners and relevant parties including the state, tribes, and family members.
11	No additional trails would be constructed for horse use.	If a sustainable agreement could be achieved, and fund sources identified between the municipality or other partners and the park, the park would assist with further planning, design, and compliance to construct a horse trail.
12	Trailhead facilities would remain as they are, with no improved access between the long term parking and trailhead. No new interpretive displays would be added and no new benches would be installed.	Improvements would be made to facilities at the Chilkoot Trailhead. Trail surfaces connecting trailhead facilities would be capped with gravel. Benches and additional interpretive displays would be incorporated into the Trailhead facilities. The trail connecting the long term parking and the campground would be improved through brushing, resurfacing and a 500ft reroute.
13	The park would continue to pursue permanent closure of the core historic townsite to horses to protect irreplaceable cultural landscape features and artifacts. Horse traffic would continue to be allowed in the Dyea Historic Townsite outside of the core historic townsite. Commercial horse traffic would continue to be restricted to an alternate route designated for commercial horse use outside the Dyea Core Historic Townsite.	The core historic townsite would be closed to horses permanently to protect irreplaceable cultural landscape features and artifacts and to facilitate construction and maintenance of an accessible trail. Horse traffic would continue to be allowed in the Dyea Historic Townsite outside of the core historic townsite. Commercial horse traffic would continue to be restricted to an alternate route designated for commercial horse use outside the Dyea Core Historic Townsite.
14	Commercial services would continue to be managed under the existing <i>Commercial Services Plan</i> in the 1996 GMP.	Commercial services would be managed according to the combined guidance of the 1996 GMP and the clarifications and update in the Dyea Area Plan

**Table 2: Impact Analysis**

Impact Topic	Alternative 1	Alternative 2
	No Action Alternative	Partial CLTR Implementation
<b>Cultural Landscapes</b>	Cultural landscape integrity may be adversely affected by natural processes including unabated river erosion, and the continuation of natural vegetative succession.	No adverse impacts are expected to the cultural landscape due to enhanced protection for the most critical cultural landscape elements of the Dyea area. The landscape integrity is substantially maintained through preservation of archeological resources, construction of infrastructure consistent with the rehabilitation of the historic townsite, and vegetative management appropriate to the natural setting and to the character of the period of significance in keeping with the Secretary of the Interior Standards.
	<i>Overall moderate negative cumulative impact.</i>	<i>Overall moderate beneficial cumulative impact.</i>
<b>Cultural Resources</b>	Use of social trails adversely affect subsurface deposits and displaces artifacts and features on the ground surface. Data recovery would be prioritized based on immediate threats to the resources, although opportunities for original research are preserved. Cultural resources are left <i>in situ</i> with minimal vegetation control around key features.	No adverse impacts to cultural resources are expected as archaeological investigations in advance of ground disturbance will be carried out in accordance with Secretary of the Interior Standards. Relocation of social trails away from sensitive archaeologically rich features will further protect resources.
	<i>Overall moderate negative cumulative impact.</i>	<i>Overall moderate beneficial cumulative impact.</i>
<b>Ethnographic Resources</b>	Cemetery integrity may be adversely affected by natural processes including unabated river erosion, and the continuation of natural vegetative succession.	No adverse impacts to the cemetery are expected. Graves would be relocated to the new cemetery established during the 1970s. Relocation of the remaining graves would, in effect, restore the integrity of the original cemetery, albeit in a different location.
	<i>Overall moderate negative cumulative impact.</i>	<i>Overall moderate beneficial cumulative impact.</i>
<b>Soils</b>	Local disturbance to soils due to continued use of existing trails; potential increase in social trails.	Temporary local disturbance to soils due to construction and archaeological investigation activities; and, if employed, revegetation of old trails to reduce undesired use of social trails, then soils could be improved. Potential excavations to reinter graves that may be moved.
	<i>Overall negligible cumulative impact.</i>	<i>Overall minor cumulative impact.</i>
<b>Vegetation</b>	Local disturbance to vegetation due to continued use of existing trails; potential increase in social trails.	Local disturbance to vegetation due to construction and archaeological investigation activities, including tree removal and potential introduction of exotic invasive species; revegetation of old trails reduction in social trails. No long term impacts to vegetation are expected.
	<i>Overall negligible cumulative impact.</i>	<i>Overall minor cumulative impact.</i>

<b>Floodplains</b>	No direct or indirect impacts on 100-year floodplain. Continued erosion and flooding impacts to historic townsite.	No direct or indirect impacts on 100-year floodplain. Continued erosion and flooding impacts to historic townsite and some proposed facilities.
	<i>No cumulative impact</i>	<i>No cumulative impact</i>
<b>Wildlife</b>	Local disturbance to wildlife and habitat from visitation and NPS activities.	Potential local adverse effects to Boreal toad non-breeding habitat. Temporary disturbance from construction activity. Some changes to other wildlife habitat and behavior from tree removal and development.
	<i>Overall negligible cumulative impact</i>	<i>Overall minor cumulative impact.</i>
<b>Fish</b>	Minor increased trampling of stream bank habitat/sedimentation due to social trails.	Potential sedimentation from construction activities; reduction in social trails and associated stream bank trampling. Temporary and minor sedimentation into Nelson Slough during bridge replacement activities.
	<i>Overall minor cumulative impact.</i>	<i>Overall minor cumulative impact.</i>
<b>Visual Resources</b>	Historic viewsheds would remain substantially obliterated and altered by successional vegetative growth.	Selected vegetation removal along trails and within historic ruins would improve opportunity to experience historic viewsheds within the historic townsite consistent with the desired treatment of the cultural landscape.
	<i>Overall moderate impact.</i>	<i>Overall moderate beneficial impact.</i>
<b>Soundscape</b>	Localized disturbance to soundscape from visitors and other activities at or near current levels.	Human sound sources; temporary construction noise. Localized disturbance to soundscape from visitors and other activities at or near current levels.
	<i>Overall negligible cumulative impacts.</i>	<i>Overall minor cumulative impacts.</i>
<b>Visitor Experience</b>	Degrading visitor experiences due to outdated facilities, user conflicts, visitor safety issues, and unmet interpretive needs. Unfulfilled park mandate to provide appropriate treatment of the cultural landscape to be an authentic visitor experience rather than an informal recreational use.	Design and construction of facilities to address user conflicts and visitor safety issues and proper treatment of a unit within a <i>Historic</i> National Park. Additional visitor services available to better convey the Gold Rush story. Increased opportunity for interpretation through the addition of waysides and other interpretive media.
	<i>Overall moderate negative impact.</i>	<i>Overall moderate beneficial impact.</i>
<b>Socio-economics</b>	Potential for indirect impacts on local economy from perceived overcrowding by CUA tour participants.	Potential for managed growth of CUA activities while maintaining current level of crowding.
	<i>Overall minor cumulative impacts.</i>	<i>Overall negligible beneficial impact.</i>

# Purpose and Need for Action

## Purpose of the Plan

The National Park Service (NPS), Klondike Gold Rush National Historical Park (KLGON or the park) proposes to protect cultural and natural resources and improve visitor safety and experience with a new plan for the historic Dyea townsite and adjacent area (Map 1). In 1996 the NPS completed the *Klondike Gold Rush National Historical Park General Management Plan/Development Concept Plan* (GMP). The GMP provided general direction for NPS lands in Dyea for resource protection, visitor and interpretive facilities and park operations. The goal of this new *Dyea Area Plan and Environmental Assessment* is to use new information obtained since 1996 to provide specific guidance for implementing the general direction for Dyea provided in the 1996 GMP and to describe how the NPS would manage the Dyea Unit to protect and interpret the cultural landscape and historic resources and values within the dynamic natural environment. The Dyea Area Plan would guide management actions to address the issues listed below over the next 15-20 years.

This plan and environmental assessment (EA) analyzes the No Action and Proposed Action alternatives and their impacts on the environment. The EA has been prepared according to the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9).

## Need for the Plan

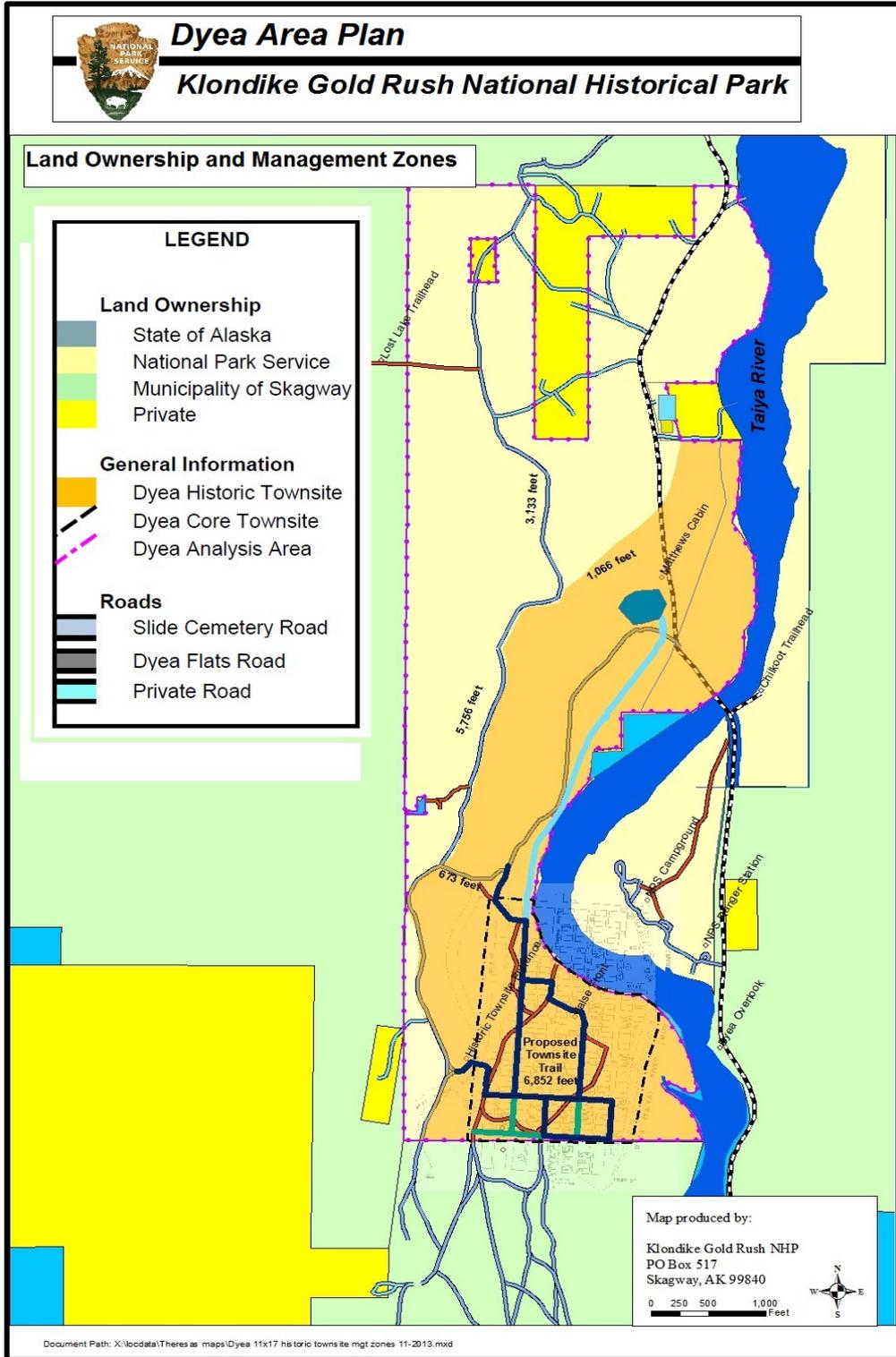
While the 1996 GMP includes general management guidance for Dyea, it does not provide sufficient guidance for the NPS to be proactive in protecting the cultural landscape and associated high quality visitor experiences. NPS research and public scoping during the past several years identified the following three issues:

### **1. New information indicates that cultural and natural resources need additional protection.**

#### *Cultural Resources*

There are two types of archaeological sites in Dyea: ruins and isolated features which are visible on the surface and subsurface archaeological deposits which are not. Isolated artifacts are also scattered throughout the Dyea area. Within the Dyea Historic Townsite, a need exists to protect cultural resources from both human and natural processes. The 2006 *Dyea Cultural Landscape Treatment Recommendations* (CLTR) and the 2013 *Dyea Cultural Landscape Report* (CLR)

# Map 1: Dyea Area Land Ownership and Management Zones



identify archeological sites within the Dyea landscape as its most important landscape characteristic. Much of what we know about the Dyea landscape comes from historical photographs and documentary research. Because so little of the physical historic fabric of Dyea remains above ground, these subsurface resources become extremely important in deciphering the historical landscape and confirming speculations based on other sources.

Existing roads and trails, both social and maintained, currently run directly over subsurface features and artifacts. The remains of a Gold Rush era town of around 8,000 inhabitants are exposed to impacts from vehicular traffic on the road, and pedestrian, horseback, and bicycle traffic. These archeological resources are further endangered by the movement of the Taiya River, which continues to erode the historic townsite. The river has been moving west since 1898 and has already destroyed an estimated one-half of the Dyea Historic Townsite.

Over at least the last 50 years, known graves from one of the town's cemeteries have been washed away by the Taiya River. The Town cemetery is located within the Dyea Core Historic Townsite and is sometimes erroneously referred to as the Native cemetery. The few remaining graves of the town cemetery occur on state-owned land and are within five meters of the riverbank; one of them is in the active riverbank. Historical documents show that the town cemetery contained both Native and non-Native graves. The river has been known to erode up to 100 feet into the bank in a single season. Family members continue to visit graves which were relocated in the mid-1970s. There is a need to consider the potential that additional graves would require relocation as the river continues to erode the bank.

Historical documents also describe a Native cemetery to the north within the Dyea Historic Townsite. While it appears that most of the town cemetery has already been washed away by the erosive action of the river, it is less clear that the Native cemetery has. There are several other recorded cemeteries in the Dyea area, but their locations are unknown.

The Matthews Cabin, which lies partially within the State of Alaska right-of-way for the Dyea Road, needs additional protection and the public would benefit from additional interpretation of this historic structure. The Kinney Toll Bridge (McDermott) Cabin, thought to be the historic Kinney Toll Bridge Cabin, was donated to the park in 2002. It is currently positioned on railroad ties on federal property in Dyea. The park has conducted a Value Analysis (VA) for the use of the building and it is now necessary to plan and implement the adaptive reuse and rehabilitation for the building to avoid slow decay at its current location.

### *Natural Resources*

Dyea is located in the Taiya River Valley, in the heart of a dynamic post-glacial landscape that is experiencing isostatic rebound. The valley contains unique flora and fauna located at the head of the Upper Lynn Canal, where subarctic, alpine, coastal, and boreal ecosystems converge. A need exists to preserve the natural resources and associated ecological processes for science, discovery and interpretation opportunities in the Dyea area.

## **2. The NPS proposes to be proactive in protecting high quality visitor and user experiences in Dyea and to take specific management actions not listed in the 1996 *General Management Plan*.**

### *Visitor Experience*

The Dyea Historic Townsite lacks a formal entrance area, making it difficult for visitors to obtain orientation and interpretive information. The intersection of the state maintained Dyea Road and the park maintained Dyea Flats roads provides little orientation or interpretive information to the visitor. The McDermott Cabin, thought to be the historic Kinney Toll Bridge cabin, is stabilized at the Kalvick property while awaiting final treatment and relocation to a new site. The cabin is currently accessible to the public only in the sense that it can be observed from the Dyea Road when driving by. The historic Matthews Cabin ruin stands along the Dyea Road without obvious connection to other historic resources in the Dyea area. Incorporation and interpretation of the Kinney Toll Bridge (McDermott) and Matthews Cabins as part of a formal entrance to the Historic Townsite would tie the structures to the larger cultural landscape and provide another interpretive opportunity for visitors.

Evidence of the historic town of Dyea is difficult to see because of a combination of the degradation of structures and ruins that are then covered or obscured with vegetation throughout the area. During the Gold Rush era a significant portion of the townsite was constructed within the grassy flats area of the estuary. Within the historic wooded areas, a significant amount of the vegetation was cleared. This clearing continued during the homestead era of the 1920s to 1940s. Over the past 70 years, the process of isostatic rebound (the uplift of land as glaciers recede) has allowed the advancement of the forest toward the inlet and has covered the original townsite with what is primarily a spruce forest. Visitors moving on irregularly patterned social trails within the Dyea Core Historic Townsite not only fail to delineate the street grid or otherwise orient themselves to the Gold Rush town landscape, but they also potentially expose significant archeological remains to disturbance, damage, or loss. More interpretation of the cultural landscape and existing visible archaeological features would help convey the Gold Rush story. A wayside exhibit plan needs to be developed and implemented to help visitors see how the Dyea Historic Townsite has changed over time. With enhanced understanding the public could gain a stronger sense of stewardship regarding the continued protection and preservation of Dyea's unique resources. Wayside exhibits could bring Dyea to life by using historical photographs and making direct connections with visitors. The park has many site-specific images that can be used to produce wayside exhibits.

A need exists to separate vehicle traffic from bicycle, pedestrian, and horse traffic to improve the aesthetic settings and safety conditions for visitors along the Dyea Flats Road. During the height of the visitor season, commercial tour operators lead groups of visitors on biking, hiking, and horseback tours and compete with each other, as well as with other tour operators who move visitors to the municipality owned Dyea Flats or to other privately owned commercial operations on the "Flats," for space along the Dyea Flats Road. The road is narrow and winding with reduced visibility around turns. The nature of the road causes these diverse activities to operate

in closer proximity than is prudent. Increasing numbers of visitors each year contribute to crowding and unsafe conditions on the road.

A need exists to evaluate existing non-motorized areas and use within the Dyea Core Historic Townsite. The park needs to determine whether it needs to close the Dyea Historic Townsite to both private and commercially guided horse traffic to prevent resource damage.

Transportation from Skagway to Dyea is limited in that visitors must drive their own vehicles, participate in a commercially guided tour that transports people to Dyea or pay for other transportation services. There is no public transportation to Dyea similar to the bus system available in Skagway.

### *Commercial Services*

NPS Management Policies 10.1 mandate commercial visitor services be authorized under concessions or commercial use authorizations, unless otherwise provided by law. Section 10.2, which describes policies for concessions operations, mandates commercial services planning in the form of a commercial services strategy and a subsequent commercial services plan. Policy guidance for Commercial Use Authorizations (CUA) is found at 10.3 and does not address commercial services planning. Although CUAs are issued for commercial services in the Dyea area, the existing commercial services plan embedded within the park's GMP (NPSa 1996) is in need of an update. The vast majority of visitors come to the Dyea area via a commercial service provider. Recent research into visitor experience suggests that most visitors to the Dyea area prefer the current level of visitation to increased numbers of visitors to the area (Manning 2013). The park believes it important to maintain the current balance of visitor opportunities and protection of natural and cultural resources and values. A commercial services plan based on current data is a critical mechanism for achieving this goal.

### **3. Improved maintenance of existing infrastructure along with the addition of a few new facilities would enhance visitor experience and efficiency of operations.**

#### *Infrastructure*

Maintenance equipment and operations for the Dyea area is based in the town of Skagway, approximately 8 miles away. Equipment must be hauled to Dyea and back to Skagway each time it is used. A maintenance support facility in the Dyea Unit of KLG0 is needed to store equipment and house maintenance operations for the Dyea area and the Chilkoot Trail. In addition, the Dyea unit has only a single point of access across the Taiya River bridge. In the past bridge access has been limited because of bridge improvements or other road enhancements in the vicinity, thereby affecting park related activities in the area.

Infrastructure improvements are needed to improve safety and add capacity. The Slide Cemetery, one of the most visited features within the Dyea area, lacks sufficient parking. The outhouse at that location is the only such facility that has not been replaced with a Vault toilet. Road safety

improvements and separation of uses on the Dyea Flats Road and Slide Cemetery Road are needed. Currently vehicles, bicycles, pedestrians and horse traffic share a single narrow and winding road with reduced visibility around turns. During the summer visitor season, commercial tour operators lead groups of visitors on biking, hiking and horseback tours while other tour operators travel through the area to the municipality-owned Dyea Flats. Road surface and line of sight improvements would help decrease user conflicts along the road. Diversion of bike and horse traffic onto separate trails would also decrease user conflicts.

The Chilkoot Trailhead area requires resurfacing of trails connecting trailhead facilities and additional seating and interpretive displays.

The most recent Housing Needs Assessment for Klondike Gold Rush (Hughes et al. 2013) identified a need for government employee housing units because of an insufficient supply on the market of rental housing for all employees. The Housing Needs Assessment calls for eight non-shared housing units and 10 shared housing bedrooms. Current seasonal employee housing in the Dyea area consists of small substandard units with separate bath, cooking and toilet facilities located at the campground area, and one small unit behind the Kalvick House. A new bunkhouse would replace these substandard housing units with a modern facility with a shared kitchen, bath and laundry facilities for seasonal staff who work in the Dyea and Chilkoot trail unit.

## **Park Purpose and Significance**

Klondike Gold Rush National Historical Park was established on June 30, 1976 (Public Law 94-323) “...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...”

On August 15, 1998, the Skagway Unit of the Klondike Gold Rush NHP joined with the Seattle Unit and British Columbia and Yukon Territory, Canada to become Klondike Gold Rush International Historical Park. Located in Southeast Alaska’s panhandle, 90 miles northwest of Juneau, Alaska, the park boundaries encompass 13,191 acres within three distinct units and overlap two National Historic Landmark (NHL) boundaries: The Skagway and White Pass NHL, formally designated on February 28, 1964, and the Chilkoot Trail and Dyea NHL, designated on June 16, 1978. On October 21, 1999 the Chilkoot Trail was designated as one of the 50 Millennium Legacy Trails in the United States.

The Foundation Statement (NPS 2009b) for Klondike Gold Rush National Historical Park states that this NPS unit, “... *Commemorates a great human drama that caught the attention of the world, and transformed the demographics, culture, and environment of Alaska and the Yukon. It preserves an integral link in a ribbon of sites that connects the places, events, and resources of the Gold Rush, extending across the international border from Seattle to Dawson and beyond.*” In addition, outstanding and diverse opportunities for visitors to retrace the steps of the gold rush stampede are provided. Visitors have the opportunity to “...*gain personal insight into the motivations, adversities, impacts and significance of the [gold rush] event.*” Klondike Gold

Rush National Historical Park “...fosters preservation of the resources within two National Historic Landmarks of two principal American boomtowns of the Klondike Gold Rush of 1897-1898, the most popular routes to the Klondike gold fields, and the most vivid reminders of the struggle and determination of the stampeders.” The park also provides for preservation and understanding of the unique flora and fauna of the Upper Lynn Canal.

The Dyea area lies within the Dyea and Chilkoot Trail unit of the park, which in turn, is encompassed by the Dyea and Chilkoot Trail National Historic Landmark designated in 1978. The historic townsite of Dyea, originally established as a seasonal Tlingit fishing camp and then later as the Healy and Wilson Trading Post, was the starting point for the famed Chilkoot Trail during the Klondike Gold Rush of 1898. The town quickly faded into obscurity after the White Pass and Yukon Railroad was established in Skagway.

Dyea is considered a fundamental resource, where “*archeological sites and structural ruins survive as evidence of the former Dyea boomtown.*” “*Visitors have the opportunity to visit historic ruins and see the in situ ghost town remnants as they exist today.*” (NPS 2009b). The remnants of Dyea are “maintained as a historic landscape, while being reclaimed through natural disintegration processes.” (NPS 2009b).

## **Management Goals**

### **General Vision**

The Dyea Area Plan proposes that the NPS be proactive in managing the Dyea area to protect and interpret the cultural landscape and historic resources and values within the dynamic natural environment.

### **Objectives**

The objectives of this plan are to:

- retain Dyea’s historic character while providing for appropriate adaptive uses;
- implement cultural resource protection strategies for increased levels of use over the past two decades;
- enhance visitor experiences by providing improved orientation, waysides, and interpretive exhibits;
- guide the level and type of commercial services in the Dyea area to preserve the highest quality visitor experiences possible; and
- enhance safety and operations by providing on site storage, improved housing, and upgraded infrastructure.

To meet these goals, the National Park Service would implement the highest priority recommended actions from the *Dyea Cultural Landscape Treatment Recommendations (CLTR)* (NPS 2006a) and its updated companion document, the *Cultural Landscape Report for the Dyea*

*Historic Townsite and Related Properties* (NPS 2013b)(CLR). The planning area includes all the lands recommended for rehabilitation in the CLR.

## **Applicable Laws, Regulations and Policies**

Management of Klondike Gold Rush National Historical Park (KLGOR) must be consistent with the laws, regulations, policies, and plans of the federal government. The extensive legal and policy framework that governs management of KLGOR is covered in the 1996 *General Management Plan* and in *Applicable Laws, Regulations, and Policies for Klondike Gold Rush National Historical Park* (NPS 2014). A few laws, policies, and regulations pertinent to the Dyea Area Plan, are summarized below.

### **General Management Plan, Development Concept Plan and Environmental Impact Statement; Klondike Gold Rush National Historical Park, Skagway, Alaska and Seattle, Washington, September 1996**

The GMP for KLGOR provides guidance for future management use throughout the park. It provides ways to accomplish the park development and operation in a manner that best serves the visitors while preserving the historic character and protecting cultural and natural resources. The GMP fulfills the mandate set forth in PL 94-323 (June 1976) to preserve the historic structures and trails of the Klondike Gold Rush of 1898. Included in the GMP, as Chapter 5, is the park's Commercial Services Plan, a portion of which is updated within this EA.

### **Native American Graves Protection and Repatriation Act (NAGPRA) 1990 25 USC 3001—3013; PL 101-601; 43 CFR 10**

This act sets forth government policy and procedures regarding the handling of Native American human remains and objects of cultural patrimony, including funerary objects. In the event that Native American remains are inadvertently discovered, the NPS is required to immediately halt all activity and notify the appropriate federally recognized tribes. Implementing regulations are found at 43 CFR 10 which describe the actions agencies are to take in order to protect graves and other items of cultural patrimony.

### **Consultation and Coordination with Indian Tribal Governments Executive Order No. 13175, November 6, 2000; 65 FR 67249 [25 USC 450]**

Department of Interior Policy on Consultation with Indian Tribes implements Executive Order 13175 and requires that the NPS consult with Tribes on a government to government basis when the agency proposes to take an action with Tribal implications. Congress also requires that the NPS consult with Alaska Native corporations on the same basis as Indian tribes under Executive

Order No. 13175. The 2012 Department of the Interior Policy on Consultation with ANCSA Corporations provides a framework for consulting with ANSCA Corporations.

### **National Park Service Concessions Management Improvement Act of 1998 16 USC 5951—5966; PL 105-391 (title IV)**

This act describes Congress' intent to authorize the development of public accommodations, facilities and services within park units only under carefully controlled safeguards against unregulated and indiscriminate use so that resources and values can be maintained. It requires that visitation will not unduly impair resources and values and that the development of public accommodations, facilities, and services within parks be limited to locations that are consistent to the highest practicable degree with the preservation and conservation of the resources and values of such units. It further describes that it is the policy of the Congress that the development of public accommodations, facilities, and services in units of the National Park System shall be limited to those accommodations, facilities, and services that (1) are necessary and appropriate for public use and enjoyment of the unit of the National Park System in which they are located; and (2) are consistent to the highest practicable degree with the preservation and conservation of the resources and values of the unit.

### **Director's Interim Guidelines on Commercial Use Authorizations (internal memorandum 2005)**

Director's Interim Guidelines on Commercial Use Authorizations describes the circumstances under which Regional Directors may delegate to the superintendents the authority to issue commercial use authorizations and further describes the circumstances under which CUAs may be permitted instead of concession contracts. It further provides the appropriate actions to take should the superintendent determine to limit the number of CUAs for a particular type of commercial service.

## **Relationship of Proposal to Other Planning Projects**

- *1996 Klondike Gold Rush National Historical Park Development Concept Plan/General Management Plan*: The GMP provides general direction for NPS lands in Dyea, including direction on visitor facilities such as roads, parking areas, trails, camping, and picnic areas, as well as direction on cultural and natural resource protection and park operations. This plan is intended to implement the GMP in the Dyea area and provide guidance for management on issues not addressed by the GMP.
- *Dyea Cultural Landscape Report (CLR) and Dyea Cultural Landscape Treatment Recommendations (CLTR)*: The CLTR was prepared in 2006. The 2013 CLR documented existing conditions and updated the treatment recommendations. The CLR recommends *rehabilitation*, or “the act or process of making possible a compatible use for a property though repair, alterations, and additions while preserving those portions or features which

convey its historical, cultural, or architectural values,” as the primary treatment for the historic landscape of Dyea. The CLR also recommends preservation of archeological resources. The proposed Dyea plan is intended to implement the park’s highest priority actions from the recommendations in the CLR over the next 15-20 years.

- *Secretary of the Interior Standards for Treatment of Historic Properties and Guidelines for the Treatment of Cultural Landscapes (NPS, Birnbaum and Peters 1996b)*: Because of its formal recognition as a cultural landscape that contributes to National Register and NHL status, any changes to the Dyea area must be consistent with these standards. The CLR provides cultural landscape treatment recommendations to meet the following objectives for the Dyea Historic Townsite: (1) adopt treatment strategies of rehabilitation and preservation to retain the townsite’s historic character while providing for appropriate adaptive new uses; and (2) integrate natural and cultural resource protection strategies to eliminate existing uses that are damaging or destructive and mitigate potential impacts of new construction on the existing resource environment.
- *Dyea Flats Land Management Plan*: The Municipality of Skagway has completed a Land Management Plan that describes their intention to “be a responsible steward of the resources and values of the Dyea Flats in perpetuity” with the recognition of the historic value as the “gateway” to the Klondike Gold Rush. It further states “It is the Municipality’s intent to keep the Dyea Flats in public ownership” and to “implement this Land Management Plan in cooperation with the National Park Service...” (City of Skagway 2006). This document is currently under review and a revised DRAFT was completed in 2010.

## **Impact Topics Selected for Detailed Analysis**

Issues and concerns with this project are grouped into distinct impact topics to aid in analyzing environmental consequences, which allows for a standardized comparison of alternatives based on the most relevant information. The impact topics were identified on the basis of federal laws, regulations, orders, NPS Management Policies (NPS 2006b), and on NPS staff knowledge of potentially affected resources. To focus the environmental assessment, the park selected specific impact topics for further analysis and eliminated others from evaluation. A brief rationale for selecting or dismissing each topic is provided below.

### **Cultural Landscape**

Throughout the Dyea Historic Townsite numerous historic ruins and features dot the landscape and provide evidence of a once thriving community. The proposed actions could affect the cultural landscape through the introduction of modern elements. Gravesites and graveyards, including the Town and Slide Cemeteries, are also considered to be cultural landscapes. The possible relocation of graves from state-owned land to the Slide Cemetery could affect cultural landscapes of the two cemeteries.

## **Cultural Resources**

Cultural resources include historic structures, ruins, and artifacts visible on the surface, and *in situ* archaeological resources that remain buried beneath the ground surface. In addition, three periods of habitation are important and represented within the archaeological record: prehistoric/proto-historic period that represent Tlingit control and use of the land prior to the gold rush, the Gold Rush Period, and the Homestead Period that followed the gold rush. The location of proposed infrastructure would be influenced by the remnants of the gold rush *in situ* features and material culture. Remaining gravesites in the Dyea Historic Townsite, which are situated on state-owned land, may be in danger of washing away by Taiya River erosion.

## **Soils and Vegetation**

The soils in Dyea are primarily silts and sands deposited through wind and wave action. The entire area contains remnant dunes that exhibit typical cross-bedding characteristics of aeolian deposits. The construction and improvements of roads, trails, and other visitor and park operation facilities could affect soils in the area.

## **Vegetation**

Dyea is an uplifted intertidal estuary. Because of the isostatic rebound (7 millimeters [mm] per year) and vegetative succession since the Gold Rush, a Sitka spruce dominated forest now occurs in much of the project area. Constructing roads, trails, and other visitor and park operation facilities could affect vegetation in the area. In addition there are certain planted trees that date to the period of significance that contribute to the integrity of the cultural landscape.

The NPS attempts to eradicate the thirty-three species of exotic plant species identified in the area. Another invasive species, white sweet clover (*Melilotus alba*), occurs in Skagway ten miles away, but not in the Dyea developed area. Construction activities and new travel routes could further spread existing invasive plants and introduce new invasive plants, including white sweet clover.

## **Floodplains**

The Taiya River flows through the Dyea area. The Dyea Historic Townsite is within the regulatory 100-year floodplain. It has been subject to sudden catastrophic geohazard related flooding greater than a 100-year high water event. The Taiya River is entrenching and meandering below the Taiya River Bridge, partially in response to the bank hardening with the installation of the Taiya River Bridge in the late 1940s. Some portions of the river bank outside the NPS boundary have been hardened to protect the Dyea Road leading to Dyea. Private landowners at the northern end of Dyea have also stabilized the bank. These geologic and hydrologic events may influence where infrastructure is placed within the park.

## **Wildlife**

Many species of resident and migratory songbirds, raptors, and water-birds can be observed in Dyea or on the surrounding waters. Both black and grizzly bears are commonly observed in Dyea. Boreal toads and their associated breeding ponds occur in and near the project area. Several species of nesting resident and migratory birds, black and grizzly bears, Boreal toad and other wildlife species could be disturbed or displaced by road and trail construction, new infrastructure, or changes in visitation patterns. A bald eagle nest is situated within the Dyea Historic Townsite. Nesting eagles could be disturbed by construction activity or increased visitor traffic.

## **Fish**

The Taiya River and its tributaries, West Creek and the Nelson Slough, are partially within the Dyea planning area. The lower Taiya River and its tributaries support three of the five species of Pacific salmon: chum, coho and pink salmon, as well as Dolly Varden, steelhead trout and Eulachon. Nelson Slough is an anadromous fish stream supporting coho salmon and Dolly Varden rearing habitat. Construction activities and any new crossings have the potential to affect fish in these two water bodies.

## **Visual Resources**

Both the natural and cultural viewsheds are important resources as described in the NHL designation. These viewsheds give the visitor a sense of place and orientation to the historic landscape. Natural and cultural viewsheds could be affected by trail construction, new infrastructure and changes in visitation patterns.

## **Soundscape**

The current soundscape consists of natural sounds such as birds, wind, river flow, and human induced sounds such as talking, barking dogs, motor vehicles and air traffic. Past historic sounds would have included similar noises with the exception of motor vehicles. Short term impacts to the soundscape would be expected during construction activities. Long term impacts to the soundscape may be evident depending upon levels of use.

## **Visitor Experience**

Visitors to Dyea have the opportunity to hike on maintained and social trails as an independent activity or to participate in guided commercially operated visitor activities that include horseback or bicycle riding, hiking, and river rafting trips or NPS guided walking tours. The majority of Dyea visitors take advantage of commercially operated visitor activities that are sold as a shore

excursion from their cruise ship. Visitors during the off season are predominantly locals and Yukon Territory, Canada residents who hike the trails at Dyea, ride horses, and/or use the campground. Visitor use in Dyea could be affected by changes in the range of visitor activities available and by the types and locations of trails, infrastructure, and interpretive facilities. Short term effects could occur during construction in the visitor season.

### **Socioeconomics**

Commercial Use Operators (CUAs) currently provide visitor services in the Dyea area. Changes in NPS permitting of commercial services could affect the number of business opportunities and quality of visitor experience, which in turn could affect area socioeconomics.

## **Impact Topics Dismissed from Detailed Analysis**

### **Wetlands**

Seven areas of wetlands are located within the project area, but none of the proposed construction activities would occur within wetlands and their hydrology is unlikely to be affected. Wetland hydrology in the area is driven by groundwater which is subsequently tied to the water levels in the Taiya River. The soils in the area are highly permeable and water either does not run off or pools in areas that have not been impacted by road or trail construction. Because of the highly permeable nature of the soils in the area, improving and constructing roads and trails is unlikely to cause any significant changes to the area's hydrology.

### **River and Riparian Ecology**

Developmental projects would not be expected to influence or change the river hydrology and geomorphology, or river functions. Projects would also not affect river or riparian ecology.

### **Threatened and Endangered Species**

The Endangered Species Act requires an analysis of impacts on all federally listed threatened and endangered species. In compliance with Section 7 of the Act, the U.S. Fish and Wildlife Service (USFWS) was informally consulted to determine whether threatened or endangered species were known to occur in the Dyea area. No federally designated threatened or endangered species are known to occur within the Dyea area.

### **Night Sky**

Night sky values in Dyea are primarily enjoyed during the off-season because of long summer days in Alaska. The proposed action would not add more light sources to the Dyea Core Historic

Townsite area or otherwise affect the ability of visitors and residents to enjoy the darkness of the night sky during spring, fall, and winter. The installation of a maintenance support facility and additional park housing would be guided by existing park regulations and policies regarding night skies and would not contribute any impacts.

### **Wilderness Resource Values**

Klondike Gold Rush National Historical Park does not contain designated or eligible wilderness.

### **Subsistence Use**

Subsistence uses are not allowed on federal land in the Dyea area of Klondike Gold Rush National Historical Park, and no adverse effects to subsistence activities would occur. (See Alaska National Interest Lands Conservation Act [ANILCA] 810 Evaluation in Appendix A). In addition, access to subsistence use areas on adjoining state and municipal property would not be hindered by any actions proposed in the plan.

### **Low Income or Minority Populations (as per Executive Order 12898, Environmental Justice)**

There are no known actions that would affect low-income or minority populations. Description of Alternatives

## **Description of the Alternatives**

### **Introduction**

This section describes the alternatives for management actions to improve visitor experience and infrastructure and protect cultural and natural resources in the Dyea Historic Townsite and surrounding area. It includes a description of the No Action alternative and one action alternative. It also includes actions that have been considered but dismissed from further analysis.

Alternative components were developed during project scoping with the public and NPS staff from 2006-2013. General management guidelines for Dyea were prescribed by the *General Management Plan and Development Concept Plan* (NPS 1996a), and many specific proposals were derived from the *Dyea Cultural Landscape Treatment Recommendations* (NPS 2006a). Three public meetings, two public comment periods, and numerous internal scoping meetings, most recently in October 2012, were conducted and the documentation has been placed in the administrative record.

### **Actions Common to Both Alternatives**

## **Cultural and Natural Resource Protection**

The Dyea Core Historic Townsite would be closed to horses permanently in regulation, pursuant to 43 CRF 36.11(h), to protect irreplaceable cultural landscape features and artifacts and to allow for construction and maintenance of accessible trails with a fine gravel surface. Non-commercial horse traffic would continue to be unrestricted outside the Dyea Core Historic Townsite. Commercial horse traffic would continue to be restricted to an alternate route designated for commercial and non-commercial horse use outside the Dyea Core Historic Townsite.

The park would continue to allow snowmobile traffic in the Dyea area. Use of snowmobiles would be permitted in the Dyea Core Historic Townsite when the Superintendent determines there to be adequate snow cover to protect resources. Off-Road Vehicle (ORV) access is not permitted in the Dyea area pursuant to Executive Order 11644.

Under both alternatives, the park would continue joint maintenance and planning with the Municipality of Skagway Borough, the State of Alaska, local Tribal offices, and other interested parties. The park would continue to consult with Tribal and state governments on the potential relocation of graves currently located on state lands within the boundaries of the park.

## **Visitor Experience**

The NPS would continue to pursue opportunities for alternative transportation to Dyea from Skagway.

The NPS would continue to maintain Lost Lake Trail access and the Slide Cemetery fencing and grave markers in cooperation with the Municipality of Skagway Borough. The NPS would design and implement wayside exhibits using the park's graphics collection to help visitors visualize the size and layout of the former town. The wayside exhibits would be located to place historic photos close to the point where they were taken. The wayside exhibits would be implemented in conjunction with the Dyea Core Historic Townsite trail development and would follow, to the extent practicable, the recommendations of the CLR.

## **Infrastructure Improvements**

The Dyea Ranger Station located at the NPS Dyea Campground would continue to provide a kiosk with visitor orientation information and an emergency phone.

## **Alternative 1: No Action**

Under the No Action alternative, NPS lands in Dyea would continue to be managed according to direction in the 1996 GMP and the Superintendent's Compendium. Any proposed management actions would be subject to individual environmental compliance (NEPA and NHPA Section 106) procedures and would be implemented on a case-by-case basis.

In addition to the actions common to all alternatives, the following existing conditions and facilities would continue under the Action Alternative. This alternative provides a baseline for evaluating the changes and impacts of the Action Alternative.

### **Cultural and Natural Resource Protection**

- The NPS would rehabilitate the Kinney Toll Bridge (McDermott) Cabin and explore suitable use and relocation in a separate planning document.
- Impacts to the historic ruins and features from visitor use would continue to be evaluated and mitigated on a case by case basis.
- Social and maintained trails would continue to be used by the public, potentially damaging sensitive archaeological remains.
- The park would continue evaluating conditions at the gravesites and communicate with interested stakeholders, but would evaluate any actions relating to the relocation of graves in a separate planning document.

### **Visitor Experience**

#### *Visitor Use*

- Access to the Dyea Historic Townsite would continue with no discernible "formal" entrance into the Historic Townsite.
- No new trails would be developed. Social trails may or may not be managed. Bicycles and hikers would continue to use the same trails. Bicycles would continue to share the road in Dyea with automobiles.
- Facilities at the Chilkoot Trailhead would remain as they are, with no improved access between the long term parking and trailhead. No new interpretive displays would be added, and no new benches would be installed.
- Visitors would continue to use a mix of social and maintained trails that do not relate to the Dyea Historic Townsite grid.

### *Commercial Services*

- Commercial services would be managed according to the combined guidance of the 1996 GMP and the clarifications and update in the Dyea Area Plan

### **Infrastructure Improvements**

- The park would continue to maintain the Dyea Flats and Slide Cemetery Road, grading them annually and incrementally improving the roads as time and funding allow.
- The Slide Cemetery would continue to be managed as is, with no improvements to the road or parking facilities.
- Maintenance equipment would continue to be stored in Skagway and transported to Dyea as needed.
- The park would replace substandard park housing in Dyea with a new bunkhouse but would complete NEPA review in a separate planning document.

## **Alternative 2: Proposed Action**

### **Improve visitor experience and park operations and protect cultural and natural resources in Dyea**

Under Alternative 2, the park would adopt the Dyea Area Plan. NPS lands in Dyea would continue to be managed according to direction in the 1996 *KLGO GMP/Development Concept Plan* and the Superintendent's Compendium (NPS 2013a) and high priority actions would be implemented as proposed in the CLTR (NPS 2006a) and the CLR (NPS 2013b). In addition to the actions common to both alternatives, this alternative proposes the following:

#### **Management Zoning**

In keeping with the *Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (NPS, Birnbaum and Peters 1996b), the 2013 *Cultural Landscape Report* proposed that development within the Dyea area depend on the levels of impacts that could be sustained without adversely affecting either the cultural landscape or the cultural resources within different areas of Dyea. The CLTR used the term "management zones" to differentiate these areas and described three levels of development that would be allowed (Map 1). The "Dyea Developed Area" refers to all of the Dyea area and includes federally owned lands on the east side of the Taiya River. The "Dyea Historic Townsite" refers to the full known extent of the Dyea Historic Townsite from its historic southernmost to northernmost boundaries, but generally does not include lands east of the western bank of the Taiya River. The "Dyea Core Historic Townsite" is defined to be the core "street grid" of the historic downtown business area located between the former 1st and 6<sup>th</sup> Avenues and River and West Streets. Development within the "Dyea Core Historic Townsite"

would be recommended to be the most restrictive, while more allowed uses would be recommended in the “Dyea Developed Area.”

### **Cultural and Natural Resource Protection**

The Kinney Toll Bridge (McDermott) Cabin would be moved to the intersection of Dyea Road and Dyea Flats Road, restored, and adaptively reused for an interpretive wayside and orientation node for the Dyea Historic Townsite. This would constitute the new ‘formal’ entrance into the historic townsite (Map 2).

The cultural landscape would be managed according to the Secretary of the Interior Standards using specific recommendations related to vegetation, trail development, and visual character found in the 2013 *Cultural Landscape Report*.

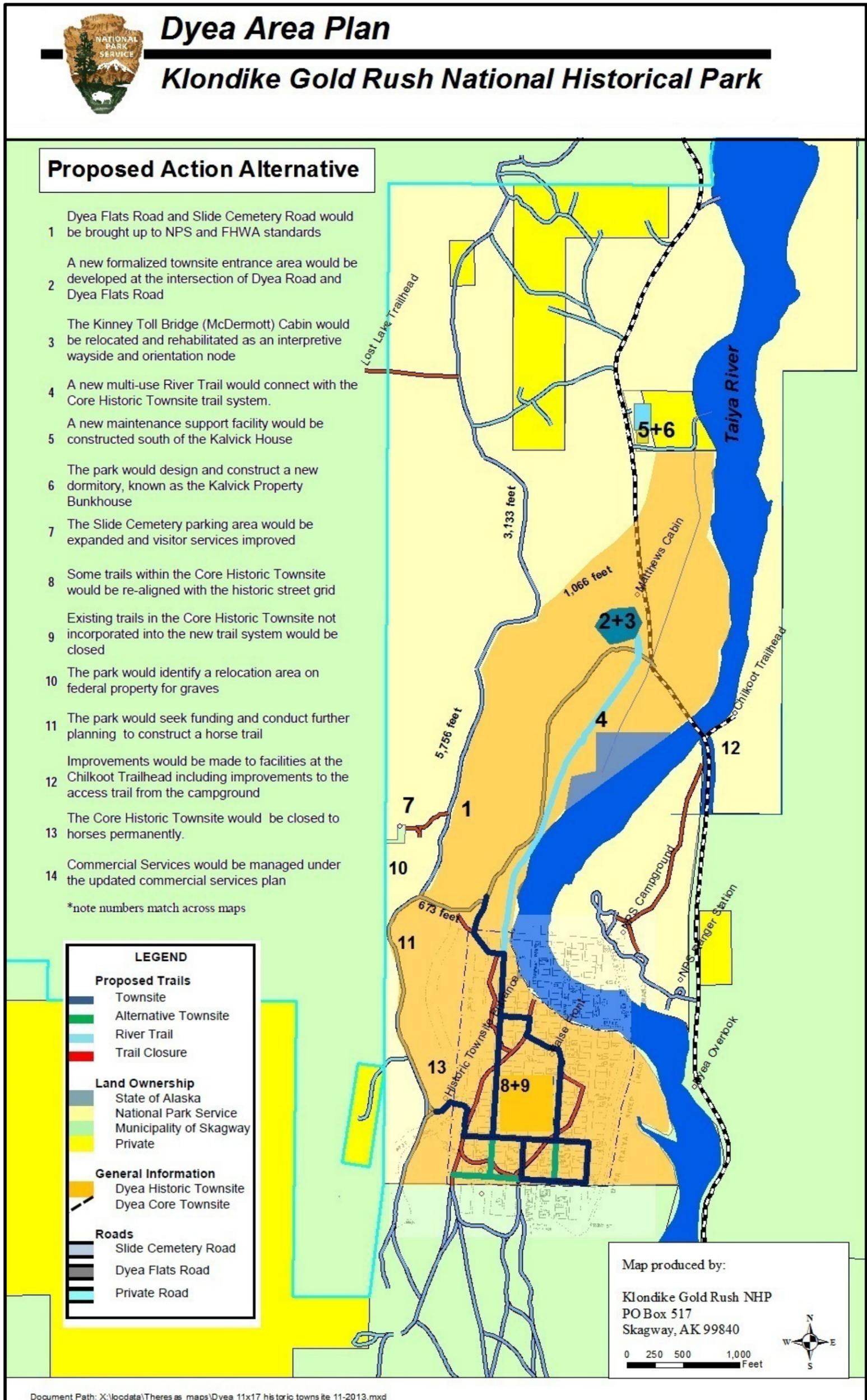
The park would identify a relocation area on federal property for graves in the event that it becomes necessary to relocate them away from the river. Any relocation activity would be carried out with appropriate landowners and stakeholders including the state, tribes, and family members. The Relocated Cemetery near the Slide Cemetery is proposed to be expanded to relocate the remaining graves from the Town Cemetery should it become necessary to do so.

If any Native American graves are involved, the park would follow procedures outlined in the Native American Graves Protection and Repatriation Act as well as appropriate tribal consultation laws, regulations and policies.

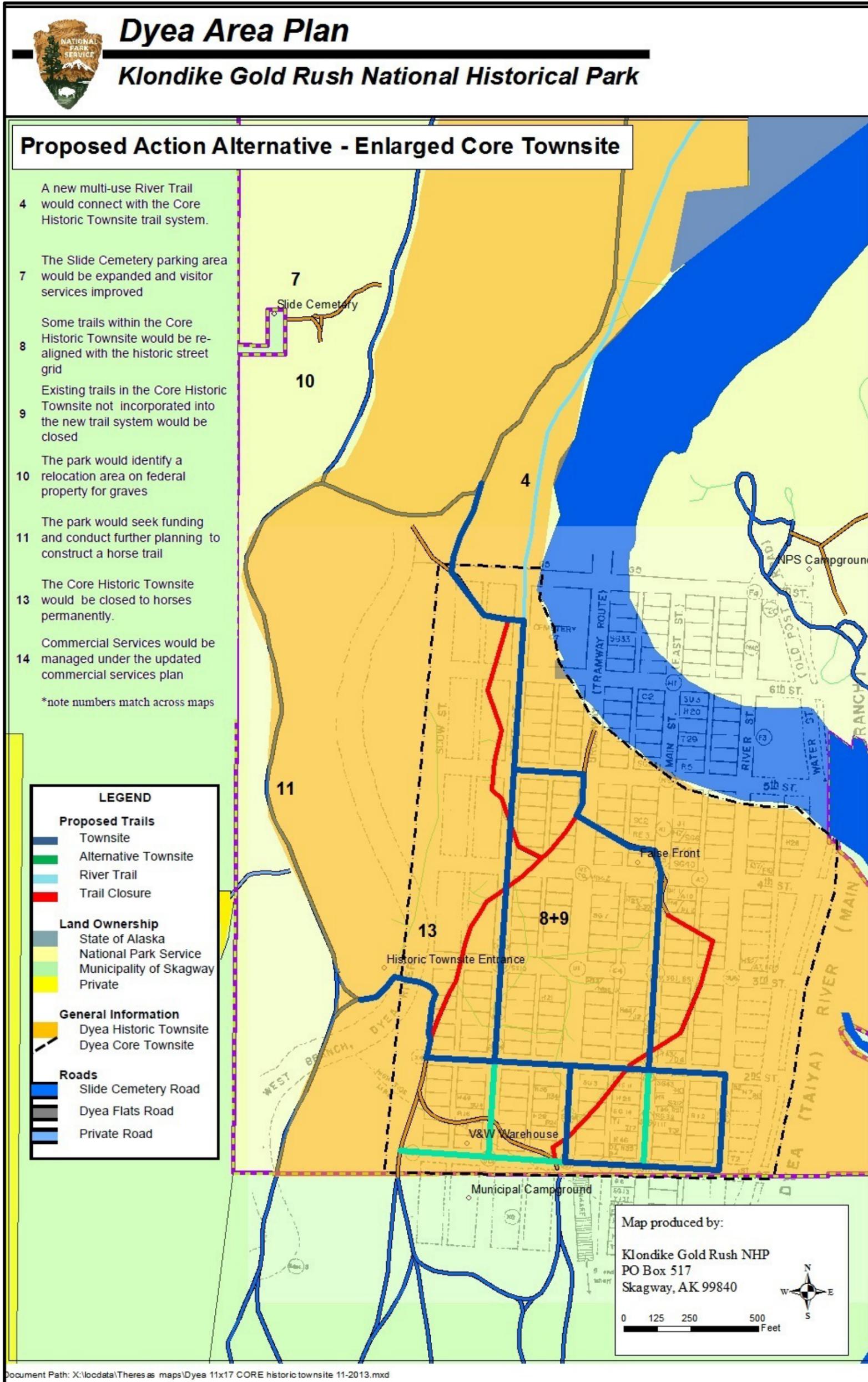
The park would continue to monitor the bank of the Taiya River to determine whether any graves are at risk. As graves become endangered by Taiya River erosion, the park would immediately notify all appropriate parties including the state, potential relatives, tribal governments, and the Alaska State Troopers. Should grave relocation be required, the park would work with the appropriate parties in acquiring the necessary permits, implementing public notification, and assisting in relocation onto federal property in the proposed re-interment location.

Any re-interment would be completed during the early fall, after the visitor season, to avoid attention in this sensitive task, unless conditions are such that it is unavoidable to do it at another time. Local interested persons would be permitted to prepare and carry out appropriate graveside activities during this event. This project would not be expected to produce any scientific data for study, nor generate any artifact collections to be curated, unless specifically requested by the tribes in the case of Native Alaskan interments.

Map 2: Proposed Action Alternatives for Dyea Area



Map 3: Proposed Action Alternatives for Dyea Core Historic Townsite



## Visitor Experience

A new formalized historic townsite entrance area would be developed at the intersection of Dyea Road and Dyea Flats Road. The entrance area would include parking for up to 5 vehicles (including parking for the River Trail to the core historic townsite), public restroom facilities (two vault toilets) and small scale features such as benches and wayfinding signs. The entrance area would include the relocated and rehabilitated Kinney Toll Bridge (McDermott) Cabin as an interpretive exhibit and orientation facility without NPS staffing. The Matthews Cabin would be interpreted as part of this site development.

A new multiuse River Trail would connect the relocated Kinney Toll Bridge (McDermott) Cabin with the Dyea Core Historic Townsite trail system. This separate hike/bike trail would be developed by choosing a route that does not adversely affect cultural resources. It would add approximately one mile of new trail.

Improvements would be made to facilities at the Chilkoot Trailhead. Trail surfaces at the Chilkoot Trailhead connecting trailhead facilities would be capped with gravel. Benches and additional interpretive displays would be incorporated into the trailhead facilities. The trail connecting the long term parking and the campground would be improved through brushing, resurfacing and a 500 foot reroute.

A set of trails for hiking and to accommodate some bicycle traffic would be developed within the Dyea Core Historic Townsite. Trails would follow some segments of the original street grid in keeping with the Secretary of Interior Standards and the Cultural Landscape Treatment Plan recommendations. An approximate 1,000-foot loop trail on historic streets through the Dyea Core Historic Townsite both within the tree canopy and on the open grassy plain would be constructed. Selected street segments would be connected using a street centerline trail alignment that would minimize vegetation removal and convey a sense of place. The selected historic street segments could be cleared up to 12 feet, with appropriate understory clearance along the trail edges to convey the sense of place on the historic street grid. The trail system would link with other trails in the Dyea Historic Townsite as well as with trails leading onto the municipality-owned “flats” area. Street segments chosen for use would provide maximum opportunities for interpretation and protection of archaeological resources.

A combination of trails and interpretive markers or GPS-based information would define and interpret the historic street grid at Dyea. “Gathering places” would be created at appropriate trail locations in the Dyea Core Historic Townsite to control social trail development and reduce crowding on the trail in areas where tour groups stop for presentations.

A phased approach would be used to align the trail with the historic street grids where possible while still using some trails that are not on the historic grid. As time and funding allow, trails would eventually be moved to the historic street grid. Trails that could not be incorporated into the new trail system would be closed and vegetation allowed to re-occupy the area (about 3,420 feet). Active revegetation may be used provided adverse impacts to subsurface archaeological deposits would not occur.

The park would work with partners to develop a horse trail to the Dyea Flats on the west side of the current Dyea Flats Road. The park would seek municipal support for the necessary connecting route on the municipal property, including financial support for construction and long term maintenance.

If a sustainable agreement could be achieved, and fund sources identified between the municipality or other partners and the park, the park would assist with further planning, design, and compliance to construct a horse trail. This trail would be designed to avoid damage to wetlands and streams and would be open to commercial and non-commercial use.

### **Commercial Services**

A Commercial Services Plan (CSP) was completed as part of the *General Management Plan and Development Concept Plan/Environmental Impact Statement* (NPS1996a, Chapter 5), which went through extensive public review prior to being approved. The CSP is in effect until amended or revised (5.1). The NPS proposes to continue managing commercial services based on the following objectives listed in the 1996 GMP:

1. To protect the natural and cultural resources of the park
2. To provide opportunities for visitor appreciation of the area
3. To allow some types of appropriate recreational activities
4. To allow land assignments for commercial visitor service activities on NPS-managed lands only after all alternatives for providing services on non-NPS managed land have been exhausted
5. To limit the number of commercial authorizations when determined necessary by management and
6. To control the numbers and types of commercial visitor services and potential conflicts among users.

The NPS proposes to amend only the Dyea portion of the existing *Commercial Services Plan*. Changes reflected in the current plan and EA would be in effect until amended or revised.

In reviewing the park's enabling legislation, subsequent legislation, past uses and trends, the 1996 *Commercial Services Plan*, and several recent social science studies relating to the Dyea area and visitor experience, the NPS concluded that significant changes to the frequency and types of services currently offered in Dyea are not warranted.

The NPS proposes to maintain the high quality experience currently enjoyed by both commercially-guided and non-guided visitors to the Dyea area and to protect the cultural and natural resources and values in the area based on new information obtained through studies during the past several seasons. Specifically, the NPS would limit commercial services to the numbers that visitors identified between the "preferred" and "acceptable" ranges in recent studies (Table 3).

**Table 3: Proposed Commercial Services based on Visitor Experience Desired Conditions**

Proposed Commercial Services based on Visitor Experience Desired Conditions													
Type of Guided Tour Activity	Visitor Experience Data				Current - in 1996 GMP				Number of CUAs Operating in 2013	PROPOSED (See footnotes)			
	Notes regarding preferences and levels of acceptability	Preferred # of PEOPLE within sight	Acceptable # PEOPLE within sight	Threshold for additional management action	Group Size - inclusive of guide(s)	Total # of authorized operators	Frequency of service (per day)	Daily Total of GROUPS		Type of Guided Tour Activity	Group Size - inclusive of guide(s)	Daily Total of GROUPS (See footnote 3) - with no two groups in the same location at the same time	Authorized hours of daily operation <i>within CORE Historic Townsite</i> (no restrictions outside of CORE townsite)
Auto/Bus (transportation which includes hiking within park)		no data	no data	n/a	25	6	2	12	4	Auto/Bus (Walking tours with transportation provided to site by operator)	25	12	Between 9a and 4p
Bicycle	There were differences in the numbers preferred depending on location: False Front, Warehouse, Nelson Slough.	4.7-5.8	12.4-12.9	10.9-13.7	12	4	2	8	1	Bicycle	12	8	Between 9a and 4p
Horseback riding		7.5	16.6	n/a	12	1	4	4	1	Horseback riding	12	4	n/a
Water (Hike/Float)		5.2-5.6 using independent tour #s	12.6-15.1	10.2-14.2	12	3	2	6	2	Water (Hike/Float) See footnote 1	12	6	n/a

<sup>1</sup> The Hike/Float activities are a combination activity with only the hiking portion being permitted through NPS land. The park would manage only the hiking activities to meet the needs and expectations of visitors. The Visitor Experience Data for the hike portion of this activity is listed.

<sup>2</sup> Authorized total number of groups per day with no two groups within the same activity area operating concurrently. For example: no two or more bicycle tours at the same place at the same time.

<sup>3</sup> The Commercial Services Plan included with the 1996 *General Management Plan* describes two categories of CUAs: Guided Tours and Transportation Activities. Both categories included Auto/Bus tours and a hiking/walking tour (“Bushwhack” tour under Transportation Activities and “Hiking/Walking” under the Guided Tours section). The Transportation Activities section in the current plan has been eliminated because it is redundant to the activities described under the Guided Tours section.

Information from recent visitor use studies indicates that if the NPS manages to protect high quality visitor experiences, standards for cultural and natural resource protection would be met as well. Resource indicators and standards are addressed in the cultural landscape treatment recommendations for which this plan and EA is being prepared (NPS 2006a).

To continue protecting park resources and values, CUA operators would continue to be required to follow established trails and roadways and to follow all park specific provisions as spelled out in each CUA. These stipulations include restrictions on food use and feeding wildlife, advising clients regarding protection of natural and cultural resources and use of fires within provided fire rings, and any client safety related equipment and practices.

Based on recent studies and follow up analyses, the NPS has determined that the existing levels of CUA services provided, including number of trips, user days and party size are compatible with the park's intent to manage the visitor experience in the "preferred" to "acceptable" range and that changes are not needed. Current use patterns also allow an opportunity for independent (non-guided) travelers to visit the townsite without the possibility of encountering large groups of people either early in the morning or in late afternoon. Table 3 describes operating hours for CUAs within the Dyea Historic Townsite area.

This plan does not seek to limit CUAs that are already in place. Additional CUAs may be considered as long as the total authorized number of groups per day is not exceeded.

The two categories of commercial activities, guided tours and transportation, originate and terminate outside of the park boundary and/or on privately owned property within the park.

## **Guided Tours**

### *Auto/Bus*

Auto/Bus tours are primarily vehicular tours that include a hiking/walking tour within the historic townsite. Commercial Auto/Bus tours would continue to be authorized within the Dyea Historic Townsite with the hiking/walking tours authorized within the Dyea Core Historic Town site. There would be no changes in the group size, nor the total number of groups authorized per day. Details of authorized group size and daily total of groups are described in Table 4.

Auto/Bus tours that are solely vehicular based tours without a hiking/walking component would continue to be operated without group size limits or limits on total tour numbers under this plan. The park does not manage vehicular activities that transit through the park on the federally owned Dyea Flats road to municipal lands.

### *Bicycle*

Commercial bicycle tours would continue to be authorized within the Dyea Historic Townsite on the Dyea Flats Road until a new river trail could be constructed, and within the Dyea Core Historic Townsite on maintained trails. There would be no change in group size, nor the number of services offered. Details of authorized group size and daily total of groups are described in Table 3.

### *Horseback*

Commercial horseback tours would continue to be authorized on Slide Cemetery and Dyea Flats road until a horse trail could be constructed. Horseback use within the Dyea Core Historic Townsite would be closed to all horse use, including commercial horseback tours, by regulation to protect historic resources and values. Details of authorized group size and daily total of groups are described in Table 3.

### *Water*

Hike/Float tours would continue to be authorized. These visitor services fall under the CUA system because the hiking portion of the activity occurs on the Chilkoot Trail on NPS owned property. There would be no change in authorized group size or daily total of groups. Hike/Float operators would be required to follow the same principles as other CUA permitted activities and not have two or more tours in the same place at the same time on the Chilkoot Trail. This is important because of both real and perceived crowding on the lower trail.

### **Infrastructure Improvements**

Permanent park operations facilities would continue to be located at the northern end of Dyea at the northernmost reaches of the Dyea Historic Townsite outside the known street grid, in an area that is already affected by modern development. All constructed facilities would be designed to fit the character of the cultural landscape.

The existing Dyea Flats Road and a portion of the Slide Cemetery Road would be brought up to NPS and Federal Highways standards by correcting deficiencies such as drainage problems and sightline obstructions. Sightlines would be maintained by clearing vegetation. Portions of the Dyea Flats Road may be realigned or moved to avoid damage from river erosion if the Taiya River continues to move to the west.

The Slide Cemetery parking area would be expanded to include parking spaces for two additional vehicles, for a total of five vehicles, and one Vault Toilet. The Vault Toilet would be located near the outside edge of the expanded parking area to keep the project area compact and to reduce the total footprint. The Vault Toilet would replace the existing outhouse. The parking area would be re-contoured and gravel would be added to raise the level of the parking surface. This would provide a smooth driving surface and allow for increased drainage away from the parking area.

The aging Kalvick garage located south of the Kalvick house would be replaced by a maintenance support facility on federally owned property north of the proposed replacement bunkhouse (Map 1). The primary purpose of this facility would be to support park operations in Dyea and on the Chilkoot Trail. The maintenance storage building (approximately 30 feet x 40 feet) would include two garage doors and is meant to house general and vehicle storage. A fenced yard, approximately 15,000 square feet, surrounding the building would provide exterior workspace, storage of road and trail construction material (short and long term), and ancillary uses. The maintenance support facility would be designed to be in character with the historic landscape and exterior lighting designed to minimize impacts to night skies. This area was

determined not eligible for the National Register of Historic Places and is located within an already disturbed area of the park.

The park would replace substandard park housing in Dyea with a new bunkhouse for seasonal park employees on park land adjacent to other park housing identified in the GMP as appropriate for support facilities. The single-story, wood-frame dormitory would have seven single-occupancy bedrooms, two full bathrooms, a kitchen, common room, and laundry facility. The structure would be built on park land adjacent to other park housing identified in the GMP as appropriate for support facilities, and it would be elevated above the immediate floodplain.

## **Mitigating Measures**

### **Hydrology**

The park would design management actions to minimize impacts to existing drainage patterns throughout the site. This can be done by consulting with the Alaska Region hydrologist before implementing new projects.

### **Migratory Birds**

Under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703), it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" includes by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof. In accordance with the USFWS timing guidelines recommended for the protection of migratory birds; vegetation clearing, site preparation, or other construction activities that may result in the destruction of active bird nests would not be undertaken during the nesting season, April 15 through July 15. If any active nest is encountered at any time, it would be protected from destruction. "Active" is indicated by intact eggs, live chicks, or presence of an adult on the nest. Eggs, chicks, or adults of wild birds would not be destroyed.

### **Wildlife**

To minimize potential impacts to Boreal (or "Western") toad metamorphs, construction activities would not occur within 200 yards of identified breeding ponds while young toads are dispersing. According to ongoing research that began in 2004 and has most recently been summarized in 2013, the first emergence of metamorphs is within the third week of July. Metamorphs and toads are detected at all sites by the third week in August and continue to be seen through the research period into September (NPS, Welfelt 2013c).

To minimize impacts to bald eagles nesting in the area, the park would follow the USFWS National Bald Eagle Management Guidelines recommendations for avoiding disturbances at nest sites, including we recommend (1) keeping a distance between the activity and the nest (distance buffers), (2) maintaining forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding construction activities during the breeding season.

## **Cultural Resources**

As required by the National Historic Preservation Act (NHPA), the park would complete an analysis using multiple criteria to determine appropriate treatment of the cultural landscape, including historic research, and perform archaeological investigations to clarify where archaeological remains occur and to identify any evidence of historic street traces. Historic streets that would be rehabilitated as modern day trails would be sited in locations where the least damage would occur to remaining *in situ* archaeological sites and features. Trails would be sited in areas where *in situ* remains of historic buildings and features can be viewed and appreciated by visitors. Any significant subsurface discoveries would be evaluated for eligibility to the National Register of Historic Places. The park would consult with the State Historic Preservation Officer (SHPO) as early as possible in the planning process for this undertaking. The Secretary of the Interior Standards requires design management, construction oversight, and facility completion acceptance by a historic landscape architect. Also an NPS cultural resource specialist would be present throughout the installation of facilities to ensure that important cultural resources are not affected. Should unknown resources be uncovered during the implementation of ground disturbing activities within the project area, work would be stopped in the discovery area, and the park would consult according to 36 CFR 800.11 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1992. Any artifacts recovered from park property would be accessioned, cataloged, preserved, and stored in the park's designated curatorial facilities in compliance with the DOI Museum Management Plan.

## **Invasive Plant Species**

The park would require best management practices with regards to cleaning construction equipment and other vehicles to minimize the introduction of exotic invasive plant species as part of the implementation of this plan.

Aggressive exotic plant control, and revegetation of areas disturbed (but unoccupied by buildings roads or trails) would be required for at least three years following implementation of any of these construction components within the Action Alternative. Beyond three years, exotic plant control would occur through ongoing maintenance of the designed and developed cultural landscape vegetation. After full implementation of this plan, the park would continue to require best management practices with regards to cleaning construction equipment and other vehicles to minimize the introduction of exotic invasive plant species.

## **Visual Resources**

Selective clearing and screening would be used to minimize visual impacts. Existing vegetation would be preserved consistent with the cultural landscape. Selective clearing may be used to create viewsheds within the Dyea Core Historic Townsite that would provide visitors with a sense of place consistent with the historic street grid. Other views from within and into Dyea would be managed to limit intrusive development while preserving the natural vistas that would have been evident during the Gold Rush period.

## **Night Skies**

The proposed maintenance support facility and bunkhouse at the Kalvick property are the only sites that would require exterior lighting. The preferred approved lighting method would use down lights which provide lighting at the ground level and do not affect the night skies.

## **Ethnographic Resources**

Should re-interment be required for graves, due care would be taken to carry out this work outside of the main visitor use periods. This may require work to be completed during the fall or early spring, outside of the primary visitor season. If working outside the primary visitor season was not possible, then work would be conducted after peak visitor hours. Any inadvertent discoveries of human remains would trigger notification of appropriate parties and would require initiation of NAGPRA procedures.

## **Environmentally Preferable Alternative**

As stated in Section 2.7 (D) of the NPS DO-12 Handbook, “The environmentally preferred alternative is the alternative that would best promote the national environmental policy expressed in NEPA (Section 101(b)).” The environmentally preferable alternative is the alternative that not only results in the least damage to the biological and physical environment, but that also best protects, preserves, and enhances historic, cultural, and natural resources. Alternative 2 is the environmentally preferable alternative because it best protects the cultural and natural resources and values of the Dyea Historic Townsite in accordance with the laws, regulations, and policies listed in Chapter 1.

## **Alternatives/Actions Considered but Eliminated from Further Analysis**

Several actions were considered during the public and agency scoping process but were eliminated from further evaluation:

### **Taiya River Bank Stabilization**

The Taiya River has eroded the riverbank to the east of the townsite. A contributing cause of the erosion is the installation of the Taiya River Bridge in the late 1940s which channelized the Taiya River and changed its downstream dynamics. If erosion continues the park’s cultural resources and infrastructure developed within the Historic Townsite area could be lost. Over the past several decades the park has considered a variety of methods for mitigating riverbank erosion including hardened banks, engineered log jams, or combinations of both. None of these were determined suitable since they involved expensive, long term solutions and did not directly address the causes of the erosion.

Recent evaluations of the hydrology of the river have given preliminary indications that the combination of isostatic rebound and the change in the river’s hydrology may be causing the

river to entrench in its current channel where it would continue to flow. Flood events are not related to the bank hardening from the bridge installation, but rather have been attributed to catastrophic moraine failures on upstream tributaries to the Taiya River. This topic was dismissed from detailed analysis; however, the park would continue to monitor the erosion and continue to mitigate immediate threats to resources and infrastructure on a case by case basis.

### **Realign Dyea Flats Road**

This action would move and improve the existing Dyea Flats Road. The cost of the road and impacts to natural and cultural resources and values do not justify this action during the 15-20 year life of this plan. Impacts from the existing road have already occurred during the construction phase and cannot be mitigated, and constructing a new road would only add to these impacts.

### **Construct New Campground**

Public comment during fall 2007 indicated a strong preference for the existing campground location because of the high quality of the visitor experience. The park has determined that the benefits of a new campground location do not justify the costs and potential impacts to natural and cultural resources and values. While the existing campground could be threatened by movement of the Taiya River, hydrologic analysis conducted during the past two years indicates the campground could likely continue to function in its current location for the life of the plan.

## **Implementation**

### **Funding and Phasing**

The NPS recognizes the reality of funding limitations in the future and would continue to work with partners to leverage funding opportunities as much as possible. The NPS also expects some cost savings upon plan implementation based on consolidating functions and more efficient operations in Dyea. For example, staging equipment in Dyea for regular road maintenance would provide cost savings on fuel. In addition, proposed actions would be phased in over the 15-20 year life of the plan as funding allows. To most effectively meet the park needs, phasing would be based on the park's highest priorities for Dyea as described in this plan. See Appendix C for more details.

### **Permits and Approvals Needed to Implement the Plan**

State and federal permits and approvals needed include:

#### *Permit for Non-purposeful take of Eagle*

Federal regulations at 50 CFT 22.26 authorize the US Fish and Wildlife Service (USFWS) to issue permits for taking eagles when the take is associated with, but not the purpose of, an activity and cannot practicably be avoided. Authorization is subject to conditions to minimize

impacts. A bald eagle nest exists in the vicinity of the river trail proposed in the Action Alternative. If the Action Alternative were selected, the park would work with USFWS to determine whether a take permit is required.

### *Floodplains*

NPS DO #77-2 (Floodplain Management) implements Executive Order 11988 (Protection of Floodplains). These guidelines direct the NPS to protect floodplains by avoiding, to the extent possible, long term and short term adverse impacts associated with occupancy and modification of floodplains and avoid direct or indirect support of floodplain development wherever there is a practicable alternative. An NPS Floodplains Statement of Findings evaluating floodplain impacts and prescribing mitigation measures is included in Appendix B.

### *National Historic Preservation Act of 1966*

The NPS would need Section 106 Concurrence from the State Historic Preservation Office (SHPO) for a finding of No Adverse Effect for the selected alternative. If there were a finding of Adverse Effect, the NPS would need to follow appropriate mitigation procedures and approval through a Programmatic Agreement or Memorandum of Agreement with the State Historic Preservation Office and the Advisory Council on Historic Preservation. Section 110(f) procedures would need to be followed along with concurrence from the Secretary of the Interior in the event of an Adverse Effect finding for the National Historic Landmark.

### *Native American Graves Protection and Repatriation Act (NAGPRA)*

If there is potential for Native American graves being identified, the NPS would need to follow the procedures outlined in this law and complete a Plan of Action.

## **Future Planning Processes**

### **Fire Management Plan**

The park would complete a separate Fire Management Plan to address fuel management in Dyea, as well as natural and cultural resource issues relating to fire management. The plan would consider the need to create defensible space around potential new facilities and to work with local landowners and the Municipality of Skagway to encourage creation of defensible space within private properties to reduce potential for fire starts/spread from private property and/or reduce fire spreading from NPS lands to private property. As part of this fire management planning process, the park would identify the locations of cultural resources, including historic vegetation, so that these areas are protected and not inadvertently destroyed to create a “clear zone” for fire protection

### **Pest Management Plan**

The park would complete a separate Pest Management Plan to address the need to continue monitoring, in cooperation with the US Fish and Wildlife Service, the presence and condition of known pest species and their impacts on cultural and natural resources.

### **Archaeological Data Recovery Plan**

The park would prepare an Archaeological Data Recovery Plan for the Dyea Historic Townsite which would provide for an excavation strategy for the Dyea area, and to prioritize data recovery in areas adjacent to the Taiya River where there is high potential to lose cultural resources to erosion. This plan would require concurrence from the SHPO as well as the ACHP and requires Agency officials to invite the Secretary of the Interior to participate in the Section 106 consultation. This plan would describe emergency data recovery procedures for features that are in imminent danger of destruction.

# Affected Environment

## Introduction

This section describes the existing conditions in the proposed project area. The guidelines of the CEQ for implementing the NEPA require a description of the resources that might be affected by the alternatives.

The Dyea Core Historic Townsite and the greater Analysis Area (the project area) is a 446 acre area within a 717 acre area of uplifted unconsolidated sedimentary material, located at the mouth of the Taiya River, a 16-mile long water course that begins among the alpine glaciers and snow fields of the Coastal mountain range. During the peak of the last Ice Age, about 10,000 years ago, the entire region was under thousands of feet of ice. As of 1994, 33 percent of the 180 square mile Taiya River watershed remains covered in glacial ice (Paustian et al. 1994). This loss of ice cover is causing a dramatic isostatic rebound. Recent measurements along with a regional analysis revealed that the land surface in the area is being uplifted at the rate of 0.4 to 0.6 inches per year (Larsen et al. 2005). This uplift continues to mold the landscape by altering hydrological processes resulting in rapid rates of plant succession and altering river channel morphology. As a result, the juxtaposition and extent of plant communities and wetlands, and subsequently fish and wildlife habitat is continually shifting. River channel migration is currently causing erosion on portions of the river bank on the southeastern edge of the project area and on lands outside the project area, both within NPS and Skagway municipal jurisdictions.

## Cultural Landscape

A cultural landscape is a reflection of human adaptation to the environment and the use of its natural resources. Such a landscape develops from the interrelationships of human-derived and natural features such as settlement patterns, land use patterns, natural topography, scale, spatial organization, boundaries, vegetation, and the arrangement of circulation features such as roads. The character of a cultural landscape is defined by physical attributes such as roads, structures, and vegetation patterns and by cultural attributes such as values and traditions. Cultural landscapes reflect a community's values and traditions, and through time they constitute a visual chronicle of changes. The dynamic nature of cultural landscapes results from forces such as land management systems, political and legal systems, property laws, technology, and economic conditions, as modern and natural forces continually reshape them. Cultural landscapes are an unparalleled source of information about the times of their development, and they can offer a view back through time that is nonetheless intimately connected to the present. Existing conditions and Cultural Landscape treatment recommendations are identified in the CLTR (NPS 2006a) and CLR (NPS 2013b).

The NPS defines four broad categories of cultural landscapes:

- Historic designed landscapes—those that were consciously designed or laid out according to design principles or in a recognized style or tradition. These include cemeteries and graveyards;

- Historic vernacular landscapes—those that evolved over time as a result of use or development and that reflect endemic traditions, beliefs, customs, or values;
- Historic sites—those that are significant for their association with a historic event, activity, or person; and
- Ethnographic landscapes—those that are related to particular places or areas that contemporary peoples link to their traditional way of life and cultural heritage (NPS 1998).

Situated at the foot of a dynamic glacial river valley, the Dyea Historic Townsite is affected by a range of environmental dynamics. The results of tectonic and glacial activity are evident in the steep topography of the Coastal mountain range and the upland terraces created in response to isostatic rebound—the decompression of land as glaciers retreat. Since the Gold Rush period of 1898-1899, the Dyea townsite has risen nearly 6 feet, continuing to rise at an annual rate of 0.5 inches. The heavily sedimented Taiya River is a braided, continually meandering system which has significantly eroded the historic townsite area; nearly one-third of the Dyea Core Historic Townsite is now in the active river zone. Numerous sloughs and low-water areas, historically rich habitats, continue as active salmon fry rearing sites. Vegetation patterns are also part of the ecological transition of the Dyea landscape. The advance of a successional forest obscures nearly the entire range of archeological resources still embedded in the landscape from the Gold Rush and Homestead Eras. There are few extant historic structures such as the False-Front and Matthews Cabin that represent the Gold Rush era. There is a plethora of archeological evidence and artifacts, road traces, street grid pattern, and historic vegetation planting patterns from several periods of development that are visible in the Dyea landscape.

### **Spatial Organization**

The Taiya River, isostatic rebound terraces, tidal flats and west mountain range all define the physical spatial boundaries of the historic townsite. The historic town street grid and former Homestead road traces at one time defined the circulation and access, and hence spatial organization of the Dyea Core Historic Townsite. From these roads, all buildings, secondary roads, trails, and the cemetery emanate. Because many of the townsite elements are missing, and the site has undergone forest succession, the historic spatial organization has been substantially lost.

### **Land Use**

The commercial and individual recreation that takes place in the Dyea area occurs primarily along the portion of the Dyea Flats Road that leads to the Taiya River tidal flats. Within federal lands, activities include NPS and self-guided tours, bicycling, river float trips, horseback riding and picnicking and sightseeing. Snowmachining and fishing are also allowed pursuant to federal and state regulations. Wheeled dog-sled tours are available on non-federal properties and a guided horseback riding business is located among the private inholdings along the Dyea Road in the northern portion of the affected environment and is permitted for commercial services within the Dyea Historic Townsite.

The Dyea Road transects the historic townsite and provides access to the NPS residential complex as well as approximately 16 private landholders, most of whom have residences on their property. Their ownership predates the establishment of the park. These residential properties are not included in park management. Currently there are no park plans to purchase these adjacent properties. In 1992 the park purchased one residential home, the Kalvick property, to create a required occupancy housing facility for an NPS employee.

Historic remnants include the Matthews Cabin, Kinney Toll Bridge (McDermott) Cabin, and road traces. The relocated Town Cemetery, located on the western edge of the site near the original Slide Cemetery, was established in 1978 to accommodate burials that were moved from the historic Town Cemetery that were endangered by the encroaching Taiya River erosion (the proper name of what is being called the Native Cemetery is the Town Cemetery - in the case of the original cemetery, and the Relocated Town Cemetery for those persons who were moved in 1978). Remnants of the Dyea Historic Townsite, the Town Cemetery, as well as artifacts from the later Homestead era are apparent. Although a substantial portion of the Dyea Core Historic Townsite has been lost to river erosion, it is possible to locate the remains of Main, Broadway, and West Streets and several cross streets south of 4<sup>th</sup> or 5<sup>th</sup> Avenue.

At the time the park was established in 1976, photographic documentation showed that Dyea had several standing buildings and numerous isolated artifacts still littering the ground. Today there are no standing buildings in Dyea except for the Kinney Toll Bridge (McDermott) cabin, which was occupied and maintained, and there is far less evidence of isolated artifacts remaining on the surface. This is most likely attributable to the combination of unauthorized collection of artifacts and increased vegetation covering the area.

## **Circulation**

As shown on Map 1, the Dyea Road, Taiya River Bridge, Dyea Flats Road, Slide Cemetery Road, as well as an informal network of trails, act as the primary components of a larger circulation system throughout the landscape of the Dyea Historic Townsite.

After crossing the Taiya River Bridge, the 20-foot wide state-owned and maintained Dyea Road continues north providing access to private inholdings and the NPS housing complex continuing on through and terminating at the West Creek Bridge. The character of the road surface changes after mile 10.5 from a chip-sealed base to a gravel based road surface. Several secondary private roads run east-west from Dyea Road to the Slide Cemetery Road with exit points at mile 10.3 and 10.5.

In the vicinity of the intersection of the State maintained Dyea Road and the NPS maintained Dyea Flats Road on both the east and west sides of the pavement, there is evidence of old road traces. The old road traces are the historic streets, including Broadway, Old Post Road and Water Street. Based on historic evidence, it appears that the Old Post Road and Broadway were used by early homesteaders after the Gold Rush.

The Dyea Flats Road spurs to the south from Dyea Road at mile 10.0. Dyea Flats Road is a gravelly and organic based surface and maintained by the NPS. The road width narrows to 16 feet in some locations. There are a few drainage ditches and culverts on the Dyea Flats Road. Annual maintenance includes scraping, brushing limbs from the roadway and trimming small saplings to improve line of sight. Gravel is added to the road surface as needed.

There is one small segment of the Dyea Flats road that overlaps the historic Broadway Street. This segment starts approximately 400 feet south of the intersection of the Dyea Road and the Dyea Flats road and continues for about 300 feet.

The Slide Cemetery Road intersects with the Dyea Flats Road to the west at mile .75, continues north to the site of the Slide Cemetery, the beginning of the Lost Lake trail, and then continues north onto Municipal owned property to connect with an east-west trending gravel road. This road turns east to connect with the Dyea Road just south of the West Creek Bridge. The Slide Cemetery Road is used by local in-holders, as well as by the CUA holder who provide horse tours in Dyea. Horses are stabled in the northern part of Dyea on private property and horse tours originate from there. The tour route then follows the Slide Cemetery Road and the Dyea Flats Roads across both federal and municipal lands.

For the first 0.2 miles, Slide Cemetery Road is a 15 foot wide gravel capped roadbed with moderately good drainage because of the cross slope. At 0.2 miles, a small gravel lot provides parking for up to four vehicles. An 8 foot wide, 155 foot long trail leads from the parking area to Slide Cemetery.

Lost Lake Trailhead is located along the Slide Cemetery Road. From the Lost Lake trailhead to the park boundary there have been no improvements and the majority of tread surface consists of organic material. From the cemetery north there are no drainage structures on the road and numerous low areas become flooded. Similar to the Dyea Flats Road, there is only rudimentary maintenance and sightlines are impaired by dense vegetation on the segment between the cemetery and Dyea Flats Road.

The Dyea Flats Road provides access to the entrance of the core historic townsite at Nelson Slough where angled parking is provided along the east side of the road. This currently is the primary parking area for visitors to the core historic townsite and interpretive displays.

There is a private secondary road off the Dyea Flats Road that runs north-south, providing access to a private landowner.

A variety of roads and trails serve as pedestrian corridors through the Dyea Historic Townsite, providing access to the public comfort stations, interpretive sites, the core historic townsite, and the Slide Cemetery. Social trails provide access to the northern portion of the historic townsite, as well as to key archaeological features within the core historic townsite. Functionally, the core historic townsite, and Slide Cemetery are the focal point for visitors using roads and trails within federal lands. The Municipal owned tidal flats area is also a popular visitor and local use destination. Within these areas, only a short trail segment east of the False Front is located on top of the historic street grid.

The NPS maintains one designated loop hiking trail to access the core historic townsite from the Nelson Slough parking area. The trail crosses the Nelson Slough via a wooden 3-foot wide footbridge and connects into an 8-foot wide, organic material-based trail on an established historic road trace which leads toward the core historic townsite. The main trail leads to the False-Front and Broadway on the historic street grid, and to the Town Cemetery. In general the trails throughout the townsite, whether former road traces or defined NPS trails, do not incorporate adequate drainage features, and are poorly maintained and signed. The one primary NPS-defined trail through the historic townsite attempts to use both the historic townsite street grid and former homestead roads, some of which are also Gold Rush era road traces, as the

primary routes of circulation. There is minimal interpretation along these routes. Much of the road and trail circulation that overlays archeological and cultural resources, results in little protection and the possibility of resource loss.

### **Historic Vegetation Features**

The vegetation composition and patterns at Dyea are indicative of a natural succession landscape responding to periodic river flooding and the isostatic rebound creating more stable upland terraces.

The whole area has been largely reclaimed through natural processes of land uplift and plant succession. The best drained sites on the older and more stable upland terraces are occupied by first-generation Sitka spruce and shore pine forest that varies from a few decades old near the marine shore to several prominent stands of circa 100-year old specimens near and within the core historic townsite and at the Slide Cemetery.

Historic photographs show that the core historic townsite was nearly devoid of trees during the Gold Rush period, with only a few scattered trees in the northern section. The tree line was well north of the current northern extent of the core historic townsite at 7<sup>th</sup> Avenue.

Key historic vegetation features include:

- Homestead Era spruce trees planted in a rectangle near the False Front.
- Lines of trees planted near the False Front, dated via tree ring analysis to the Gold Rush era and evidenced in historical photographs.

Key vegetation features that likely were part of the original Gold Rush era landscape include:

- Prominent stands of Sitka spruce and shore pine forest circa 100 years old at the northern boundary of the core historic townsite and well into the northern historic townsite.
- Old growth spruce trees at Slide Cemetery.

### *Small-Scale Features*

Homestead era barbed wire fencing is evident throughout the area. Most of these features are not standing, although some portions still are.

Stone survey markers are located throughout the area. These represent the Homestead era and are mainly associated with the Pullen Homestead.

### **Cultural Resources**

The Dyea Historic Townsite commemorates the Klondike Gold Rush, the last major gold rush in American history. Thousands of stampedeers in search of fortune began their trip north to the Klondike gold fields via the Chilkoot Trail at Dyea. The Chilkoot Trail and Dyea Site District was listed on the National Register in 1975 with the defined period of significance listed as

1897-1898. The district was further listed as a National Historic Landmark in 1978 with revisions in 1987. The Alaska State Historic Preservation Officer (SHPO) concurred with this designation in 2002.

The 2006 CLR expands the listed period of significance to include the Homestead Era as an adaptive and continued use of the Dyea site from 1899-1946 and determines that Homestead Era features are eligible for the National Register. SHPO concurrence has not yet been obtained for this determination.

### **Archeological Resources**

Archeological resources, the physical evidence of past human activity, represent both prehistoric and historic occupations at Dyea. Archaeological resources include sites, features and artifacts. A complete assessment and documentation of the historic townsite's archeological resources has not yet been undertaken; however, varying degrees of archeological resource information exists for most of the area.

Dyea itself is considered an archeological site that is made up of features and scattered artifacts that can be considered some of the most important physical resources in terms of integrity dated to the period of significance. Dyea's archeological resources are representative of human use over time, from ancient, historic, and contemporary Alaska Natives and First Nation Peoples of Canada, as well as Euro-Americans. Now largely forested as a result of abandonment of both the town and homestead use, the townsite's archeological deposits remain as evidence of the hastily constructed gold rush gateway to the Klondike. Based on the archeological surveys and compliance projects conducted by the NPS over the past 15 years, 345 archeological features have been identified, including 10 general features, two foundations, 79 pits, 13 structures, and several large areas of artifact concentration. Further historical and archeological research in the mid-1980s yielded information about the location of Dyea streets and businesses, as seen in results from 20 test pits and the recovery of over 6,000 artifacts including bricks, ceramics, glass, and tin cans as well as 1,440 pieces of charcoal in 1984-85.

Researchers have noted that the Dyea subsurface deposits are particularly shallow and aggregated in clusters "that may be the locations of buildings, dumps, or other activity areas" (Gurcke 1986). Numerous artifacts and remains of features can be seen on the ground surface throughout Dyea.



*River road trace, NPS 2001b*

## Historic Resources

### *Historic Structures*

A historic building or structure is a constructed work consciously created to serve some human activity. Historic structures usually are immovable, although some have been relocated and others are mobile by design. They include buildings, monuments, dams, millraces, canals, bridges, roads, railroad tracks and rolling stock. In some cases they comprise standing ruins of all structural types (NPS 1998). Historic structures, in particular buildings, can degrade to historic ruins, in which case they may be more appropriately termed archaeological resources.

The NPS maintains a List of Classified Structures for all sites in the national park system. This list is the primary reference of building types, significance, condition, and recommended treatments. The List of Classified Structures notes four resources for the Dyea area (Table 4): False-Front, Long Wharf, the Kinney Toll Bridge (McDermott) Cabin and Matthews Cabin. As the only built physical features above ground that relate to the period of significance, these few historic structures are integral to an understanding of the Gold Rush events at the turn of the century.

**Table 4: List of Classified Structures for Dyea**

<i>LCS Structure Name</i>	<i>ID LCS</i>	<i>Park Structure No.</i>
False-Front	35711	FMSS-91309
Long Wharf (not on NPS property)	35710	NO NPS number
Matthews Cabin	35714	FMSS-94633
McDermott Cabin	783253	FMSS-68732



*Warehouse remain, Dyea townsite, NPS, 2001b*

## **Ethnographic Resources**

According to NPS Management Policies (NPS 2006b), ethnographic resources are the cultural and natural features of the park that are of significance to traditionally associated peoples. Traditionally associated peoples are defined as those who are contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations, and those whose interests in the park's resources began before the park's establishment. Dyea's traditionally associated peoples include predominantly Tlingit and also Gold Rush and Homestead era families.

Both natural and cultural resources can have ethnographic significance if the traditionally associated peoples assign values to those resources.

In Dyea ethnographic resources are difficult to identify since little physical evidence of use remains. In 1880, the Chilkoot opened the trail to outsiders but continued to guard and capitalize on territorial control by their monopoly on packing services to prospectors who entered Dyea on their way to the Yukon goldfields. Most Native families lived in a village north of the Healy and Wilson Trading company property during the gold rush. There were a number of graves in the Dyea area in several cemeteries that may be considered sacred sites by traditional user groups.

### *Graves*

Known graves from the historic Town Cemetery, within the Dyea Core Historic Townsite on lands owned by the state have been washed away by natural erosion of the Taiya River. Reburial within the park of human remains that were not removed from the park's land is currently not

permitted under NPS policy (NPS 2006b) unless authorized under Cultural Resource Policies or unless specifically authorized under an exemption to policy. In Stewardship of Human Remains and Burials (5.3.4) it states “Reinterment at the same park may be permitted and may include remains that may have been removed from lands now within the park”. In 1978 the park relocated graves from the Town Cemetery to the Relocated Cemetery.

The Town Cemetery, which occurs on state-owned land within park boundaries, has been subject to intensive erosion over the past 50 years, including a large flood event in 1990 that washed away around 90 feet of riverbank. A history of the cemetery with a description of the current understanding of the remaining graves is included in Appendix D.

## Natural Resources

### Soil

The Dyea Historic Townsite lies at the mouth of the glacier-supplied, sediment-laden Taiya River, between its main and west branches. Due to the river’s location at the head of Lynn Canal, tidal actions prevent flushing of its sediment load, creating a tidal flat system extending more than one mile south into Taiya Inlet. Along the river valley floor, soils consist of organic-rich alluvial materials overlying sand, silt, and coarse gravel (NPS 2001a).

From the Taiya Inlet, mountains rise abruptly to 7,000 feet in elevation, where peaks are surrounded by the northern extremities of the immense Juneau Icefield and other glacial systems. Perennial icefields remain above the 3,000-foot level (NPS 1981). Local area glaciers include the Ferebee and the Irene glacier systems.

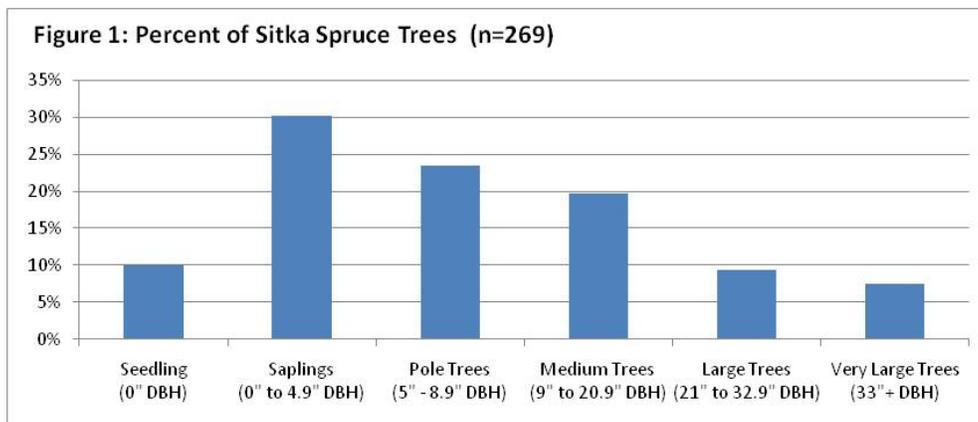
### Vegetation

The southern portion of Dyea Flats area, just outside of the project area, is an intertidal estuary strongly influenced by the interacting forces of sediment deposition from the Taiya River and the 27 foot tidal range of the Northern Lynn Canal. Beach fringe plant communities, which occur adjacent to the 2-mile long intertidal zone, are a mixture of salt and flood tolerant plants such as sea-beach sandwort (*Honckenya peploides*), goose-tongue (*Plantago maritima*), Pacific silverweed (*Argentina egedii*), and native dune-grass (*Leymus mollis*) that grow just above the intertidal zone. The location of this community will easily shift due to major storms, shifting sands, and with the continued uplift of the Dyea estuary. This serial community is likely to be succeeded by vegetation similar to those currently on the upland portion of the flats.

The Dyea Flats, including NPS lands, is an uplifted estuary that continues to rise because of isostatic rebound. It is composed of silt and sands derived from beach and river sediments. Plant species are a mix of salt and flood tolerant plants and upland species such as yarrow, beach pea (*Lathyrus japonicas*), sedges, and grasses including native dune grass. Vegetation within the whole area is dominated by a Sitka spruce (*Picea sitchensis*) forest that has grown up since the time of the gold rush. Historically, spruce trees were planted within the core historic townsite. Some of these trees now are large diameter spruce trees and can be identified by the fact that they are planted in a straight line. Historical photos of the area from 1898 show a sandy meadow habitat with a few seedling Sitka spruce. Currently, a mid-age stand of Sitka spruce dominates

the project area; Figure 4 displays the percent contribution of each size class of Sitka spruce to the area's forest. The forest canopy is composed of medium and large sized Sitka spruce and averages about 25 feet in height. Incidentally, Sitka spruce is the third largest conifer in the world but is unlikely to reach record heights of 300 feet in the relatively dry and nutrient poor environs of Dyea. Another important tree species in the project area include cottonwood (*Populus balsamifera*) which are scattered throughout the project area, but are more concentrated near the eastern edge. Cottonwood trees reach similar heights to the Sitka spruce in the area and on average may be slightly larger in Diameter at Breast Height (DBH). Paper birch (*Betula papyrifera*) and willow (*Salix spp.*) are also scattered throughout the project area, but in relatively low densities. The rarest tree is the shore pine (*Pinus contorta contorta*). Of the 310 overstory trees that were counted in the 8 plots, 7 were shore pine and only 3 were alive. This is a natural phenomenon because the habitat in Dyea does not support shore pine as a climax species. Other overstory species include hemlock and cottonwood (n=41 within the 8 plots). In habitats in and near the park, shore pine tends to grow on dry, rocky sites and is out-competed by Sitka spruces on more mesic sites.

**Figure 1: Percent of Sitka Spruce Trees (n=269) in Eight 0.1 acre Vegetation Plots in the Dyea Analysis Area**



The analysis of data from eight vegetation plots, 0.1 acre in size (collected in 2007) revealed a density of 310 overstory trees per acre and 630 understory (seedlings and saplings) per acre. This indicates good regeneration. The density of snags in the over-story tree class is 75 per area. The snags provide valuable wildlife habitat.

### *Invasive Exotic Plants*

Thirty-three species of exotic invasive plants have been documented in the Dyea Developed Area (Table 5), and several of these have been the subject of control actions. The park conducts exotic species eradication efforts in the project area. The plants listed on Table 5 are the primary targets of eradication. A potential threat, which is not currently present in Dyea, is white sweet clover (*Melilotus alba*) which is currently in Skagway.

**Table 5: Exotic Invasive Plants in the Dyea Area**

Scientific Name	Common Names
<i>Bromus inermis</i>	smooth brome
<i>Capsella bursa-pastoris</i>	shepherd's purse
<i>Cerastium fontanum</i>	mouse-ear chickweed
<i>Chenopodium album</i>	Lambsquarters
<i>Crepis tectorum</i>	narrowleaf hawksbeard
<i>Elymus repens</i>	Quackgrass
<i>Erysimum</i>	wormseed mustard
<i>Euphrasia nemorosa</i>	common eye-bright
<i>Hordeum jubatum</i>	foxtail barley
<i>Impatiens glandulifera</i>	ornamental jewelweed
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Linaria vulgaris</i>	yellow toadflax
<i>Matricaria discoidea</i>	pineapple weed
<i>Phalaris arundinacea</i>	reed canary grass
<i>Phleum pretense</i>	timothy grass
<i>Plantago major</i>	Plantain
<i>Poa pratensis</i>	Kentucky bluegrass
<i>Polygonum aviculare</i>	prostrate knotweed
<i>Potentilla gracilis</i>	slender cinquefoil
<i>Ranunculus acris</i>	tall buttercup
<i>Ranunculus repens</i>	creeping buttercup
<i>Rumex acetosella</i>	sheep sorrel
<i>Rumex crispus</i>	curled dock
<i>Senecio viscosus</i>	sticky ragwort
<i>Senecio vulgaris</i>	common groundsel
<i>Silene cucubalus</i>	bladder champion
<i>Stellaria media</i>	common chickweed
<i>Tanacetum vulgare</i>	common tansy
<i>Taraxacum officinale</i>	Dandelion
<i>Thlaspi arvense</i>	field pennycress
<i>Trifolium hybridum</i>	Alsike clover
<i>Trifolium pretense</i>	red clover
<i>Trifolium repens</i>	white clover
<i>Galeopsis bifida</i>	Split-Lipped Hemp Nettle

## Floodplains

A preliminary floodplain assessment was completed for the lower portion of the Taiya River watershed. The purpose of the floodplain assessment was to describe the 100-year floodplain and determine if the Dyea Historic Townsite and the proposed facilities and improvements are within the 100-year floodplain. A one-hundred-year flood is a flood event that has a 1% probability of occurring in any given year. The 100-year flood is also referred to as the 1% flood, since its annual exceedance probability is 1%. The 100-year floodplain is defined based on the flood water level for the expected 100-year flood flow rate in a given creek, river or surface water.

The preliminary assessment followed NPS guidelines for floodplain management as described in the NPS DO 77-2 and accompanying Procedural Manual 77-2. Details are contained in Appendix B.

Based on the preliminary floodplain assessment, it appears that the eastern and western areas surrounding the core historic townsite are within the 100-year floodplain (Figure B-1, Appendix B). Additionally, the proposed Dyea Visitor Contact area, Maintenance support facility, and

Seasonal Bunkhouse, which are all located north of the Taiya River Bridge, are located within the estimated 100-year floodplain. The estimated water surface elevations associated with the 100-year recurrence interval should be considered preliminary and approximate. The assessment does not take into account flood events associated with glacial lake outburst, nor does it factor in tidal influence. Additional analysis would be required to account for these processes and how they would impact floodplain water surface elevations. Furthermore, the preliminary assessment assumes that floodwater is conveyed in all areas below the flood water surface elevation. While many of these low lying areas are active channels that convey water during high flow periods, further analyses would be required to establish if all these geomorphologic features are interconnected and actually convey water at the 100-year flood stage.

Flooding in the lower Taiya River watershed can result from rain and snow, snowmelt, and geohazards related to glacial features in the upper tributary basins, including glacially dammed lakes, avalanches or mudslides associated with unstable deposits.

The USGS Gauging Station at the Taiya River bridge is located at 50 feet above NGVD29 (North Geodetic Vertical Datum 29) or sea level. Based on the period of record and gauge observations during high water events, the National Weather Service Advanced Hydrologic Prediction Service states that a reading relative to the gauge, not to channel or ground elevations, of 16.5 feet is considered flood stage.

Management actions commence with a gauge reading of 16.0. At this stage, advisories are issued to the public and staff. At 16.1 feet, portions of the Chilkoot Trail begin to flood and by 16.8 feet Mile 2.7 of the trail can be knee to thigh deep (2-3 feet). Note that flooding on the Chilkoot Trail is not synonymous with flooding in Dyea since many portions of the trail are low-lying along the Taiya River. At 17 feet on the gauge, the NPS may close the Chilkoot Trail due to safety concerns.

In contrast, it is not until 19 feet (69 feet above sea level), that the Dyea campground located  $\frac{3}{4}$  mile south of the gauging station begins to flood. The northwestern portion of the campground is situated at the lowest elevation along the Taiya in this vicinity. At 20.7 feet the lowest spot on the state maintained Dyea Road near the Taiya River bridge floods. This is where the raft pullout is located.

Although the USGS gauging station has not been operated continuously, there are fourteen historical high water crests that exceed 16.5 feet on the gauge since 1971 (National Weather Service, 2009). These events have ranged from 16.88 feet recorded in 1973 to 19.86 feet recorded in 2002 with the advent of the West Creek lateral moraine failure.

This latter event flooded portions of private property and the Dyea Road near the northern end of the Dyea area that were located adjacent to West Creek. This high water event flooded the Dyea campground and required it to be evacuated. It also scoured the riverbanks and caused loss of property next to the campground and at the core historic townsite along the western bank. It did not, however, flood any other properties within the Dyea area.

Flooding in the mid-1970s reached historic levels at 18.35 feet in 1975 and 18.43 feet in 1976. During this time severe erosion occurred near the core historic townsite, and over 90 feet of bank was lost near the Town Cemetery. However, there are no reports of the water overtopping the bank within the core townsite during these flooding events.

Based on this assessment, it appears that flooding would extend across most of the valley north of the Taiya River Bridge (Figure B-1, Appendix B). Downstream from the bridge, flooding appears to be divided into the area bounding the main channel along the east side of the valley, and the area bounding the channel along the west side of the Dyea Core Historical Townsite. Based on the predicted main channel velocities, it is likely that, depending upon the location of debris jams, increased bank erosion would likely occur during the 100-year event. Average estimated floodplain velocities are significantly less due to the increased surface roughness, such as trees, surface undulations, and brush vegetation. The removal of trees and creating smoother trail surfaces may reduce surface roughness and increase potential flood velocities in those areas. Flow that is conveyed in active or inactive channels across the floodplain could increase erosion and channel migration, depending upon stream velocities, the occurrence of debris jams, and the density of vegetative cover.

## **Wildlife**

Many species of resident and migratory songbirds, raptors, and water-birds can be observed on Dyea Flats or on the surrounding waters. Bald eagles nest in the project area. During spring green up and during salmon runs, both black and grizzly bears are commonly observed within the project area. Bears frequently transit the townsite's trails as is evidenced by the common presence of fresh bear scat. Occasionally, bears and humans encounter each other at close range in the townsite, but to date, no one has been injured by a bear. Bears are also frequently observed fishing in Nelson Creek just south of the project area. Boreal toads have been documented breeding in Nelson Slough and ponds which extends through the townsite and across the project area boundary onto municipal land. Boreal toads are considered a species of management concern and the number of core sites being used for breeding in the Dyea area appeared to be in decline through 2009 (Wetherbee 2009) but showed some recovery in 2010 (Surdyk 2010).

The only species of ungulate observed on the flats are moose, and sightings are rare. Wolves and coyotes are occasionally seen traversing the townsite. Small mammals such as snowshoe hare and voles are present year-round. The occasional river otter has been spotted in the water and on land.

## **Fish**

Water quality in the Taiya River indicates that the watershed is relatively pristine and currently free of anthropogenic influence. The lower Taiya River and its tributaries support three of the five species of Pacific salmon; chum, coho and pink salmon, as well as Dolly Varden and steelhead trout (NPS 2011b) This river system is listed in the *Catalog of Waters Important for the Spawning, Rearing and Migration of Anadromous Fishes* (Alaska Department of Fish Game [ADFG] 2009). Historically, the Taiya supported a large run of spawning eulachon, but the run has declined for unknown reasons (NPS 2011c).

Nelson Creek or Slough (ADFG #115-34-10230-2011) is a small, clear water tributary of the Taiya River, which flows into the Taiya River north of the historic townsite. This small stream is listed in the Catalog as an anadromous fish stream supporting coho salmon and Dolly Varden rearing habitat (ADFG, 2009).

## Visual Resources

Skagway and Dyea are located at the head of the Taiya Inlet, in the northern portion of southeast Alaska's panhandle. Glacier-clad peaks rising sharply from tidewater, steep-walled valleys and glacial rivers, and a maze of saltwater fjords and canals characterize the geography of the area. Flat land is limited to the bottoms of glacial valleys or areas adjacent to river deltas.

The Dyea/Chilkoot Trail unit lies within the Taiya River Valley which is approximately 18 miles long and 1.5 miles wide. This valley is generally longer, wider, and higher than the nearby Skagway River valley to the east. The unit begins at tidewater following the Taiya River valley north to the Canada border. The lower valley is characterized by a 1.5-mile long tidal flat. The highest elevation in this unit is 5,600 feet (NPS 1996a).

Both the natural and cultural viewsheds are important resources as described in the NHL designation. These viewsheds give the visitor a sense of place and orientation to the historic landscape. The broader cultural landscape is readily recognized through the viewscape of the wharf piers to the south and to the Chilkoot Pass to the north, but the historic townsite grid is more challenging to identify given the successional vegetative growth and more recent human imprints on the ground.

The approach into the Dyea Historic Townsite is primarily on the Dyea Flats Road. It is a narrow, winding road that leads to the Dyea Core Historic Townsite entrance and continues south to the Dyea Flats. Within the townsite, numerous historic ruins dot the landscape and provide evidence of a once thriving community. The area is currently being overgrown by an emergent forest, which masks the historic character of boomtown Dyea and makes it difficult for the unescorted visitor to visualize a town. Because the historic street grids are no longer evident, the layout of where buildings and structures once stood is not clear. Artifacts litter the ground, but for many visitors the connection is not easily made between these features and the historic past (NPS 2006a).

## Examples of significant viewsheds in the Dyea area



*Panoramic from the Dyea Flats Road. Looking north (L) towards Dyea Historic Townsite and Chilkoot Pass, east to the Taiya River, Dyea Road, and the remnants of the old Dyea wharf, and south (R) to the Taiya Inlet and the Lynn Canal.*

Photo courtesy of Erica Francis



*Approaching the Taiya River Valley from the head of the Taiya Inlet. Looking North towards the Dyea Flats, Dyea Historic Townsite, and Chilkoot Pass.*



*Nelson Slough and Dyea Flats from the Dyea Flats Road. Looking north towards the Dyea Historic Townsite and Chilkoot Pass.*



*Iris fields near the Nelson Slough Bridge.*



*Dyea Historic Townsite main trail facing north.*



*Dyea Historic Townsite main trail along alley between 4<sup>th</sup> and 5<sup>th</sup> Avenue.*



*Dyea Historic Townsite "False Front", ruins of the A.M. Gregg Real Estate Office on west side of Main Street between 4<sup>th</sup> and 5<sup>th</sup> Avenue*



*From the Dyea Historic Townsite looking north towards the Taiya River, the NPS campground, and Chilkoot Pass. To the left is the former site of Healy and Wilson Trading Post.*



*Taiya River Bridge looking southwest to the Historic Townsite. To the left is former site of the Native Village.*

## **Soundscape**

### *Natural Sounds*

Dominant natural sounds in the project area include water flowing in the broad moderately sized, Taiya River. During the park's high water season (traditionally in the early spring and early fall), the river may reach flood levels thus increasing the volume of water sounds. The sound of wind rushing through the trees is a common occurrence. Rain interacting with natural features including trees, ponds, and meadows are common sounds. During break-up (the time of year when the solid ice layer in the river bed breaks up and begins to move) the sounds of ice chunks hitting each other occurs.

Occasionally, the sounds of coyotes howling or bears interacting with each other can be heard. Songbirds are abundant and are commonly heard throughout the year, but particularly during the summer months. Several bald eagles reside in Dyea, and their calls can frequently be heard.

### *Anthropogenic Sounds*

Currently, a commercial kennel operates during the summer about 1/4-1/2 mile southwest of the project area and provides summertime sled dog rides to tourists. About 400 dogs live in a small area and can be heard barking and howling on a regular basis. Sled dogs were present during the gold rush and may have contributed to anthropogenic sounds during that time. Sled dogs sounds are the dominant anthropogenic sounds in Dyea during the summer months.

The sounds of horses being ridden in Dyea, which traverse the project areas several times per day during the summer season, may have been similar to the sounds of horses during the gold rush.

In Dyea, the sounds of people talking are likely much less common today than during the gold rush. Nevertheless, there are times when groups of visitors traversing the townsite can be heard by other groups.

Aircraft noise is relatively low in Dyea. Helicopters occasionally traverse the Taiya River Valley to provide flightseeing or to access Bureau of Land Management (BLM) land for glacier landings. Normally sounds are limited to a short duration.

Vehicle traffic is heard throughout the historic townsite. The Dyea Flats Road is crowded with vehicles during the summer months. A transportation study completed in 2005 (Vande Kamp & SeeKamp) showed that vehicular traffic averages in the Dyea area were directly correlated between the number of cruise ship passengers in Skagway and the temperature. Using a provided formula for 5,000 Skagway visitors and a temperature of 70 degrees, the estimated daily totals for vehicles in Dyea would be expected to range from 72 to 120 per day. This in turn translates to estimated 280 to 465 visitors per day in vehicles (not necessarily getting out of the vehicles). Using these estimated daily totals and multiplying by 150 (May 1 through September 30) days an estimated range for the annual vehicle total can be calculated at 10,845 to 18,015, as well as an annual estimated visitor range of 41,970 to 69,718. Using the estimated daily totals and dividing by 480 minutes (an 8 hour day), gives a vehicle passing the counter every 4-6 minutes on an average day. Of course, vehicular traffic waxes and wanes as cars pull into parking areas

and stop to visit sites along the way. These numbers are intended to give a general sense of the magnitude of vehicular traffic sounds in Dyea.

Sounds from bicycles can be heard by groups of visitors on bicycles. These sounds are limited to day use visitors and only during times that commercially guided tours are occurring.

ORVs can be heard throughout the historic townsite. ORVs are not allowed on federal lands, but they are allowed on the municipally owned Dyea Flats.

Anthropogenic sounds in the winter are significantly reduced. Barking dogs are no longer heard because the dog sled business only operates in the summer. Snowmachines are used in the Dyea area, and can be used within the townsite given Superintendent's approval with adequate snow cover. In the winter, snowmachine sounds replace ORV sounds. Vehicular traffic during the winter is dramatically reduced. Traffic into Dyea for this time of year is mostly limited to local residents.

## **Visitor Experience**

The Dyea Historic Townsite provides visitors the opportunity to understand and experience a significant cultural landscape as well as a wide variety of recreational activities on federally owned property within the park boundaries. Recreational uses beyond the commercially-guided tours include camping, picnicking, bird and wildlife watching, cross-country skiing, horseback riding, appreciation of natural and cultural resources, and solitude. Snowmachining and fishing are available pursuant to federal and state law. All of these recreational uses are also available nearby on municipal owned property. In addition, ORV use and coastal access are available on municipal property. Hunting and trapping are also allowed in nearby areas, but not on federal lands.

Commercially-guided tours include walking and bicycle tours within the Dyea Core Historic Townsite, horseback and bicycle tours on the Dyea Flats Road, and river-rafting tours which occur on the Taiya River beginning just north of federally-owned land at the West Creek confluence (these float trips originate on Municipality of Skagway property). Other visitors to the area engage in commercially guided activities, such as dog sled tours, on nearby private lands. These activities are accessed using small vans via the Dyea Flats Road that are parked on municipal lands.

Encroaching vegetation and contemporary uses of the area through the years by recreational users have resulted in a spider web of roads and trails that mask the original grid and layout of the historic townsite of Dyea. Interpretive waysides and orientation materials are dated and difficult to maintain. Some of the wayside exhibits are simply printed and laminated signs that are tacked to plywood bases. An orientation kiosk is located at the Nelson Slough area but is often missed by visitors because of its location.

## **Visitor Use**

Both qualitative and quantitative data were collected and analyzed by Vande Kamp and SeeKamp (2005) to get a holistic view of the visitor experience at Dyea. Research showed a

correlation between the number of visitors from the cruise ships who visit Dyea and the ambient temperature on a given day. Quantitative data took the form of vehicular and visitor counts. Vehicular traffic counts in Dyea have implications for road construction and maintenance needs. Vehicular traffic was counted using a combination of both automatic counters and visual observation of vehicles in parking areas. All vehicles, both private and commercial, were counted. Distinctions were made between numbers of vehicles using the Dyea Flats Road and continuing out to the flats, and those that stop at the Nelson Slough to visit the townsite (including average time vehicles were in the parking lots).

The highest average number of vehicles visiting the Dyea Core Historic Townsite was 67.3 vehicles in one day. The peak number was 118 vehicles on 7/27/2004. This is contrasted with the highest daily average of 167 vehicles for those visiting the Dyea *area* (meaning through traffic to the Dyea Flats), and a peak of 180 vehicles visiting the Dyea Flats on one day. Upgrade of the Dyea Flats Road would require upgrading and maintaining the road to serve, at a minimum, the peak average number of vehicles in the Dyea *area*.

Current parking at the Dyea Historic Townsite consists of eight parking spaces, with an allowable parking time of four hours. Law Enforcement Ranger observations confirm that the parking area does not reach capacity during the summer months.

Current parking at the Slide Cemetery is six spaces. (Vande Kamp and SeeKamp 2005) indicated that during the 2004 season parking never reached peak capacity. In fact the highest use reached 60% capacity, or approximately four vehicles. Further, visitors to the Lost Lake trail north of the Slide Cemetery were using the parking area since capacity for parking at the trailhead is limited to two vehicles.

The volume of visitor traffic has increased in Dyea given that visitor numbers have increased since the 2004 study and are projected to increase further in 2014. Additional data are derived from another transportation study. Sheih (2005) focused her research on the Skagway area, but provided valuable information that highlighted visitor desires to see appropriately priced transportation to the Dyea area. Thirty percent of the respondents stated that they “definitely would” travel to Dyea if a round trip fare of \$4 were available. Had transportation services been available in 2005, it could have meant an increase from the 20,002 visitors to nearly 259,106 people, more than a ten-fold increase.

This observation was confirmed when 50-71.9% of visitors queried in the 2012 survey (Manning 2013) stated they would be “likely” or “very likely” to use free transportation services to Dyea, while 33.3-63.5% indicated they would likely use such services if a fee of \$10 were charged.

This information is critical to management when discussing alternative transportation to Dyea and the standards for which road conditions would be upgraded and maintained.

Vande Kamp and SeeKamp’s research was useful for determining the need for improved road and parking capacity within the Dyea Area. It also offered a glimpse into the visitor experience and the need for improved interpretive capacity within the area, but did not provide quantifiable data relating to the visitor experience that would allow the park to identify the indicators and standards to which it could manage the visitor experience.

The qualitative data portion of the visitor surveys captured visitor impressions through a series of questions designed to understand the quality of the visitor experience. The researchers concluded that “it is important to note that many visitors indicated that both the historical and natural attributes of Dyea were important. Responses were commonly consistent with a high value placed on both types of attributes rather than a zero-sum tradeoff between history and nature.”

In response to suggested changes to improve the visitor experience, most respondents suggested an increase in interpretive information in the Dyea area. This response is similar to recurring comments the park receives regarding the visitor experience in Dyea. When asked to respond to specific proposed management actions, the most opposition came with the proposed changes in the physical environment that would affect the largest areas, such as the largest potential width of trails in the new street grid.

In contrast Manning (2013) focused specifically on the visitor experience as it relates to ‘crowding’ (i.e. the numbers of people in a given location that either contributes to or detracts from the visitor experience) and provided the basis for defining the appropriate levels of the daily total of groups allowed per activity within the Dyea area.

Manning concludes that while perception of crowding in the Dyea area and Historic Townsite is currently acceptable to most of the visitors surveyed, the quality of the experience would degrade if the level of crowding increased (2013).

A distinction is made between the “preferred” numbers of visitors at any given area and the “acceptable” number of visitors at any given area. Visitor responses to what they preferred and what they would consider acceptable were fairly closely matched with a few exceptions. A further distinction between what was acceptable and unacceptable (meaning the level at which visitors would leave the area because of crowds) was made. These data showed that it would not take a significant increase in visitor numbers to degrade the experience to the point that it was no longer acceptable to most visitors.

### *Commercial Use Authorizations*

To meet the park’s objectives through commercial services, the NPS offers a number of visitor services in Dyea through Commercial Use Authorizations (CUAs). Management Policy direction for the use of CUAs is found at 10.3 (NPS 2006b). CUAs are issued under the NPS Concessions Management Improvement Act of 1998 (16 USC 5966). Guidelines are provided in two subsequently issued internal Memorandums: “Interim Guidelines for Commercial Use Authorizations” issued in November of 2005 and “Authorizing activities through leases versus concession contracts or commercial use authorizations” issued in May of 2007.

In keeping with the interim guidelines and with the existing Commercial Services Plan for the Dyea area, the types of activities that are open to consideration for CUAs are Auto/Bus which includes a walking/hiking tour, Bicycle, and Horseback. These activities meet the criteria for necessary and appropriate services as previously determined by the park Superintendent.

Uses that were examined and determined unnecessary or inappropriate in the 1996 CSP included:

Guided Tours - Air, ATV, cross-country skiing, dog sled (mushing), or snowmobile  
Facilities – Entertainment, restaurants, hotels/motels, or supplies

Other: Equipment rental or storage, fishing or hunting guide, hang-gliding or para-sailing

### *Commercial Services*

In determining whether the appropriate administrative tool is a Concessions contract, a CUA or a Lease agreement, the interim guidelines (NPS 2005) are followed. CUAs are used when the business aspects are conducted outside the park and the service is provided inside the park. None of the visitor activities currently open for consideration and currently being offered through CUAs meet the criteria for either Concessions Contracting or Leasing.

Regulations (Sec 418.b.2.d) and interim guidance are clear in stating that “the Secretary has no authority to issue more CUAs than are consistent with the preservation and proper management of the park resources and values, and shall establish other conditions for the issuance of such authorization...”

The Superintendent has not determined that any adverse effects to the park resources and values have occurred as a result of existing levels of CUA activity. Adverse impacts to cultural resources have been identified on existing trails that currently run through archaeological features, but this impact occurs with visitor use in general and not specifically because of CUA activity.

### *Socioeconomics*

Visitors contribute to the tourism economy of Skagway. The Skagway Chamber of Commerce estimates that 556 year-round working residents are joined by 1500 -2000 workers in the busy summer season (<http://www.skagwaydevelopment.org>). Most of these workers find summer jobs in tourism-related fields. While the Skagway unit of KLG0 hosted 854,250 visitors in 2012, the majority of whom arrived via cruise ship, only a portion of these visitors travelled to Dyea.

The total economic impacts of Klondike Gold Rush National Historical Park activities to the Skagway community were most recently estimated at \$4,095,594 in 2002 (Southeast Strategies, 2003). A National Park Service estimate of the economic impacts of park visitor spending in 2010 totaled \$14,882,000 (NPS, Stynes 2011). While there were no estimates specific to Dyea, a growing percentage of the above numbers is attributable to the wide variety of visitor activities offered by commercial operators in the Dyea area.

The value of ecosystem services in the Dyea area attributable to the diversity found within the lower Taiya River floodplain is expected to be substantial but has not yet been measured.

# Environmental Consequences

## Introduction

This section provides an evaluation of the potential effects or impacts of each of the alternatives.

## Methodology

### Impact Criteria

The direct, indirect, and cumulative impacts are described for each issue (impact topic) that was selected for detailed analysis. The impacts for each issue are based on the intensity (magnitude), duration, and context (extent) of the impact. Summary impact levels (negligible, minor, moderate, or major) are given for each issue. Definitions are provided below.

### Intensity

- Low: A change in a resource condition is perceptible, but it does not noticeably alter the resource's function in the park's ecosystem, cultural context, or visitor experience.
- Medium: A change in a resource condition is measurable or observable, and an alteration to the resource's function in the park's ecosystem, cultural context, or visitor experience is detectable.
- High: A change in a resource condition is measurable or observable, and an alteration to the resource's function in the park's ecosystem, cultural context, or visitor experience is clearly and consistently observable.

### Duration

- Temporary: Impacts would last only a single visitor season or for the duration of discreet activity, such as construction of a trail (generally less than two years).
- Long-term: Impacts would extend from several years up to the life of the plan.
- Permanent: Impacts are a permanent change in the resource that would last beyond the life of the plan even if the actions that caused the impacts were to cease.

### Context

- Common: The affected resource is not identified in enabling legislation and is not rare either within or outside the park. The portion of the resource affected does not fill a unique role within the park or its region of the park.
- Important: The affected resource is identified by enabling legislation or is rare either within or outside the park. The portion of the resource affected does not fill a unique role within the park or its region of the park.
- Unique: The affected resource is identified by enabling legislation and the portion of the resource affected uniquely fills a role within the park or its region of the park.

### Overall Summary Impact Levels

Summaries about the overall impacts on the resource synthesize information about context, intensity, and duration, which are weighed against each other to produce a final assessment. While each summary reflects a judgment call about the relative importance of the various factors involved, the following descriptors provide a general guide for how summaries are reached.

- Negligible: Impacts are generally extremely low in intensity (often they cannot be measured or observed), are temporary, and do not affect unique resources.
- Minor: Impacts tend to be low intensity or of short duration, although common resources may have more intense, longer term impacts.
- Moderate: Impacts can be of any intensity or duration, although common resources are affected by higher intensity, longer impacts while unique resources are affected by medium or low intensity, shorter-duration impacts.
- Major: Impacts are generally medium or high intensity, long term or permanent in duration, and affect important or unique resources.

### *Cumulative Impacts*

Cumulative impacts are the additive or interactive effects that would result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions (RFFA) (40 CFR 1508.7). Cumulative impacts were assessed by combining the potential environmental impacts of the alternatives with the impacts of activities or natural processes that have occurred in the past, are currently occurring, or could occur in the future within the Dyea developed area.

Cumulative impacts on resources in the area have been dominated by management of the Dyea area that has allowed natural succession to occur and recreational infrastructure to be incorporated. During the historic time period, the Dyea area had an open landscape on an estuary, as opposed to the heavily vegetated landscape that exists today as a result of natural succession. Vegetation within the project area is dominated by a Sitka spruce forest that has grown up since the time of the Gold Rush. Because of natural succession the historic street grids are no longer visible and the layout of the buildings and structures are not clear. Existing

facilities, roads and trails in the Dyea Developed Area are used by the park to manage the area and to provide public access to the Dyea Historic Townsite and private property. About 5.5 miles of roads and trails occur in the analysis area with all facilities covering about 24 acres. Existing infrastructure in the Dyea developed area is identified in Table 6.

**Table 6: Existing Infrastructure in the Dyea Developed Area**

Existing Facility, Road, or Trail	Existing Infrastructure Approximate Area			Proposed improvements Approximate Area	
	Approximate Length	Approximate Average Width	Approximate Area	Proposed improvements Approximate Area	Proposed Action item
	(Feet)	(Feet)	(Acres)	(Acres)	
Kalvick House (Required Occupancy) and surrounding property	300	150	1.03	0.51	Construct Seasonal Bunkhouse
Dyea Townsite Parking & Picnic Area & SST	N/A*	N/A*	0.3	0	N/A*
Dyea Flats Road (NPS Maintained)	6547.2	24	3.6	1.5	Upgrade Dyea Road Standards
Slide Cemetery Road/Horse Trail (from Slide Cemetery north)	5280	18	2.2	1.2	Upgrade Slide Cemetery Road Standards
Slide Cemetery Road and parking	1372.8	24	0.8	0.1	Upgrade Slide Cemetery, add parking
Dyea Townsite Trail System	6283.2	7	1	0.717	Realign core historic townsite trails
Lost Lake Trailhead	0.12	7	0.1	0	N/A*
Dyea Campground	1000	500	11.48	0	N/A*
Dyea Chilkoot Trail parking & SST	300	50	0.344	0.61	Add parking, improve toad pond trail
River trail	0	0	0	0.97	Add new River Trail
Visitor Entrance - Kinney Toll Bridge (McDermott Cabin)	0	0	0	2	Similar to Kalvick area improvements
<b>GRAND TOTAL</b>			<b>20.854</b>	<b>7.607</b>	<b>28.461</b>

\* N/A = Not Applicable

Also within the Dyea area, the trend of increasing annual visitation to the Dyea Historic Townsite creates an ongoing trend that is considered within this cumulative impacts section.

Reasonably Foreseeable Future Actions (RFFAs) are those actions that are likely or reasonably certain to occur, and although they may be uncertain, they are not purely speculative. Typically, they are based on documents such as existing plans, permit applications, or announcements. Proposed actions in the project area include grave relocation and archaeological excavations that would occur in advance of river erosion. Archaeological excavations and grave relocations would include the removal of vegetation and ground disturbance. In addition, the Municipality of Skagway Borough is pursuing potential development of a hydroelectric facility in the West Creek drainage basin. This project could significantly contribute to cumulative impacts within the area south of the historic townsite on municipality owned property for some resources, but specific impacts are indeterminable at this time because the plan is only in the conceptual stages.

## **Cultural Landscapes**

### **Alternative 1 – No Action**

The cultural landscape's natural systems and features, spatial organization, land use, circulation, topography, vegetation, views and vistas, and small-scale features would essentially not be altered in the No Action Alternative. Continued incremental improvements to roadways, trails, parking areas, picnic areas, and the location and construction of new facilities and infrastructure conducted on a case-by-case basis could negatively affect the vegetation, views and vistas, circulation, spatial organization, and small-scale features of the cultural landscape.

The current management practice that allows natural succession to continue to occur except near those areas that are routinely maintained around historic ruins, facilities, and along existing trail and road corridors is a negative effect on the Dyea Core Historic Townsite's spatial organization and circulation, elements that are being lost to natural succession by native species.

Although noted as "limited use" in the Superintendent's Compendium, ORV and snowmachine use in the Dyea Historic Townsite would continue to have a negative effect on cultural resources, specifically historic structures, archeological resources and cultural landscape features that may be near the land surface. Pedestrian, biker, and horse rider use of existing trails and roads that cross areas not currently surveyed for cultural resources would continue to have a negative effect to the cultural landscape, as these facilities may be located over fragile cultural resources. Any off-trail use or social trails created by horses, ORVs, snowmachines, pedestrians or bikers are considered to be negative impacts due to the limited cultural resource surveys completed for the entire area.

Visitors continuing to enter Dyea's Historic Townsite on their own with no formal interpretation of the cultural resources could cause a negative effect by inadvertently coming into contact with sensitive cultural resources via off-trail or social trail use. There would be no effect if they participate in tours led by NPS rangers, stay on signed trails located on historic routes, or view existing interpretive waysides.

Direct and indirect effects to the cultural landscape due to implementation of the No Action Alternative would be of medium intensity, long-term to permanent in duration, and unique in context.

### *Cumulative Impacts*

Two natural systems and features impact the cultural landscape: isostatic rebound and the Taiya River. Since the end of Dyea's boom days, isostatic rebound, the nature of the shifting soils and the depositional environment, has contributed to development of an emergent forest. Although most of that deposition most likely occurred prior to the establishment of the emergent forest, when Dyea was open and sand dunes were being formed, the emergent forest has incrementally overtaken Dyea's historic form (historic street pattern, many surface artifacts, etc.), thereby creating a negative effect on cultural resources.

Additionally, the Taiya River had changed course substantially since the period of significance. During boomtown years, the river was located east of the town. As a result of natural processes, construction of the bridge crossing the river, and various river stabilization efforts upstream and downstream of NPS property, the river course has cut off about one-fifth of the town in the northwest section. Substantial loss of cultural resource material has occurred due to river erosion with virtually no documentation of lost resources. The current cemetery contains several burials from a historic cemetery that was degraded by Taiya River erosion. The cultural landscape would continue to be negatively impacted from erosion.

The primary past actions that affect the cultural landscape include isostatic rebound, Taiya River erosion of the historic townsite, and the natural vegetative succession that has crowded out historic vegetation features and historic form. The construction and improvement of facilities, there would impact the natural reforestation areas. Potential vegetative removal associated with the RFFAs of archaeological excavation and grave relocation on state land (to protect resources in advance of river erosion) would also affect the cultural landscape. The combination of the past, present, and RFFAs would result in moderate cumulative effects to the cultural landscape, which would likely persist long-term.

### *Conclusion*

Natural succession would continue to occur in the Dyea area, in accord with the direction outlined in the GMP. However, the lack of a comprehensively-planned development approach would have negative impacts on the cultural landscape. In addition, the continued erosion of the townsite by the Taiya River could also negatively impact the cultural landscape. The No Action Alternative would result in overall moderate impacts to the cultural landscape.

### **Alternative 2 – Dyea Area Plan**

The cultural landscape's natural systems and features, topography, vegetation, views and vistas, and small-scale features would not be substantially altered under Alternative 2. Spatial organization, land use, vegetation, views and vistas, and small-scale features would all be affected by development of several proposed facilities within the Dyea area to varying degrees. The proposed improvements under Alternative 2, including the construction of the Dyea Historic Townsite entrance area, relocation of existing trails in the Dyea Core Historic Townsite on to the historic street grid, future Visitor Service Facility, and other proposed facilities would assist in enhancing protection of the most critical cultural landscape elements more than they would negatively impact the cultural landscape.

Circulation in the cultural landscape would benefit from the correction of drainage problems and sightline obstructions along the existing Dyea Flats Road. Further, the creation of the Dyea Core Historic Townsite trail system would reestablish the historic landscape, while the construction of the River Trail would equate to a change in the landscape. A comprehensive approach to improvements would remove several negative impacts currently in the cultural landscape.

Direct and indirect impacts on the cultural landscape would be medium in intensity, long-term to permanent in duration, and unique in context. Impacts to the cultural landscape would be beneficial.

### *Cumulative Impacts*

The primary past actions that have affected the cultural landscape include Taiya River bank erosion, and the natural vegetative succession that has crowded out historic features. The dynamic and continued bank erosion has negatively impacted the integrity of the Dyea Historic Townsite. In improving or locating new facilities, there would be an impact on the natural reforestation areas. Vegetative removal associated with the RFFAs of archaeological excavation and grave relocation (to protect resources in advance of river erosion) would affect the cultural landscape. Implementation of this alternative would result in moderate, beneficial impacts, which would assist in offsetting some of the adverse impacts to the cultural landscape resulting from the combination of past, present, and RFFAs. Beneficial impacts would likely persist long-term.

### *Conclusion*

Alternative 2 would result in overall moderate, beneficial impacts to the cultural landscape.

## **Cultural Resources**

### **Alternative 1 – No Action**

Under the No Action alternative, on-going management actions would continue, but a long-term planning effort for cultural resources would not be conducted. The Kinney Toll Bridge (McDermott) Cabin would be relocated and any new facilities and infrastructure would be developed on a case-by-case basis.

The Kinney Toll Bridge (McDermott) Cabin, as one of the few intact historic resources in Dyea whose significance is unknown, is not currently being used, resulting in material loss. The cabin is presently somewhat visually and physically accessible; it may not be afforded such an opportunity in its new location.

Creating new facilities and infrastructure on a case-by-case basis would potentially impact historic structures throughout Dyea. Although individual creation of new amenities would trigger individual planning and NEPA/Section 106 responsibilities, the lack of a comprehensive planning approach that would consider all potential impacts of a number of amenities phased and implemented over time, could potentially impact other historic resources as collective function, relationship, materials and costs would not be taken into consideration on a case-by-case basis.

Archeological resources could be negatively impacted by the proposed case-by-case development called for under the No Action Alternative. Disturbance from constructing new amenities, and potential for increase in visitor numbers, vehicle emission residue, or other factors introduced into the historic setting as a result of the construction, could negatively affect the archeological resources.

Direct and indirect impact to historic structures under this alternative would be medium in intensity, long-term in duration, and unique in context.

### *Cumulative Impacts*

The primary past and present actions that affect historic resources are the continued Taiya River bank erosion, the proposed archaeological data recovery plan, and natural vegetative succession. Loss of historic resources *in situ* does impact the integrity of the historic features, although having a plan for archaeological recovery minimizes this impact. Vegetation has impinged upon historic resources with root intrusions and falling branches, impacting structural integrity of some features. There are no known RFFAs that would affect historic structures and features in the Dyea area. The combination of the direct and indirect impacts with the cumulative actions would result in a moderate negative contribution to cumulative effects to the historic resources, which would likely persist long-term.

The primary past actions that affect archeological resources are informal trail creation, infrastructure development, the eroding of the Taiya River bank, and natural vegetative succession. Both trail creation and vegetation succession have impinged upon subsurface and surface archeological resources through root intrusions, compaction of soil, and falling branches which impact the structural integrity of some features. The RFFAs of archaeological excavation and grave excavation on state land (to protect resources in advance of river erosion) would affect archeological resources in the Dyea area.

Direct and indirect impacts to archeological resources under the No Action alternative would be medium in intensity, long-term in duration, and unique in context.

### *Conclusion*

The No Action alternative would result in a moderate negative impact to cultural resources in the Dyea area. The lack of comprehensive planning for both the development of amenities, as well as excavation of the archeological resources, would negatively impact the integrity of the archeological resources. However, recovery could protect some resources from destruction due to erosion by the Taiya River. The proposed plan of archaeological data recovery and continued erosion by the Taiya River would negatively impact the integrity of historic resources. Natural vegetative succession would continue to impinge upon historic resources.

## Alternative 2 – Dyea Area Plan

There are two actions in Alternative 2 that potentially affect historic resources in Dyea:

- Relocation and adaptive reuse of the Kinney Toll Bridge (McDermott) Cabin as an interpretive wayside and orientation node at the Dyea Historic Townsite entrance.
- Development of a historic townsite entrance area with an associated trail system interpreting the core historic townsite street grid.

### *Relocation and Adaptive Reuse of the Kinney Toll Bridge (McDermott) Cabin*

The Kinney Toll Bridge (McDermott) Cabin is one of the few intact historic resources potentially representing the Gold Rush Era that remains in Dyea. Currently it is not being used, and as a result is undergoing material loss. The intent to relocate the building to the new Dyea Historic Townsite entrance area to be used as an interpretive exhibit would provide it with a more accurate context near a river crossing. In creating a more contextual setting for the structure and rehabilitating it, there are two primary effects. The rehabilitation of the structure into an interpretive exhibit would assist in minimizing material loss, as well as create a new use for the structure. Further, using the building as an interpretive exhibit would allow staff to be near or in the building on a regular basis, assisting with identification and completion of any routine maintenance or conservation issues in a timely manner.

### *Dyea Historic Townsite entrance area and associated historic street grid trail network.*

The Dyea Historic Townsite has the highest concentration of cultural resources and historic structures within its realm, yet currently there is no central starting point for visitors to understandably access and interpret the historic townsite. The proposed location of this access point is at the junction of the Dyea Flats Road and the Dyea Road, providing direct access onto the townsite grid. The rehabilitated Kinney Toll Bridge (McDermott) Cabin would afford an interpretive starting point for visitors to the townsite. Directly related to the new Dyea Historic Townsite entrance area is development of a trail system on the historic street grid. This development would remove several informal trails that cross through historic blocks and may impact historic resources, and constructs a trail system that reinforces the historic street grid pattern.

As a mitigation measure the park would undertake historic research and perform archaeological testing to clarify where gold rush era remains are still in existence. Historic streets that would be rehabilitated as modern day trails would be sited in those locations where the least damage would occur to remaining *in situ* archaeological sites and features. Trails would be sited in areas where *in situ* remains of historic buildings and features can be viewed and appreciated by visitors.

The natural vegetation succession could have beneficial and negative effects to archaeological resources. It can provide a protective layer for archaeological resources; however, vegetation can also damage these resources via root intrusion. All archaeological undertakings related to development of new trails, improved roads, and installations of new structures have the potential to destroy *in situ* remains of the Gold Rush and the subsequent Homestead period.

Direct and indirect impacts of Alternative 2 could include an increased opportunity for interpreting, protecting, and managing historic resources. Direct and indirect impacts to historic resources would be medium in intensity, long-term in duration, and unique in context. These impacts would be beneficial to managing historic resources in the Dyea area.

### *Cumulative Impacts*

The primary past action that has affected cultural resources is the natural vegetative succession occurring in the area; vegetation has impinged upon historic resources with root intrusions and falling branches, impacting structural integrity of some features. Resources can also be impacted by other natural processes, such as isostatic rebound, erosion, and flooding. Facility improvements in the area also affect the cultural landscape. There are no known RFFAs that would affect cultural structures. The combination of the direct and indirect impacts with the cumulative actions would result in moderate beneficial impacts which would offset negative impacts to historic resources, which would likely persist long-term.

### *Conclusion*

Alternative 2 would result in overall moderate beneficial impacts to cultural resources.

## **Soils**

### **Alternative 1 – No Action**

The No Action Alternative would result in little to no added negative impacts to soils, as no new/additional ground disturbances would be proposed. Pedestrian users would continue to travel on Dyea Flats Road and on existing maintained and social trails, adding little to no new disturbed area. Equestrian impacts to soils would continue to be limited by current restrictions in the Commercial Use Authorization. The natural revegetation of the Dyea Historic Townsite would continue to protect soil stability in this area. Parking areas, trails, picnic areas, and other visitor service facilities would be improved or maintained on an as-needed basis. If visitation to the Dyea area continues to increase, adding updated facilities may have a local negative impact on soils in the area.

Indirect impacts of the No Action Alternative could include increased development of new social trails due to trail user conflicts and increased visitation. Overall direct and indirect impacts on soils under this alternative would be low in intensity, long term in duration, local in scope, and common in context.

### *Cumulative Impacts*

Cumulative impacts to soils have increased as a result of past and present actions taken within the Dyea townsite. Past actions have included the development of roads, trails, and interpretive exhibits. These improvements, both inside and outside the Dyea Historic Townsite, but within the context of park uses, total approximately 23.6 acres. Cumulative impacts would also include

continued soil erosion from the meandering river channel, which currently intersects the northeast corner of the old townsite. Under the No Action alternative, no additional acreage is expected to be disturbed.

RFFAs that could have an effect on soils include grave relocation and archaeological excavations that could occur on state land in advance of river erosion at the Dyea townsite.

Considering the past, present, and RFFAs, the No Action Alternative would add negligible negative cumulative impacts to local soils, which would likely persist long-term.

### *Conclusion*

The No Action Alternative would result in overall negligible impact to soils. Continued use of existing trails, future case-by-case infrastructure development, and possible increase in new social trails, would continue to cause local soil disturbance.

### **Alternative 2 – Dyea Area Plan**

Alternative 2 would cause soil disturbance in several areas: along new trails developed during restoration of the Dyea Core Historic Townsite street grid, construction of the river trail, upgrades to the existing Dyea Flats Road, at the newly developed parking area for the visitor contact station where rehabilitated structures for interpretive displays would be sited, and at the construction sites of new buildings, vault toilets, and parking areas at Slide Cemetery and near the Kalvick property (approximately 2 to 4 acres).

New trails, coupled with the maintenance of existing trails, would impact soils in the immediate area of newly altered trail systems via surficial exposure, and would affect subsequent shallow subsurface soil stability. Alterations to existing trail systems would include vegetative mat removal and re-grading to achieve accessibility along the new trail routes and maintenance of the existing trail routes within the Dyea Core Historic Townsite, reducing the ongoing natural revegetation in this area. However, closure of old trails in the townsite area would have a direct beneficial impact on soil stability. Near-surface soil disturbance and removal would occur during foundation construction of the new formal entrance to the Dyea Historic Townsite, new buildings, vault toilets, and parking areas.

Indirect impacts of the Alternative 2 would include a beneficial reduction in soil disturbance along uncontrolled social trails due to improved visitor access management.

Direct negative impacts to soils resulting from Alternative 2 would be of low intensity, long-term in duration, local in scope, and common in context. Direct and indirect beneficial impacts to soils would have a similar duration, scope and context to the negative impacts; however, intensity of these impacts would be low.

### *Cumulative Impacts*

Past actions contributing to cumulative impacts on soils would be similar to those of the No Action Alternative. Estimated acreages would be expected to be similar to the existing improvements for park use. Cumulative impacts to soils as a result of past and present actions

taken within the Dyea townsite have included the development of roads, trails, and interpretive exhibits. These improvements, both inside and outside the Dyea Historic Townsite, but within the context of park uses, total approximately 24 acres. Alterations to trails and grave relocation would impact soils most in this alternative. Improvements and updates to the current trail system layouts are expected to be minimal, in comparison to the 24 acres previously impacted. Potential impacts resulting from the disturbed areas would likely be lessened through the revegetation of a portion of the trail system. Cumulative impacts would also include continued soil erosion from the meandering river channel.

RFFAs that could have an effect on soils include grave relocation and archaeological excavations that could occur on state land in advance of river erosion at the Dyea townsite.

Construction of structures, facilities and new trails in the old townsite and vicinity would have negative impacts to soils. However, closure of old trails and reduced use of social trails under Alternative 2 would improve soil stability. Considering the past, present, and RFFAs, Alternative 2 would have a minor contribution to cumulative impacts on local soils, which would persist long-term.

### *Conclusion*

Alternative 2 would cause localized impacts resulting from removal of protective vegetation layers from the underlying soils, and from soil disturbance/excavation during construction. Soil impacts due to alterations in runoff characteristics and drainage patterns would be mitigated through the design of culverts or other drainage features. Beneficial impacts to soils would occur from revegetation of old trails and reduced use of uncontrolled social trails. The overall impacts to soils from implementation of Alternative 2 would be minor.

## **Vegetation**

### **Alternative 1 – No Action**

The No Action Alternative would result in little to no additional adverse impacts to vegetation, as no new or additional ground disturbances are proposed. Natural plant succession responding to rebound and draining of areas would continue towards a more spruce-dominated community. If visitation to the Dyea area continues to increase, the need for updated facilities may cause localized minor adverse impacts to vegetation.

Indirect impacts of the No Action Alternative could include the development of new social trails, but the overall direct and indirect impacts under this alternative would be low intensity, localized, long-term, and common in context.

### *Cumulative Impacts*

Cumulative impacts to vegetation are best characterized as a return to natural succession from a long period of disturbance during both the Gold Rush and Homestead Eras. During the historic time period, the Dyea area had open landscape on a river estuary, as opposed to the heavily

vegetated landscape that exists today. The hillsides and upriver areas were denuded of trees for use heating structures and fueling generators. The development of interpretive trails has largely taken advantage of pre-existing pathways with disturbance to vegetation primarily from trail maintenance and the development of social trails through the site. Foreseeable future impacts include additional trail maintenance, historic preservation and documentation, invasive plant control, fire management activities, and continued development of social trails. Under the No Action Alternative, no additional acreage is expected to be disturbed.

### *Conclusion*

The No Action Alternative would result in an overall negligible impact to vegetation. Continued use and maintenance of existing trails, future development and resource management activities, and possible social trail development would continue to cause local disturbance to vegetation. The level of impact on vegetation would not result in impairment of park resources that fulfill specific purpose identified in the enabling legislation or foundation statement of KLGGO, or that are key to the natural and cultural integrity of the park.

### **Alternative 2 – Dyea Area Plan**

Creating new trails and installing new infrastructure such as the visitor contact area, seasonal bunkhouse, and maintenance support facility would necessitate the removal of overstory, understory, and groundstory vegetation. All of the construction proposed in the Action Alternative would occur in the Sitka spruce forest.

The Dyea Historic Townsite is an area where mushrooms are routinely gathered for personal use. Primary areas used for mushroom collection would not be affected by any of the proposed actions.

Although commonly applied best management practices for construction in wild-land areas would help minimize the introduction of exotic invasive plants, the ground disturbance associated with the Action Alternative would allow the establishment of invasive plant species. It is impossible to predict which exotic species may establish themselves, but it is likely that several listed in Chapter 3 would invade, and by the time these project components are implemented it is likely there would be new exotic species in the area.

The overall direct and indirect impacts under this alternative would be medium intensity, localized, long-term, and common in context.

### *Cumulative Impacts*

Creating new roads and trails, and installing new infrastructure such as the visitor contact area, seasonal bunkhouse, and maintenance support facility would necessitate the removal of approximately 5-10 acres of overstory and understory vegetation that is cumulative with vegetation removal previously conducted to construct the Dyea road both within and just outside of the project area. The current footprint of the State maintained road corridor is 12 acres and the NPS-maintained road is 3 acres within the Dyea analysis area. This 15 acre area represents about 3 percent of the analysis area impacted by previous construction.

Past road construction, development, and the associated human use has led to the introduction of exotic noxious weeds in Dyea. Park efforts at early detection and invasive plant control along roads and trails have kept noxious weeds to small isolated and controllable occurrences. The impacts associated with the Action Alternative would increase the potential for the establishment of exotic noxious weeds which is cumulative with the potential for exotic weed establishment already occurring due to the existing roads. It is likely that the area suitable for exotic invasive plant establishment would increase.

### *Conclusion*

Alternative 2 would cause localized adverse impacts by increasing the potential to spread invasive exotic species. These impacts would largely be mitigated by proper implementation of best management practices for vehicle and equipment cleaning and through continuing the current exotic plant monitoring and eradication program. The overall adverse impact on park resources from exotic invasive plants and tree removal would be minor.

## **Floodplains**

### **Alternative 1 – No Action**

There would be no negative, long-term direct or indirect impacts to the 100-year floodplain as a result of the No Action Alternative. The Taiya River bank erosion that is occurring along the river bank east of the townsite would likely continue. The lower Taiya River valley is susceptible to bank erosion and subsequent channel migration. Channel migration is a function of the low gradient, anastomosing nature of the Taiya River (multiple channels), and is primarily related to the occurrence of large woody debris and high sediment loads that accumulates in the channel, obstructing and diverting streamflow, and initiating changes in the channel. Thus, bank erosion and channel migration would continue as part of the natural process under the No Action Alternative.

Existing roads, trails and facilities and portions of the townsite are within the 100-year floodplain, and would remain potentially susceptible to flooding. Small-scale flooding is a typical seasonal occurrence in the area; large-scale or catastrophic events occur with less frequency.

### *Cumulative Impacts*

With no direct or indirect impacts to the 100-year floodplain, there would be no contribution to cumulative impacts if the No Action Alternative was implemented.

### *Conclusion*

There would be no impacts on the 100-year floodplain under this alternative. There would be continued erosion and flooding impacts to various portions of the river valley, including the historic townsite.

## **Alternative 2 – Dyea Area Plan**

There would be no negative, long-term direct or indirect impacts to the 100-year floodplain as a result of the Alternative 2. Flooding in the vicinity of the proposed facilities is likely to be widespread across most of the valley; therefore, the base flood elevation would not be affected as the result of the construction of the proposed facilities. The structures proposed for installation would not divert water flow in the floodplain. The Taiya River bank erosion that is occurring along the river bank east of the townsite would likely continue. The lower Taiya River valley is susceptible to bank erosion and subsequent channel migration. Channel migration is a function of the low gradient, anastomosing nature of the Taiya River (multiple channels), and is primarily related to the occurrence of large woody debris that accumulates in the channel, obstructing and diverting streamflow, and initiating changes in the channel. Thus, bank erosion and channel migration would continue as part of the natural process under Alternative 2.

However, the proposed improvements to trails, facilities, and historic resources could be susceptible to direct impacts from flooding within the 100-year floodplain. There would be continued erosion and flooding impacts to various portions of the river valley, including the historic townsite. Small-scale flooding and erosion is a typical seasonal occurrence in the area; large-scale or catastrophic events occur with less frequency. The removal of trees and surface grading for the development of new trails would reduce surface roughness and potentially increase local flood velocities in those areas during large-scale events. Increased velocity could result in additional erosion.

### *Cumulative Impacts*

With no direct or indirect impacts to the 100-year floodplain, there would be no contribution to cumulative impacts if Alternative 2 was implemented.

### *Conclusion*

No impacts to the 100-year floodplain would be anticipated due to Alternative 2. However, there could be impacts to trails and facilities and the historic townsite within the 100-year floodplain.

## **Wildlife**

### **Alternative 1 – No Action**

As a result of the No Action Alternative, there would be no direct, adverse impacts to wildlife or wildlife habitat. There would be no additional development that would increase conflicts between visitors and wildlife. There would be no additional direct adverse impacts to toad breeding sites or wintering habitat.

Indirect impacts of the No Action Alternative could include increased development of social trails and possible adverse impacts to bird nesting and breeding sites and Boreal toad habitat.

Direct and indirect impacts on wildlife and habitat would be low intensity, short-term, localized, and common in context.

### *Cumulative Impacts*

Past actions contributing the cumulative impacts of wildlife and wildlife habitat include removal of vegetation and alteration of wetlands during the Gold Rush and Homesteading Eras. Since those times, the site has been characterized primarily by natural vegetation succession and a gradual return to more undisturbed conditions. Some development and maintenance of trails, wayside exhibits, and other park infrastructure has caused localized, long-term impacts to habitat.

Increased visitation, ongoing trail and facility maintenance, resource management activities, and the continued development of social trails would cause localized adverse impacts to wildlife and wildlife habitat. Considering the past, present, and reasonable foreseeable activities, the No Action Alternative would add negligible adverse impacts to these resources.

### *Conclusion*

Direct and indirect impacts to wildlife and wildlife habitat under the No Action Alternative would be low intensity, long-term, localized, and common in context. The level of impact would not result in impairment of park resources that fulfill specific purposes identified in the enabling legislation or foundation statement of KLG0, or that are key to the natural and cultural integrity of the park.

## **Alternative 2 – Dyea Area Plan**

Resident and migratory songbirds and bald eagles have the potential to be disrupted during construction, especially during the tree removal phase, of any of the project's components. Disruption to birds can be minimized by timing tree removal to be outside of the nesting season. According to the USFWS, the nesting season for forest birds in Southeast Alaska is April 15 to July 15. Furthermore, eagle nesting trees (and trees within 100 yards of eagle nests trees) would not be removed as part of this project. The permanent loss of approximately 9 acres of Sitka spruce forest is regionally insignificant and is unlikely to permanently impact migratory songbirds or bald eagles. The Action Alternative would also result in an increase of forest edge within the analysis area.

Bears would not suffer any permanent loss of habitat as a result of this project, but may be temporarily disrupted during construction activities. It would be essential for construction crews to follow appropriate food storage etiquette. Additionally, the potential exists for construction activities to displace bears on to nearby private or municipal land. Vigilance would be required to keep track of bear travel patterns during construction. Although the project would result in a net increase in length of roads and trails, these new trails would be designed to be straight, in the case of the trails in the Dyea Core Historic Townsite, or have adequate visibility, in the case of the proposed horse trail and road improvements. This net increase in visibility within the infrastructure in Dyea may actually decrease the potential for adverse bear human interactions.

The greater the distance at which bears or humans spot each other, the higher the likelihood is for a positive outcome during an encounter.

Boreal Toad breeding habitat is unlikely to be impacted either temporarily or permanently during this project because wetlands would not be altered by any of the activities proposed in the Action Alternative. However, it would be essential not to disturb habitats adjacent to the breeding sites while metamorphs are dispersing. The dates for metamorph dispersal are highly variable depending on the climate in any given year but in general occur between late July and mid-October. To minimize potential impacts to Boreal toad metamorphs, construction activities would not occur within 200 yards of the breeding sites while young toads are dispersing.

Boreal toad non-breeding habitat described for the project area and detection outside of the breeding season are virtually nonexistent. It is likely that adult Boreal toads disperse into the nearby western spruce forest and live on the forest floor in the litter layer and under downed trees and rotting logs. It is likely that the project would result in the loss of several acres of Boreal toad non-breeding habitat. Because Alternative 2 would be disturbing only 1.3 percent of the analysis area this loss of habitat may not be significant.

Wolves and coyotes are unlikely to be either temporarily or permanently impacted by the project. Small mammals such as snowshoe hares or voles may be temporarily impacted during construction activities but there would be no permanent effect on their habitat.

### *Cumulative Impacts*

The dynamic nature of natural forces acting on wildlife habitat overwhelms past and proposed impacts associated with the Action Alternative described in this document.

Bears have not suffered habitat loss due to past road construction; however, it is likely that their behavior has been altered due to human presence since the gold rush continuing to the present time. Historically, human activities in the Dyea area have likely displaced bears, and increased the likelihood of them being killed due to bear-human conflict (killed in the defense of life and property). In recent times bear-human conflict has likely decreased due to enhanced education and improved food and garbage handling practices.

Boreal toad breeding habitat has increased within the project area because the amount of freshwater wetland habitat has increased due to isostatic rebound. At the time of the gold rush, areas that are now freshwater wetlands were likely strongly influenced by the Taiya Inlet estuary. However, it is also likely that some toad breeding areas were lost due to the construction of the Dyea road in the 1940s. Information on the extent of wetlands prior to construction of the Dyea road is not available. However because wetlands would not be altered as part of the Action Alternative there are no cumulative effects.

Wolves and coyotes did not suffer habitat loss due to past road construction activities, but have likely been impacted by human presence since the time of the gold rush. Impacts associated with Alternative 2 are not likely to increase the impacts of human presence and thus there are no cumulative effects. Likewise, small mammals such as snowshoe hares or voles may have been temporarily impacted during past construction activities but there was no permanent effect on their habitat.

### *Conclusion*

Direct and indirect impacts to wildlife and wildlife habitat under Alternative 2 would cause local adverse effects to Boreal toad non-breeding habitat from removal of vegetation and other material from trail alignments. There would be temporary disturbance from construction activity. Changes in tree cover and in traffic patterns would cause some changes to other wildlife habitat and behavior. These effects would be low to medium intensity, long-term, localized, and common in context. Overall adverse impacts to wildlife and habitat would be considered minor.

## **Fish**

### **Alternative 1 – No Action**

As a result of the No Action Alternative, there would be no direct, negative impacts to fish or fish habitat in the project area, as no new water bodies would be affected. There would be no additional areas developed which could affect water quality from site runoff into local streams or the Taiya River. Parking areas, trails, picnic areas, and other visitor service facilities would be maintained on an as-needed basis but these activities would not likely affect fish habitat.

Indirect impacts of the No Action Alternative could include increased development of new social trails due to trail user conflicts and increased visitation. Social trails can affect fish habitat by trampling stream bank habitat and introducing sediment into streams. Direct and indirect impacts on fish and fish habitat under this alternative would be low in intensity, long-term in duration, local in scope, and common in context.

### *Cumulative Impacts*

Past actions contributing to cumulative impacts on fish survival through fish habitat loss in the Taiya River watershed would include development of the campground, trails, and wayside interpretive exhibits in Dyea. Present impacts would also include continued alteration of fish habitat in the Taiya River from the effects of the meandering river channel.

Considering the past, present, and RFFAs, the No Action Alternative would add minor negative impacts to the fish population through habitat degradation in the project area, which would persist long-term.

### *Conclusion*

Direct and indirect impacts on fish and fish habitat under the No Action Alternative would be low in intensity, long-term in duration, local in scope, and common in context. Overall negative impacts to fish and fish habitat would be considered minor.

The level of impact on fish and fish habitat would not result in any impairment of park resources that fulfill specific purposes identified in the enabling legislation or foundation statement of KLGO, or that are key to the natural and cultural integrity of the park.

## **Alternative 2 – Dyea Area Plan**

The Action Alternative would require no new crossings of the Taiya River and would not affect the fish habitat or fish in the river. The construction of the river trail along the west side of the valley would require the crossing of Nelson Creek and one of its tributaries on the west side of the Taiya River Valley. Both of these small streams are categorized as anadromous fish streams and provide rearing habitat for juvenile coho salmon during their freshwater life phase. These streams also provide habitat for Dolly Varden rearing. The placement of culverts and associated fill during construction of the trail and upgrades to the Slide Cemetery Road would potentially reduce the habitat quality at the site and potentially downstream of the installation. Thus, there would be short-term direct impacts to fish habitat in the Nelson Creek and tributaries from sediment runoff from construction of structures, facilities and new trails in the old townsite and vicinity. However, impacts from construction would be mitigated.

Fish habitat in the small streams of the project area could be improved by changes in visitor access management and reduction in the use of uncontrolled social trails in the general area that could trample stream bank habitat and introduce sediment into streams. Increased visitor traffic could lead to increased fishing pressure in the general areas.

Impacts to fish and fish habitat under Alternative 2 would be considered low in intensity, long term in duration, local in scope, and common in context.

### *Cumulative Impacts*

Direct and indirect impacts to fish and fish habitat would occur from construction of new trails, and installing new infrastructure including new culverts on Nelson Creek and its tributary. Effects on fish habitat quality would be additive with past effects on fish habitat in the project area. Past actions contributing to cumulative impacts on fish and fish habitat in the Taiya River watershed and these would be similar to those of the No Action Alternative and include development of the campground, trails, and wayside interpretive exhibits. Present impacts would also include continued alteration fish habitat in the Taiya River from the effects of the meandering river channel.

Considering the past, present, and RFFAs, Alternative 2 would add minor negative impacts to the fish population through habitat degradation in the project area, which would persist long-term.

### *Conclusion*

Alternative 2 would cause localized negative impacts resulting from installation of culverts and potential runoff from construction of and improvements to roads, trails, and facilities. Impacts to fish and fish habitat from construction activities would be mitigated through the design of culverts and use of Best Management Practices. There would be beneficial impacts to fish habitat by improved visitor access management and reduction in the use of uncontrolled social trails that can trample stream bank habitat and introduce sediment into streams. Overall impacts to fish and fish habitat resulting from Alternative 2 would be considered minor.

## Visual Resources

### Alternative 1 – No Action

The Dyea area would continue to be obscured by vegetation growth, except for areas that are routinely maintained. The change in the vegetation in the area has obscured the historic street grids and the overall character of the Dyea townsite. The No Action Alternative would continue to allow the natural vegetative succession to progress. Direct and indirect impacts to visual resources under this alternative would be low in intensity, long term in duration, local in scope, and important in context.

#### *Cumulative Impacts*

Cumulative impacts to visual resources have grown as a result of past and present actions that have altered the natural environment, the cultural landscape, and viewsheds to and within the Dyea area. The most prevalent past action that affects the visual resources in the area is the progression of natural vegetative succession. In continuing to improve or locate new facilities without reference to the CLR, there would continue to be impacts on the cultural landscape. Past development activities, including the campground and visitor facilities, have altered the visual landscape in the area. Social trails have also developed throughout the townsite that fragment the visual landscape. These past and present actions have created persistent, but low intensity impacts to visual resources. There are no RFFAs that would have an effect on existing viewsheds.

Considering the past and present actions, the No Action Alternative would have minor, persistent negative cumulative impacts to visual resources.

#### *Conclusion*

The No Action Alternative would result in overall moderate negative impacts to visual resources. Existing viewsheds would continue to be altered by vegetation growth; historic resources would continue to be obscured by vegetation.

### Alternative 2 – Dyea Area Plan

Alternative 2 would result in the rehabilitation of the street grid of the Dyea Historic Townsite through selective vegetation removal and introduction of new facilities into the cultural landscape. Direct beneficial impacts to visual resources under Alternative 2 would result from the creation of a new trail network along the original Dyea Historic Townsite street grid and along the Taiya River, which would create improved views of the surrounding natural and cultural landscape and help create a visual sense of place. Any existing trails that would not be incorporated into the new trail system would be closed and allowed to naturally revegetate, thereby removing elements of a fragmented natural visual landscape.

In addition, new park operations facilities would be constructed under this alternative. There would be temporary, localized negative impacts to the landscape resulting from construction

activities. However, native plant material would be used to revegetate any disturbed areas in order to blend with the natural surroundings. The new structures would be confined to small, unobtrusive areas outside the historic townsite, and be designed to blend with the existing built environment.

The beneficial direct impacts to visual resources would be of moderate intensity due to number and extent of viewsheds that would be affected by Alternative 2. Alternative 2 would also improve the cultural landscape through the relocation of the Kinney Toll Bridge (McDermott) Cabin to a site more in line with its historic context. Duration of these impacts would be long-term, and add to the enhancement of the natural and cultural landscape of the park. Impacts would be local in scope and important in context. However, there would also be temporary, localized, negative impacts resulting from construction activities, such as the presence of equipment, dust, and vegetative disturbance.

### *Cumulative Impacts*

Cumulative impacts to visual resources have grown as a result of past and present actions that have altered the natural environment, landscapes, and viewsheds around the Dyea area, as discussed under the No Action Alternative for this resource. Past and present actions have contributed minor, but persistent impacts to the visual resources within the townsite. There are no RFFAs that would have an effect on existing viewsheds.

Considering the past and present actions, Alternative 2 would have moderate beneficial cumulative impacts to visual resources (beneficial impacts offset adverse impacts).

### *Conclusion*

Alternative 2 would result in overall moderate beneficial impacts to visual resources.

## **Soundscape**

### **Alternative 1 – No Action**

Under the No Action Alternative there would be no added adverse effects on soundscape. The natural sounds of wildlife, wind, and water would remain. There would be short-term disturbances to the natural soundscape from vehicles and visitors and from the kennels outside of the park. If visitation increases, there would be additional anthropogenic noise from vehicles and groups at the site, but these would be temporary and localized.

### *Cumulative Impacts*

Cumulative adverse impacts to soundscape have likely decreased since the days of the Gold Rush and Homesteading Eras of Dyea. The development of exhibits and trails has had no permanent adverse effect or introduced new sounds to the environment. Future trail and facility maintenance would cause adverse effects that are low intensity, short-term, local, and common in context.

### *Conclusion*

The No Action Alternative would result in negligible effects to the soundscape. Continued use of existing trails and roads, occasional maintenance, visitor tours, and other elements of the existing soundscape would remain at or near current levels. The level of impact would not result in impairment of park resources that fulfill specific purposes identified in the enabling legislation or foundation statement of KLGGO, or that are key to the natural and cultural integrity of the park.

### **Alternative 2 – Dyea Area Plan**

Temporary impacts to the area's soundscape during construction activities would be significant, especially during the tree removal phase. The sounds of chainsaws, and heavy equipment may be audible for long distances and for many hours during a given construction day. Because components of the Action Alternative may be implemented in phases, temporary disruption to the area soundscape could occur for up to several weeks over the next several years.

### *Cumulative Impacts*

The Dyea area's soundscape was significantly different during the time of the gold rush. A variety of anthropogenic sounds made by the several thousand people were probably audible around the clock. Currently, natural sounds dominate Dyea's acoustic environment. The construction and operation of a new visitor facility would result in minor adverse effects that are medium-intensity, long-term, localized, and common in context. Future trail and facility maintenance would cause adverse effects that are low intensity, short-term, local, and common in context.

### *Conclusion*

Alternative 2 would result in negligible effects to the soundscape. Use of new trails and roads, occasional maintenance, visitor tours, and other elements of the existing soundscape would be similar in frequency, volume, and characteristic as exist currently. The sound of concentrated operations and operation of a new visitor facility would cause minor adverse effects to the local soundscape but not to the wider Dyea area.

## **Visitor Experience**

### **Alternative 1 – No Action**

There would be adverse direct impacts to visitor experience as a result of the No Action Alternative. Visits to Dyea would continue to be severely limited by the lack of appropriate infrastructure and the obscured cultural landscape. Horseback and bicycle riders would continue to travel primarily on the Dyea Flats Road, with no separation of vehicles, bicycles, pedestrians, and equestrian traffic, which creates situations for user conflicts or visitor safety issues. The interpretation of the historic townsite would continue to be derived mainly from tours led by NPS rangers and outdated wayside exhibits. Independent visitors who are not part of a tour

group or NPS ranger-led walking tours would be left to find the Dyea Flats Road and the informal entrance to the Dyea Historic Townsite on their own.

Parking areas, trails, picnic areas, and other visitor service facilities would be improved or maintained on a case-by-case basis. As visitation to the Dyea area continues to increase, the No Action Alternative could lead to more negative visitor experiences because of lack of information and potential user conflicts.

The No Action Alternative could include gradually degrading visitor experiences because of outdated facilities, user conflicts, and visitor safety issues. Direct and indirect impacts to visitor experience under this alternative would be low in intensity, long term in duration, local in scope, and important in context.

### *Cumulative Impacts*

Cumulative impacts to visitor experience have increased as a result of past and present actions taken within the Dyea townsite. Past actions have included developing the campground and wayside interpretive exhibits. Past actions also include allowing natural vegetative succession to progress in the historic townsite area, changing the character of the area. The visitor infrastructure has aged over time and the character of the area has degraded. The RFFAs related to recreation and visitor use include the relocation of the Kinney Toll Bridge (McDermott) Cabin and construction of new facilities and infrastructure, which would be done on a case-by-case basis.

Considering the past and present actions, the No Action Alternative would have a minor negative contribution to cumulative impacts visitor experience, and would likely persist long-term.

### *Conclusion*

The No Action Alternative would result in moderate impacts to visitor experience. Impacts could include gradually degrading visitor experiences because of outdated facilities, user conflicts, visitor safety issues, and the lack of interpretive information and guidance around the historic townsite.

## **Alternative 2 – Dyea Area Plan**

Alternative 2 would result in the application of a trail network substantially aligned within the Dyea Historic Townsite. Access in the Dyea area would be improved through a new trail network that would retain the natural character of the area while referencing the historic landscape, meet federal accessibility requirements, and attempt to portray some semblance of alignment within an otherwise subliminal visualization of the historic street grid. Hiking and biking trails would be developed within the historic townsite that would include interpretive markers to define and interpret the historic street grid at Dyea. The park would pursue a partnership to construct an equestrian trail parallel to the Dyea Flats Road to separate equestrian traffic from bicycles and vehicles.

A new, formalized entrance area would be developed, which would emphasize the location of the Dyea Historic Townsite to visitors. It would also include the relocated and rehabilitated Kinney

Toll Bridge (McDermott) Cabin as an interpretive structure. New trails, coupled with the maintenance of selected existing trails, and the addition to improved interpretive exhibits and information would positively impact recreation opportunities and visitor experience.

Alternative 2 could include enhanced visitor experiences because of design and construction of facilities to address user conflicts and visitor safety issues, and increased availability of interpretive information and facilities. Direct and indirect impacts to visitor experience under this alternative would be low in intensity, long term in duration, local in scope, and important in context. Impacts would be considered beneficial to visitor experience.

### *Cumulative Impacts*

Cumulative impacts to visitor experience have increased as a result of past, present, and RFFAs taken within the Dyea townsite, as discussed under the No Action Alternative for this resource. Considering the past and present actions, Alternative 2 would have a moderate beneficial contribution to cumulative impacts to visitor experience (beneficial impacts offset adverse impacts), and would likely persist long-term. However, there would be temporary, localized negative impacts resulting from dust, noise, and equipment associated with construction activities.

### *Conclusion*

The Preferred Alternative would result in moderate beneficial impacts to visitor experience.

## **Socioeconomics**

### **Alternative 1 – No Action**

Few direct impacts to the economy would result from the no impact alternative under the No Action alternative, provided that no new CUA permits were added to existing services. The 1996 GMP Commercial Services Plan would continue to limit group size, number of services permitted, and frequency of services. Indirect negative impacts to visitor experience could occur through perceived crowding if more operators are permitted as CUAs. This in turn could impact participation in CUA operations, which in turn could impact the local economy.

### *Cumulative Impacts*

Small-scale beneficial impacts to the local economy have occurred as a result of tourism opportunities provided by CUA providers. The 1996 GMP Commercial Services Plan would continue to provide those economic opportunities and allow for limited additional CUA operators. However, issuing additional CUA permits may lead to perceived crowding and lessened participation in CUA permitted tours.

### *Conclusion*

The No Action alternative would result in negligible long-term negative impacts to the local economy due to the potential a degradation of visitor experience.

### **Alternative 2 – Dyea Area Plan**

Few direct impacts to the economy would result from the Alternative 2. The number of daily guided tours by CUA permittees within the Dyea area could increase in frequency, from two to six tours per day for bike, van/walk, and hike/float tours, and four to six tours per day for horse tours. However, the total daily number of tours offered and total number of tours within the Dyea Core Historic Townsite at one time would be capped, ensuring that visitor experience remain high. This can indirectly effect participation in CUA provider tours, which in turn would contribute to the local economy.

#### *Cumulative Impacts*

Small-scale beneficial impacts to the local economy have occurred as a result of tourism opportunities provided by CUA providers. The proposed Commercial Services Plan would continue to provide those economic opportunities and allow CUA operators to provide more trips per day. By limiting trips per day and trips in the Dyea Core Historic Area at one time, the park would minimize impacts to current visitation levels.

#### *Conclusion*

Alternative 2 would have a negligible positive impact on socioeconomics because the Commercial Services Plan would allow for some additional business growth while ensuring that the visitor experience remain high.

## **Consultation and Coordination**

The National Park Service consulted and coordinated with numerous agencies, organizations, and interested persons in addressing the proposed Dyea Area Plan and Environmental Assessment for Klondike Gold Rush National Historical Park. Individual members of the public and other interested agencies and organizations have had the opportunity to shape this plan from the initial definition of issues and concerns through the development of alternatives. The following is a brief overview of the extent of public and agency involvement.

### **Public Scoping**

Public scoping began in the late fall of 2002. Early discussions centered on concerns of resource degradation by the river, but also introduced cultural landscape treatment planning that was underway.

Subsequent public meetings were held in the spring of 2007. Two open houses were held in Skagway; one introduced the public to the draft Dyea Area Plan and Environmental Analysis, and the Dyea Cultural Landscape Treatment Recommendations. The second focused specifically on Commercial Use Authorizations and the park's proposals for changes. A site visit was held in the Dyea area to allow the public and other stakeholders an opportunity to envision proposed changes.

In October 2012 another open house was held in Skagway. Work on the Environmental Assessment had been delayed because of a variety of circumstances, so this public meeting was held to re-acquaint the public with the intent of the Dyea Area Plan and Environmental Assessment, and to provide an opportunity and forum for collecting new comments from the public and stakeholders.

### **Public Comments**

Public comments were collected at all open houses. Two public comment periods were opened for 60 days each time in the spring of 2007 and then again in October 2012. Informal comments continue to be collected. All of the comments have been responded to within the draft Dyea Area Plan and Environmental Assessment. Comments related primarily to the need to maintain a sense of place in Dyea, to not overdevelop the area, and to maintain a relatively natural environment for the public and landowners to enjoy.

### **Consultation with other Stakeholders**

During the same periods that public comments were being solicited, consultation with the State and Local Governments occurred. The planning team shared draft copies of the EA with the State of Alaska and with the Municipality of Skagway. The National Park Service has consulted with the Alaska State Historic Preservation Office since initiating this project. Advance copies of the various drafts of the document were provided for their review to initiate and plan for coordination survey, eligibility, effect, and mitigation of possible cultural resources in the proposed project areas early in the planning process. All implementation actions that could affect

historic properties as defined under the National Historic Preservation Act and the 2008 Nationwide Programmatic Agreement will be evaluated through consultation with the state historic preservation officer. These actions include, but are not limited to, proposed changes to historic buildings and ground-disturbing activities.

## **Consultation with Native Tribal Governments**

The National Park Service sent copies of the draft plan and letters requesting government-to-government consultation to four affected Native tribal governments, one of whom is the Carcross/Tagish First Nations tribe in Carcross, Canada. Several meetings were held between 2012 and 2013 with tribal governments in Skagway and Haines to discuss key components of the Dyea Area Plan and EA that were of interest to the local Federally Recognized tribes.

## **Next Steps**

A final decision by the NPS Alaska Regional Director may come in the form of a Finding of No Significant Impact (FONSI), which would take into account any new information and public comment, and select an alternative to implement. If a FONSI is approved, it would be sent to those individuals and organizations that commented during the public review period, and it would be available on the park's website (<http://www.nps.gov/klgo>) and the NPS park planning website (<http://parkplanning.nps.gov/>).

Consultation and concurrence from SHPO is required for a determination of effects prior to the final decision and FONSI signing.

The NPS has determined that there are no Threatened and Endangered species in the project area; therefore Section 7 consultation with the USFWS is not required.

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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 protect cultural and natural resources, and improve visitor safety and experience by developing a plan that identifies priorities and provides guidance for cultural and natural resource management and visitor services within the historic townsite of Dyea in Klondike Gold Rush National Historical Park.

#### 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 managing NPS lands in Dyea according to direction the 1996 *KLGO GMP/Development Concept Plan* and the Superintendent's Compendium (NPS 2013a). This alternative proposes the following actions:

Under the Proposed Action, the park would adopt a Dyea Area Plan. NPS lands in Dyea would continue to be managed according to direction in the 1996 *KLGO GMP/Development Concept Plan* and the Superintendent's Compendium (NPS 2013a) and high priority actions would be implemented as proposed in the CLTR (NPS 2006) and the CLR (NPS 2013b). In addition to the actions common to all alternatives, this alternative proposes the following actions:

#### *Cultural Resources*

- The Kinney Toll Bridge (McDermott) Cabin would be moved to the intersection of Dyea Road and Dyea Flats Road, restored, and adaptively reused for an interpretive wayside and orientation node for the Historic Townsite.
- The park would identify a relocation area for graves in the event that the state finds it necessary to relocate them away from the river. Any relocation activity would be carried out with appropriate landowners and relevant parties including the state, tribes, and family members.
- The cultural landscape would be managed according to the Secretary of the Interior Standards using specific recommendations related to vegetation, trail development, and visual character found in the CLR.

#### *Visitor Access and Experience*

- A new multiuse River Trail would connect the relocated Kinney Toll Bridge (McDermott) Cabin with the core historic townsite trail system. This separate hike/bike trail would be developed by adaptively reusing portions of existing social trails that do not currently adversely affect resources, and adding approximately one mile of new trail in order to connect with the core historic townsite trail.
- Improvements would be made to facilities at the Chilkoot Trailhead. Trail surfaces at the Chilkoot Trailhead connecting trailhead facilities would be capped with gravel. Benches and additional interpretive displays would be incorporated into the trailhead facilities. A 500ft reroute of the trail connecting the long term parking and the campground would be improved through brushing and resurfacing creating a more

direct connection. A majority of the trail will remain in place and improved with resurfacing.

- The existing Dyea Flats Road and Slide Cemetery Road would be brought up to NPS and FHWA standards by correcting subterranean deficiencies, sectional inconsistencies, drainage problems and sightline obstructions. Sightlines would be maintained by clearing vegetation. Portions of the Dyea Flats Road might be realigned or moved to avoid damage from river erosion.
- A set of trails would be developed within the core historic townsite referencing its original street grid. Selected portions of the historic street grid based on the traditional 50 x 100 foot blocks would be re-created by clearing certain historic street segments. Selected street segments would be connected using a street centerline trail alignment that would minimize tree removal and convey a sense of place. The historic streets would be selectively and sequentially cleared after an analysis of the vegetation, topography, archeology, interpretive foci and existing development was completed to assist in the identification of those street segments that minimize resource impacts and optimize visitor experience. The layout in Map 2 is representative of what trail development might look like. Exact trail width and configuration would be developed in consultation with historic landscape architects and other technical experts. The trail system would link with other trails in the historic townsite as well as with trails leading onto the municipal-owned “flats” area. A combination of trails and interpretive markers or GPS-based information would define and interpret the historic street grid at Dyea.
- “Gathering places” would be created at appropriate trail locations in the core historic townsite to control social trail development and reduce crowding on the trail in areas where tour groups stop for presentations.
- Existing trails in the core historic townsite that would not be incorporated into the new trail system would be closed and allowed to naturally revegetate (about 3,420 feet)., If no adverse impacts to subsurface archaeological deposits occur, active revegetation may be used. .
- The park would design and implement a wayside exhibit plan using the parks graphics collection to help visitors visualize the size and layout of the former town. The wayside exhibits would be located to place historic photos close to the point where they were taken. The wayside exhibit plan would be developed in conjunction with the core historic townsite trail development and would follow to the extent practicable recommendation of the CLR for wayside construction in the core historic area.

The park would work with partners to develop a horse trail to the Dyea Flats on the west side of the current Dyea Flats Road. The park would seek municipal support for the necessary connecting route on the municipal property, including financial support for construction and long

term maintenance. If a sustainable agreement could be achieved, and fund sources identified between the municipality or other partners and the park, the park would assist with further planning, design, and compliance to construct a horse trail.

- The park would promulgate regulations permanently closing the core historic townsite (approximately 80 acres) to all horse use to permanently protect irreplaceable cultural landscape features and artifacts. Horse traffic would continue to be allowed in the Dyea Historic Townsite outside of the core historic townsite. Commercial horse traffic would be restricted to an alternate route designated for commercial horse use outside the Dyea Core Historic Townsite.
- Commercial services would be managed according to the combined guidance of the 1996 GMP and the clarifications and update in the Dyea Area Plan. The plan would set Commercial Use Authorization activity limits such as hours of operation, group size, and daily tour caps.

### Infrastructure

In general, permanent park operations facilities would be confined to small, unobtrusive areas within Dyea outside the historic townsite. All constructed facilities would be designed in character with the cultural landscape.

#### *New Dyea Historic Townsite Entrance Area*

- A new historic townsite entrance area would be developed at the intersection of Dyea and Dyea Flats Road. The entrance area would include parking for up to 5 vehicles (including parking for the River Trail to the core historic townsite), public restroom facilities (two vault toilets), and small scale features such as benches and signs.
- The entrance area would include the relocated and rehabilitated Kinney Toll Bridge (McDermott) Cabin as an interpretive wayside and orientation node. The Matthews Cabin would be interpreted as part of this site development.

#### *Slide Cemetery parking and toilet*

- The Slide Cemetery parking area expansion would include parking spaces for two additional vehicles, for a total of five vehicles, and one vault toilet. The vault toilet would be located near the extreme edge of the expanded parking area keeping the project area compact and reducing the total footprint. The vault toilet would replace the existing outhouse. The parking area would be re-contoured followed by a 3 inch course of D-1 gravel to raise the level of the parking surface. This would provide a smooth driving surface, allow for increased drainage away from the parking area, and provide enough gravel to perform seasonal maintenance.

### *Maintenance Support Facility*

- The aging Kalvick garage located south of the Kalvick house would be replaced by a maintenance support facility on federally owned property. The primary purpose of these facilities would be to support park operations in Dyea and on the Chilkoot Trail. The maintenance support facility building (approximately 30 x 40 feet) would include two garage doors and would house vehicles and general items. A fenced yard, approximately 15,000 to 25,000 sf, surrounding the building would provide exterior workspace, storage of road and trail construction material (short and long term), and ancillary uses. This area has not been identified as having a high degree of integrity as a historic or cultural landscape.
- The park would replace substandard park housing in Dyea with a new bunkhouse for seasonal park employees on park land adjacent to other park housing identified in the GMP as appropriate for support facilities. The single-story, wood-frame dormitory would have seven single-occupancy bedrooms, two full bathrooms, a kitchen, common room, and laundry facility. The structure would be built on park land adjacent to other park housing identified in the GMP as appropriate for support facilities.

This EA analyzes 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. 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)

#### **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;

- The action’s possible effects 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. NPS lands in Dyea would continue to be managed according to direction in the 1996 *KLGO GMP/Development Concept Plan* and the Superintendent’s Compendium (NPS 2013a). Federal and State regulations provide protection for fish and wildlife populations within KLGO.

There would not be prescriptions for specific desired resource conditions and visitor opportunities. Consequently the “No-Action” alternative 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 improving access in the Dyea area through the development or improvement of a combination of roads and trails, improved facilities to support park operations in Dyea and on the Chilkoot Trail. No subsistence is known to occur in these areas. Improved access and infrastructure 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, the status quo would not significantly limit or restrict access to subsistence uses on Federal public lands within the region.

The “Proposed Action” alternative is not expected to significantly limit or restrict the access of subsistence users to subsistence uses on Federal public lands within the region. Federal and State regulations assure the continued viability of fish and wildlife populations.

3) Increase in Competition:

The “No Action “ alternative, maintaining the status quo would not result in increased competition for fish, wildlife or other resources that would significantly impact subsistence users on Federal public lands within the region.

The “Proposed Action” alternative would not result in increased competition for fish, wildlife or other resources that would significantly impact subsistence users on Federal public lands within the region. Federal and State regulations assure the continued viability of particular fish or wildlife populations.

## VI. AVAILABILITY OF OTHER LANDS

The availability of other lands outside and within the park has 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 Dyea and 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 would not result in a significant restriction of subsistence uses. The “No Action” alternative would also not result in a significant restriction of subsistence uses.

## REFERENCES:

National Park Service, U.S. Department of the Interior

- 1996 *General Management Plan Development Concept Plan and Environmental Impact Statement*. Klondike Gold Rush National Historical Park.
- 2000 Resource Management Plan, Klondike Gold Rush National Historical Park, Skagway, Alaska.
- 2001a *Ecological Subsections of Glacier Bay National Park and Preserve, Sitka National Historical Park*. Klondike Gold Rush National Historical Park. Alaska Region Inventory Monitoring Program.
- 2001b *Cultural Landscape Inventory. Dyea Historic Townsite*. Klondike Gold Rush Historical Park.
- 2005 *Commercial Use Authorizations: Interim Guidelines*. Available at: <[http://www.nps.gov/akso/management/concession\\_docs/documents/CUAInterim%20Guidelines.pdf](http://www.nps.gov/akso/management/concession_docs/documents/CUAInterim%20Guidelines.pdf)>.
- 2006 *Dyea Historic Townsite Cultural Landscape Treatment Recommendations*. Klondike Gold Rush National Historical Park. Alaska Regional Office, National Park Service.
- 2013a *2013 Superintendents Compendium. Klondike Gold Rush National Historical Park*. National Park Service. Published Report. Klondike Gold Rush National Historical Park.
- 2013b *Cultural Landscape Report for the Dyea Historic Townsite and Related Properties*. Report on file. Klondike Gold Rush National Historical Park.

**APPENDIX B:**  
**FLOODPLAINS STATEMENT OF FINDINGS**  
**Dyea Area Plan and Environmental Assessment**

National Park Service  
Klondike Gold Rush National Historic Park

**Recommended:** \_\_\_\_\_  
Superintendent Date

**Concurred:** \_\_\_\_\_  
NPS Water Resources Division Date

**Approved:** \_\_\_\_\_  
Alaska Regional Director Date

## **Introduction**

### *Proposed Action*

The National Park Service (NPS), Klondike Gold Rush National Historical Park (KLGO) is proposing to protect cultural and natural resources and improve visitor safety and experience by developing a plan that identifies priorities and provides guidance for cultural and natural resource management and visitor services within the Historic Townsite of Dyea. The proposed action would include a combination of trails, road improvements and permanent facilities which would be confined to small unobtrusive areas within Dyea. Proposed infrastructure would include a new entrance area, seasonal employee bunkhouse, maintenance support facility, parking and toilet replacement. These facilities are classified as Class I actions under the NPS floodplain policy (DO-77).

### *Site Description*

The Dyea Historic Townsite is located in the lower Taiya River watershed, near Skagway, Alaska. The footprint of the historical townsite lies mostly on the west side of the Taiya River, with a small portion located north of the river (Figure B-1). The eastern, northern and western portions of the historic townsite are within the estimated 100-year floodplain. The central portion of the historic townsite is on a ridge of land that has a higher elevation than the estimated 100-year flood elevation. The proposed permanent facilities (visitor service facility, seasonal employee bunkhouse, maintenance support facility, parking and toilet replacement) would be located within the estimated 100-year floodplain (Figure B-1).

### *Floodplain Values*

Values associated with floodplain use include recreation, such as hiking, site seeing and hunting. Floodplain values also include wildlife habitat for a diversity of species. In addition, floodplains play a necessary function in the overall adjustment of a river system. Floodplains not only influence the hydrology of a watershed by dissipating floodwater energy, but also serve as a temporary storage component for sediment eroded from the watershed.

Currently, a mid-age stand of Sitka spruce dominates the project area. The forest canopy is composed of medium and large sized Sitka spruce and averages about 25 feet in height. Other tree species in the project area include cottonwood, paper birch and willow.

### *Nature of Flooding and Associated Floodplain Processes*

Flooding in the lower Taiya River watershed can result from precipitation events, rain on snow events and glacial dam outburst of glacial lakes located in upper headwater tributary basins. It is important to note that this floodplain assessment does not include events associated with glacial dam outburst. The USGS Gauging Station at the Taiya River bridge is not surveyed to local control; however, based on the period of record and gauge observations during high water events, the National Weather Service Advanced Hydrologic Prediction Service states that a gauge reading of 16.5 feet (relative to the gauge, not to channel or ground elevations) is

considered flood stage. A gauge reading of 16.0 is considered an action stage for evacuation of the Dyea and lower Taiya River area. Although the USGS gauging station has not been operated continuously, there are fourteen historical high water crests that exceed 16.5 feet on the gauge since 1971 (National Weather Service 2009). These events have ranged from 16.88 feet (recorded in 1973) to 19.86 feet (recorded in 2002).

The lower Taiya River is characterized as having an anastomosing channel pattern. Anastomosing rivers are sinuous, low-gradient channels consisting of multiple interconnected branches transporting suspended and mixed bedloads (Ritter 1978). One main channel is characteristic of anastomosing channels, with only overbank flow feeding smaller branches during higher flows. The nature of the drainage pattern and the occurrence of debris jams in the main channel and overbank channels create a complex set of hydraulic conditions. The extent of woody debris in the channels and the debris jams that result will influence the extent of flooding in a particular area during a given flood event.

### **Justification for use in the Floodplain**

The proposed actions are related to the management of the Dyea Historic Townsite, which is located within the estimated 100-year floodplain. Visitor facilities for the Dyea Historic Townsite cannot be located elsewhere because all NPS managed land within Dyea and Skagway are within the floodplain. Lands in the Chilkoot Trail and White Pass units are not suitable for this proposed infrastructure. Acquiring new land outside either of these two floodplains would be cost prohibitive and inefficient to develop and use.

Maintenance facilities and limited employee housing are available in Skagway, approximately 8 miles from Dyea. Lack of available housing for sale or lease on the commercial market in Skagway requires alternative government housing (Hughes et al. 2013). Transporting maintenance equipment from Skagway to Dyea regularly is costly and time-consuming.

### **Site-Specific Flood Risk**

The Dyea Historic Townsite lies within the lower Taiya River watershed. The lower Taiya River valley is less than a mile wide, and the topographic conditions are relatively gentle and flat. The preliminary floodplain assessment was performed using available hydrologic data and information, including United States Geological Survey (USGS) discharge data from the Taiya River Gauging Station, USGS Regional Regression Equations, and Light Detection and Ranging (LIDAR) data. Hydrologic field data was not collected as part of this assessment.

#### *Recurrence Interval*

The majority of the lower Taiya River valley, including large portions of the Dyea Historic Townsite, lies within the 100-year floodplain. A 100-year flood is defined as the flood elevation that has a 1% probability of occurring in any given year. The rate at which flooding occurs will be related to the source. Flooding associated with a precipitation event would likely take more

time to reach flood stage in the lower Taiya River valley as compared to flooding from a glacial dam outburst.

*Hydraulics of Flooding at the Site*

The water surface elevation at each cross section, as well as main channel and average overbank velocities associated with the 100-year recurrence interval are summarized in Table B-1, and the area estimated for inundation is depicted in Figure B-1. Due to the surface roughness (trees, brush, surface undulations) of the floodplain, it is predicted that floodplain velocities will typically be less than 1-foot per second; however, main channel velocities are likely to be extreme, capable of transporting trees and other debris. Channel bottom and banks are likely to erode, altering channel patterns and shapes in some areas.

**Table B-1: Summary of Estimated Water Surface Elevations and Velocities Associated with 100-Year Recurrence Interval**

Cross Section	Minimum Channel Elevation (feet)	Water Surface Elevation (feet)	Main Channel Velocity (feet per second)	Floodplain Average Velocity (feet per second)	
				Left Overbank	Right Overbank
15	31.7	41.5	5.5	0.4	0.4
14	28.3	41.2	4.7	0.4	0.4
13	26.7	40.8	5.4	0.5	0.3
12	25.3	40.2	7.1	NA	0.5
11	24.6	40.1	4.6	0.3	0.3
10	24.1	36.3	16.5	1.6	1.0
9	20.2	28.9	8.1	0.6	0.5
8	19.3	27.4	9.6	0.8	0.4
7	15.2	24.8	6.8	0.7	0.5
6	14.9	24.2	6.5	0.4	0.5
5	14.8	23.6	8.3	0.3	0.7
4	12.0	21.0	10.3	1.1	0.6
3	11.6	19.4	8.6	1.0	0.5

The minimum channel elevation and the water surface elevation are provided in Table B-1 to indicate the approximate depth of water in the channel during the 100-year flood. Water depths across the portion of the project area likely to be inundated during a 100-year event range from approximately 2 feet to as high as 10 feet (Figures B-2 through B-15). In the vicinity of the proposed seasonal bunkhouse and maintenance support facility, water depths are predicted to be between 2 to 4 feet (Station 1300, Figure B-4), and velocities are predicted to be 0.3 feet per second. At the proposed Dyea Visitors Center, water depths are predicted to be between 8 to 10 feet (Station 1300, Figure B-6), and velocities are predicted to be 0.3 feet per second. Flooding in the vicinity of the proposed facilities is likely to be widespread across most of the valley;

therefore, the base flood elevation would not be affected as the result of the construction of the proposed facilities.

#### *Time Required for Flooding to Occur*

The USGS Gauging Station at the Taiya River Bridge is not surveyed to local control; however, based on the period of record and gauge observations during high water events, the National Weather Service Advanced Hydrologic Prediction Service states that a gauge reading of 16.5 feet (relative to the gauge, not to channel or ground elevations) is considered flood stage. A gauge reading of 16.0 is considered an action stage, meaning advisories are prepared and issued in the event that evacuation becomes necessary. For a given event, the gauge would be monitored by the National Weather Service for predicting the flood level and time for flooding to occur. If a flood notification is issued, NPS preparations for evacuating visitors from the Dyea area would be handled accordingly.

#### *Opportunity for Evacuation*

With the gauging station providing real-time data for flood prediction, evacuation procedures would likely be successful, provided that visitors are within vicinity of the road and trail system within the historic area. In the event of a 100-year or larger flood, the roads and the Taiya River Bridge would likely be under water and closed to vehicular traffic after evacuation for public protection. Since there is only one bridge, the evacuation route is limited to one road out of the area. It would be critical for the NPS to evacuate visitors in the event the action stage is issued by the National Weather Service.

#### *Geomorphic Considerations*

As stated above, the lower Taiya River is characterized as having an anastomosing channel pattern. The nature of the drainage pattern and the occurrence of debris jams in the main channel and overbank channels create a complex set of hydraulic conditions. The extent of woody debris in the channels and the debris jams that result will influence the extent of flooding in a particular area during a given flood event. Additionally, debris jams can increase channel and bank erosion by redirecting flow.

### **Flood Mitigation Plans**

Construction activities within the estimated 100-year flood plain include a Dyea Visitor Contact Station, maintenance support facility and a seasonal bunkhouse. The storage facility and bunkhouse are located north of the Taiya River Bridge (Figure B-1), while the Visitor Contact Station is west of the bridge on the Dyea Road. It is not anticipated that these facilities would have an impact on the floodplain base elevation. Mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be adhered to during and after the construction. If required, permits with other federal and cooperating state and local agencies would be obtained prior to construction activities. After

construction activities are completed, the sites would be returned as close as possible to natural contours; floodplain fill and grading requirements would be minimized. If a flood notification is received from the National Weather Service, people within the affected flood area would be evacuated. The area would be closed until the flood event had subsided and authorities deem the area safe for the public to return.

## Summary

Based on the preliminary floodplain assessment, it appears that the Dyea Historic Townsite and proposed facilities are within the 100-year floodplain of the lower Taiya River (Figure B-1). The estimated water surface elevations associated with the 100-year recurrence interval should be considered preliminary and approximate. The assessment does not take into account flood events associated with glacial lake outburst, nor does it factor in tidal influence. Additional analysis would be required to account for these processes and how they would impact floodplain water surface elevations.

Furthermore, the preliminary assessment assumes that floodwater is conveyed in all areas below the flood water surface elevation. While some of these low lying areas are active channels that convey water during high flow periods, further analyses would be required to establish if these geomorphologic features are interconnected and actually convey water at the 100-year flood stage.

Based on the predicted main channel velocities, it is likely that, depending upon the location of large woody debris jams, increased bank erosion would occur during the 100-year event. Flow that is conveyed in active or inactive channels across the floodplain could increase erosion and channel migration, depending upon stream velocities, the occurrence of log jams, and the density of vegetative cover. Water depths across the portion of the project area likely to be inundated during a 100-year event range from approximately 2 feet to as high as 10 feet (Figures B-2 through B-15).

While the location of proposed structures within the flood zone would result in risks from the possibility of flooding, methods to minimize flood damage would be incorporated into the overall design of the facilities. In addition, efforts to preserve existing vegetation within the floodplain would be undertaken as standard procedure during site preparation and construction. Therefore, floodplain values would be protected to the maximum extent possible and potential flood hazards would be minimized.

In accordance with Executive Order 11988 for the protection of floodplains, mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be strictly adhered to during the design, construction, and operation of the proposed facilities to the historic area. The NPS finds that no long-term adverse impacts to the 100-year designated floodplain would occur from the proposed actions.

## REFERENCES:

National Weather Service

- 2009     *Advanced Hydrologic Prediction Service Website*. Retrieved November 11 from:  
<<http://aprfc.arh.noaa.gov/ahps2/hydrograph.php?wfo=pajk&gage=tyaa2&view=1,1,1,1,1,1,1,1&toggles=10,7,8,2,9,15,6> =>.

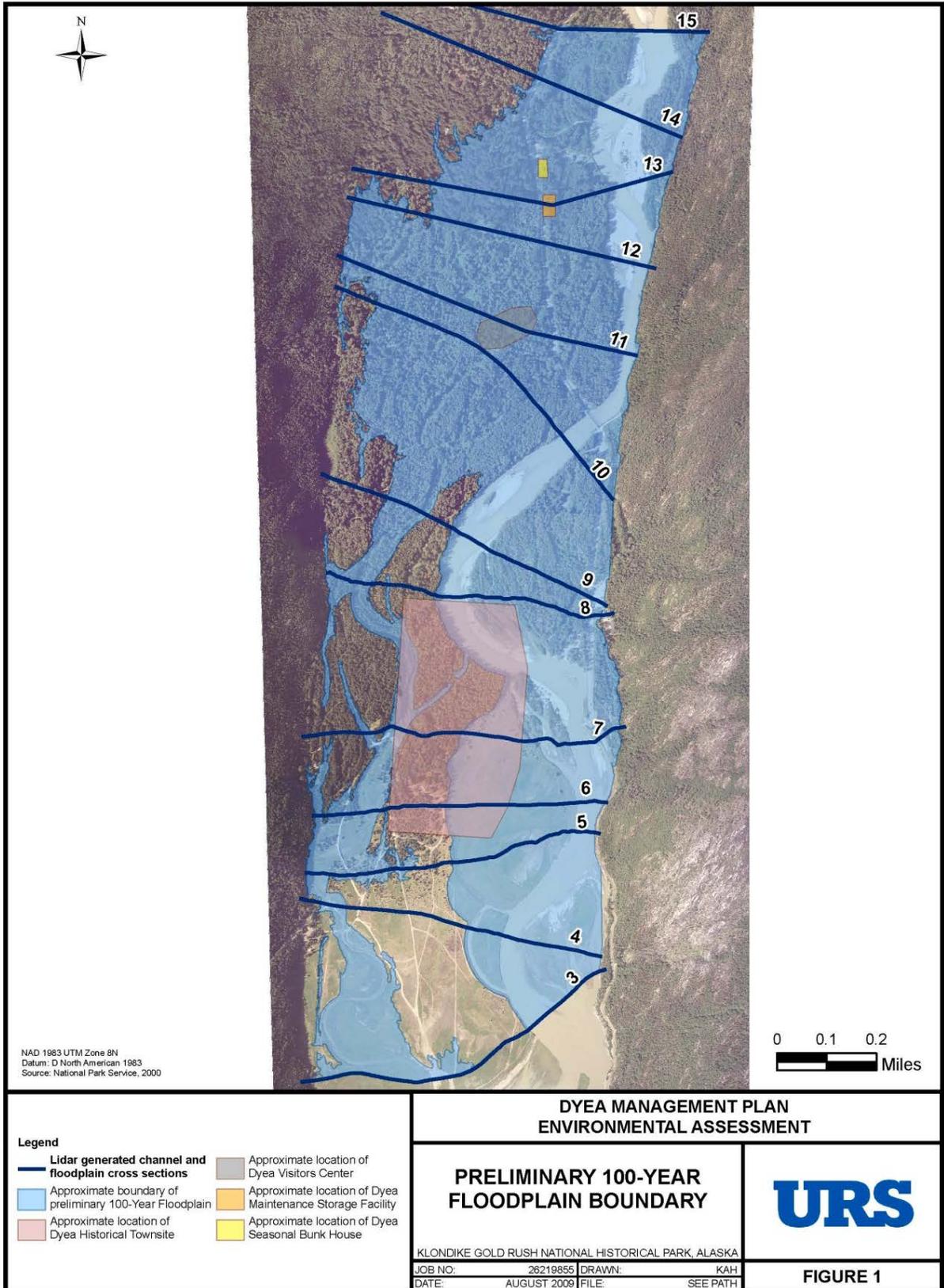
Ritter, D. F.

- 1978     *Process Geomorphology*. (2<sup>nd</sup> Ed): Dubuque, Iowa, William C. Brown, 546 p.

Hughes, Pamela J., Eve M. Meek, Charles L. Horne III, Jennifer H. Owji, and Kelly L. Terrell

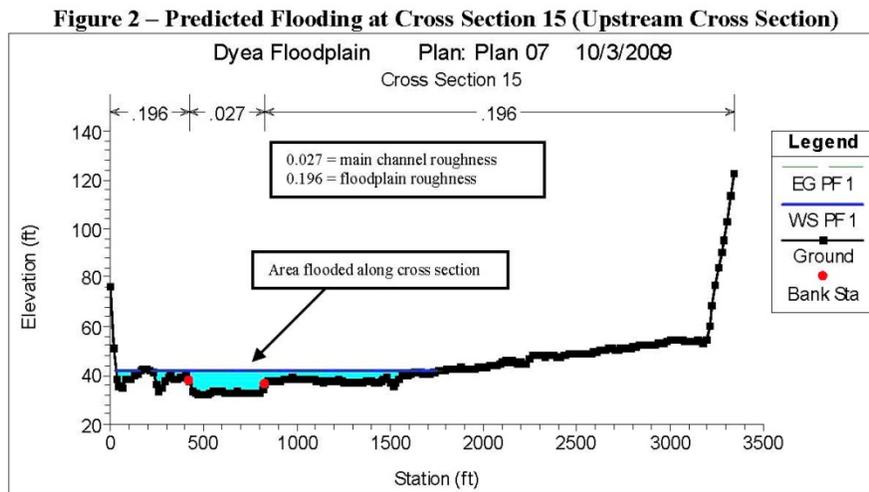
- 2013     *Klondike Gold Rush National Historical Park Housing Needs Assessment and Certification*. Published Report- NPS17T44. Prepared for the National Park Service. LMI. McLean, VA.

**Figure B-1: Preliminary 100-Year Floodplain Boundary**

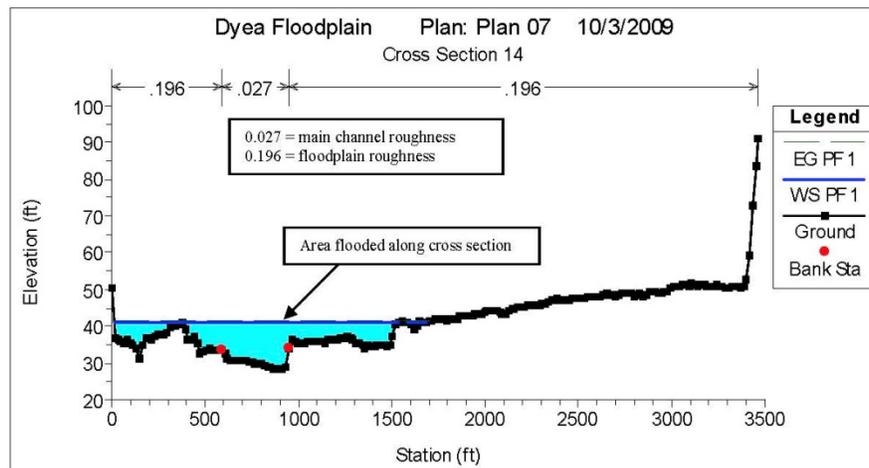


**Figures B-2 – B -15: Lower Taiya River Channel and Floodplain Cross Sections  
100-Year Recurrence Interval**

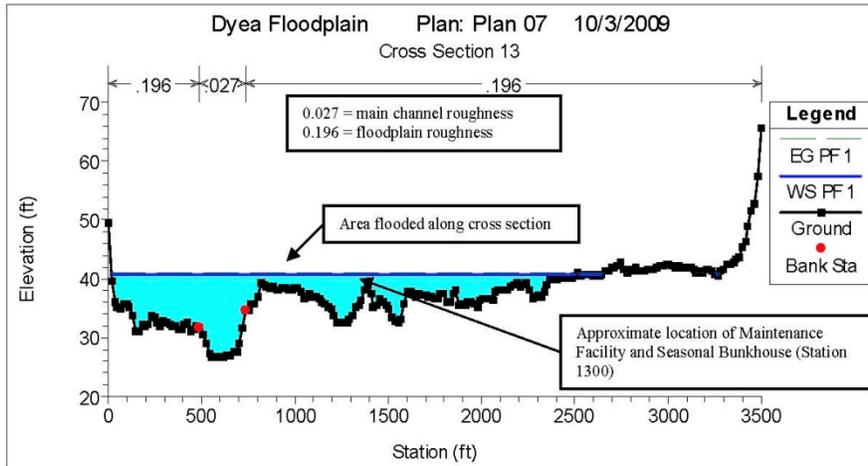
1. EG PF 1 – Energy grade line for profile 1 (the 100-year event), represented by the green dashed line. Recurrence
2. WS PF1 – Water surface elevation for 100-year event, represented by the blue solid line.
3. Ground surface is represented by the black line with black square symbols.
4. Top of main channel banks represented by red dots.
5. Floodplain and main channel hydraulic roughness values displayed across top of graph.



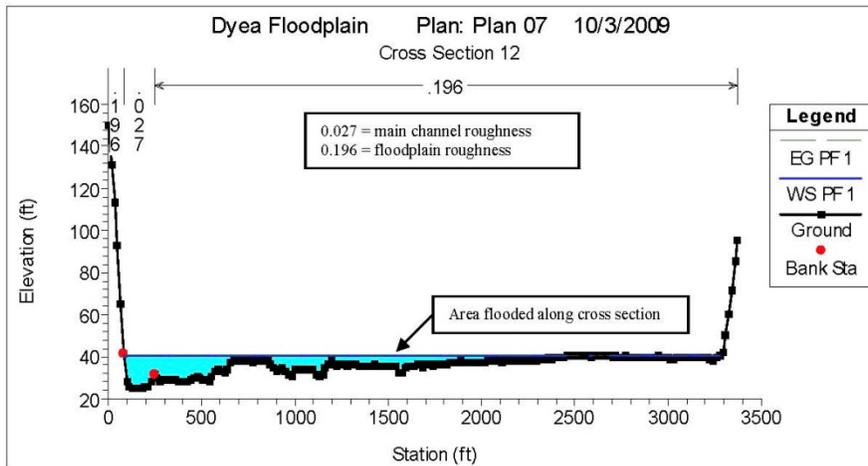
**Figure 3 – Predicted Flooding at Cross Section 14**



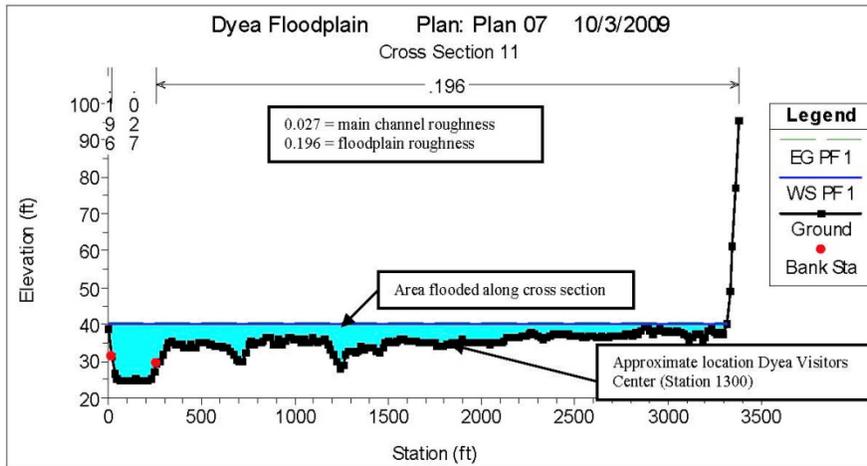
**Figure 4 – Predicted Flooding at Cross Section 13**



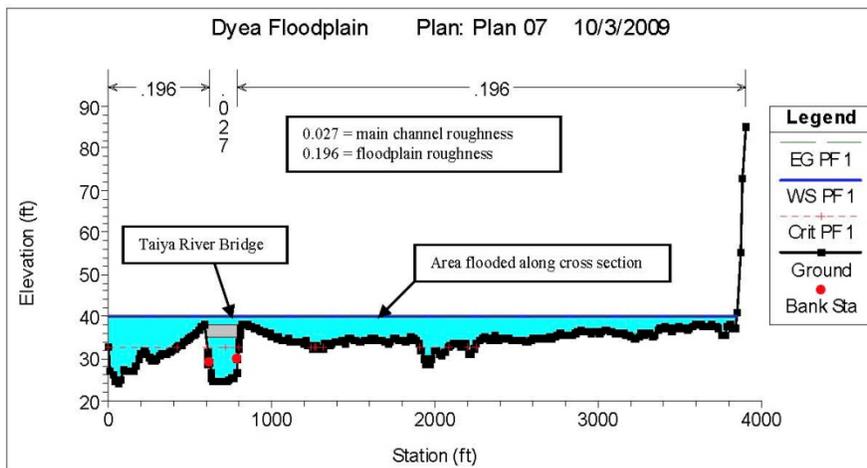
**Figure 5 – Predicted Flooding at Cross Section 12**



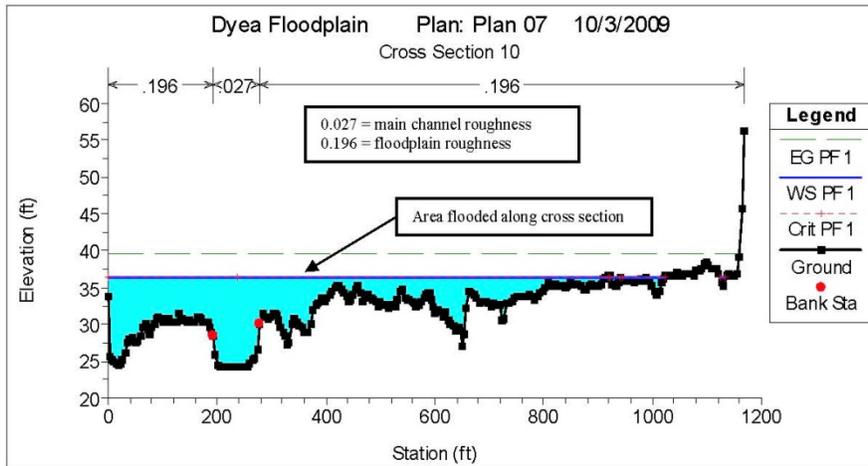
**Figure 6 – Predicted Flooding at Cross Section 11**



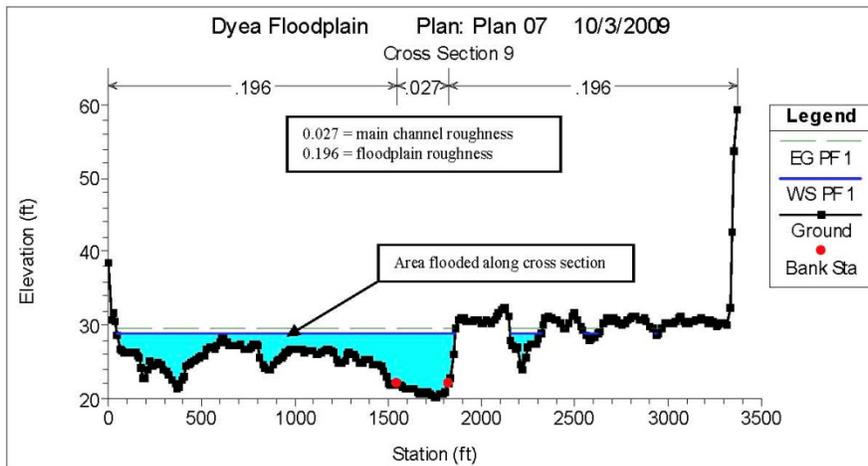
**Figure 7 – Predicted Flooding at Cross Section 10.5 (Taiya River Bridge)**



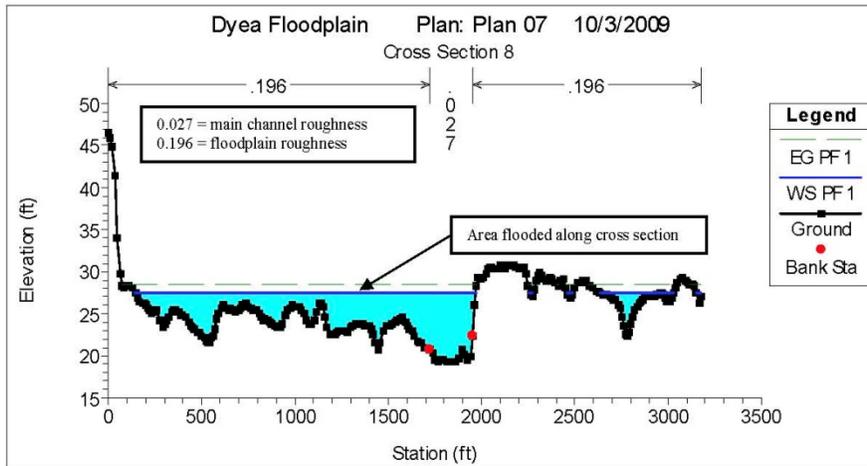
**Figure 8 – Predicted Flooding at Cross Section 10**



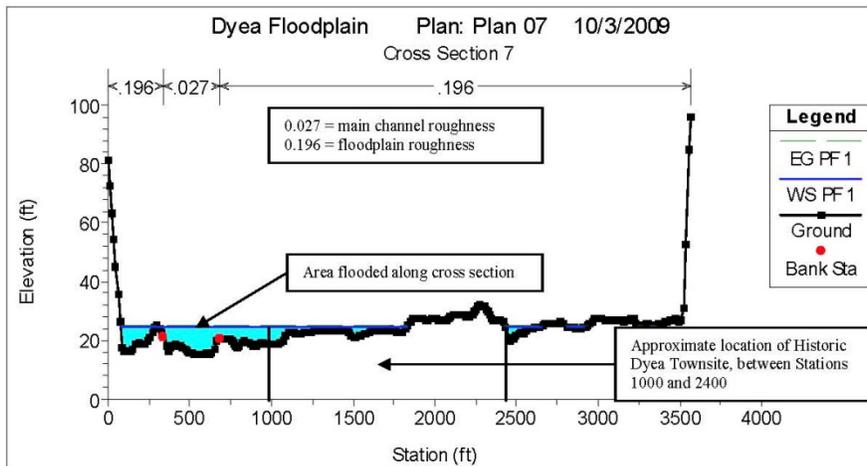
**Figure 9 – Predicted Flooding at Cross Section 9**



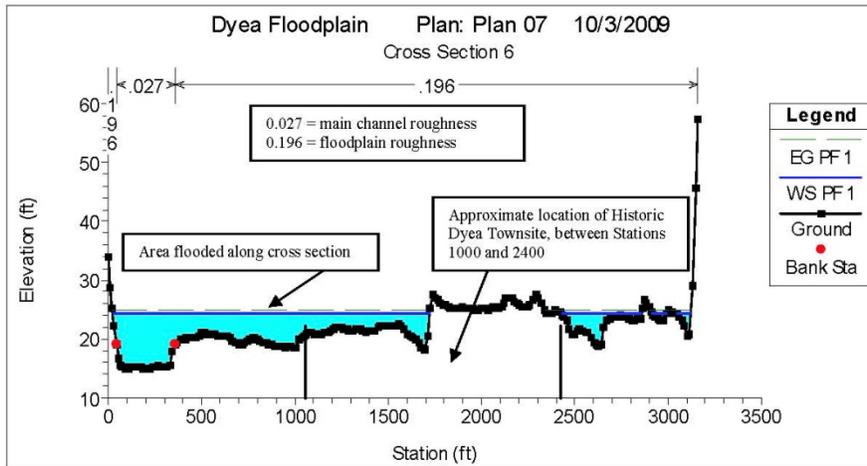
**Figure 10 - Predicted Flooding at Cross Section 8**



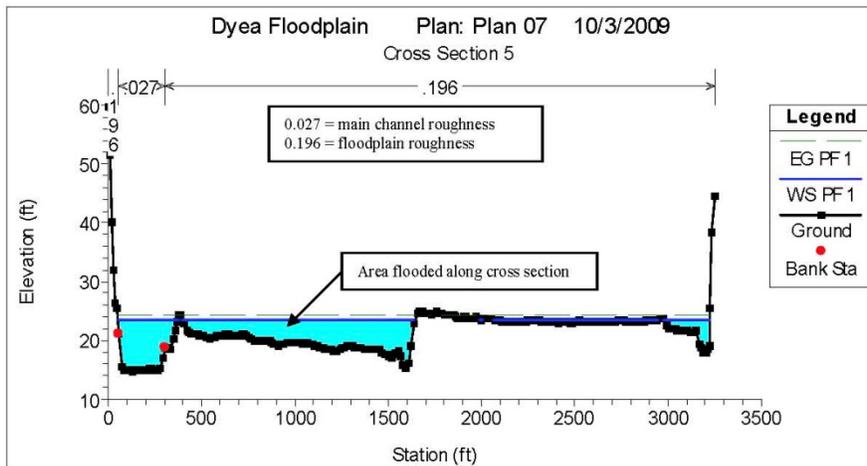
**Figure 11 - Predicted Flooding at Cross Section 7**



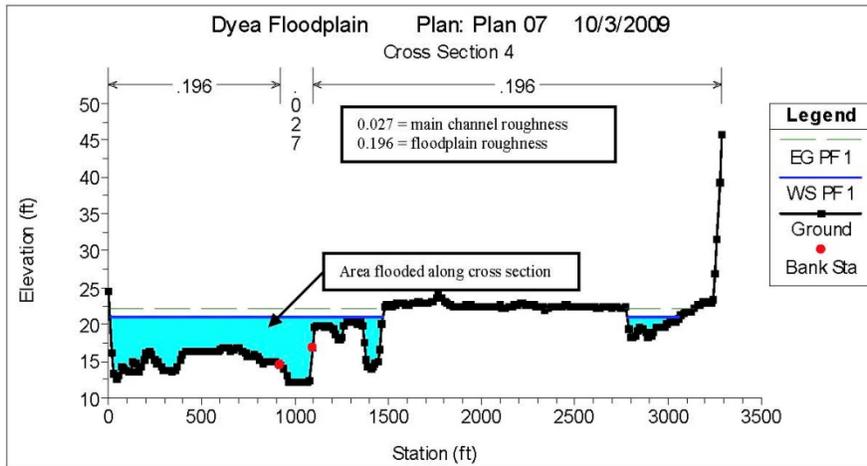
**Figure 12 - Predicted Flooding at Cross Section 6**



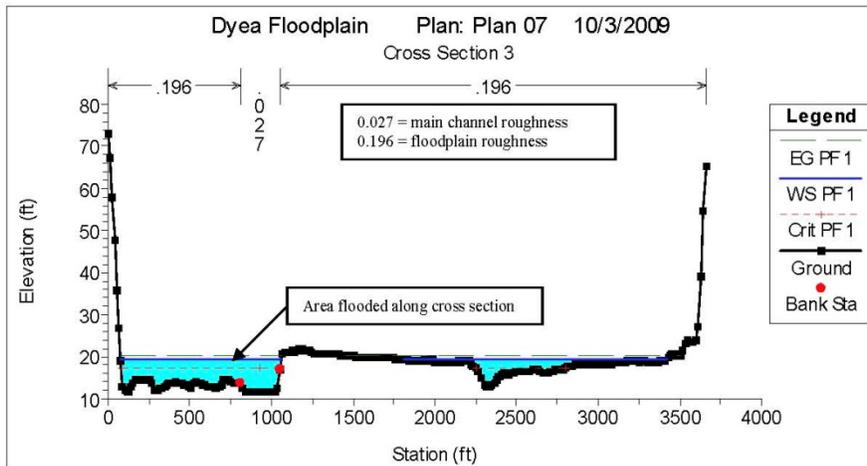
**Figure 13 - Predicted Flooding at Cross Section 5**



**Figure 14 - Predicted Flooding at Cross Section 4**



**Figure 15 - Predicted Flooding at Cross Section 3 (Downstream Cross Section)**



## APPENDIX C:

### Cost Estimates including Total Cost of Facilities

Action Alternative 1	Phasing 2	Action Alternative	TOTAL <sup>3</sup>	Square Feet	Const Costs	Operations & Maintenance		Annual Rent	TCFO - 50 years
						50 year O&M	Annual O&M		
8	Phase I	Install new wayside exhibits throughout Dyea	43600						
1		Reconstruct Old Dyea Townsite Road	177100						
8	Phase II	Rehabilitate Dyea Historic Town Site Trail	247600						
7		Slide Cemetery improvements: Install 2 new parking spaces and SST at Slide Cemetery	89400						
2		Install visitor contact station infrastructure (5 parking spaces, SSTs, access road/driveway)	212600						
4		Build new River Trail	287800						
3		Relocate and Rehabilitate Klondike Gold Rush era Cabin	334000						
6	Phase III	Replace substandard housing: Kalvick bunkhouse	967600	1600	1000000		12600	4000	1430000
12		Chilkoot Trailhead improvements, improve access trail	65400						
5		Construct maintenance support facility	272100	1000	272100	750000	15000		1022100
<b>Grand Totals</b>			<b>2,697,200</b>	<b>2,600</b>	<b>1,272,100</b>	<b>750,000</b>	<b>27,600</b>	<b>4,000</b>	<b>2,452,100</b>

1 Number corresponds with maps

2 Phase I Fiscal Year (FY) 14-15; Phase II FY16-19; Phase III FY 19-21 as funding allows

3 Class C Cost Estimate including 5% compliance and 4 % annual escalator

## Operational Costs and Cost-Benefit Analysis

New facilities included in the proposed plan such as housing and a maintenance support structure are primarily designed to replace obsolete and/or substandard structures. Construction and ownership costs are included in the table above. Additional operational costs would be offset by the efficiencies gained. For example, the new maintenance facility would provide additional storage and reduce the need to move equipment back and forth between Skagway and Dyea. An improved road to the townsite would require less annual maintenance.

New visitor facilities such as the entrance feature, and new wayside exhibits and trails would increase maintenance operations costs in Dyea by approximately \$5,000 - \$10,000 per year. Increased resource and visitor protection costs would be negligible. While an increase in visitor use could be expected, the improved facilities and visitor orientation information would enhance resource protection.

## **APPENDIX D:**

### **History of Gravesites in Historic Dyea**

Dyea Town Cemetery  
Theresa Thibault, Chief of Resources, KLGO  
Updated December 2013

Based on historic as well as modern evidence, there were three known cemeteries in historic Dyea, all of which were within the existing park boundaries. The cemeteries include Slide Cemetery, the original Native Cemetery, and the Dyea Town Cemetery, now sometimes referred to as the Native Cemetery. Both the Slide and Dyea Town Cemeteries are contributing resources to the Dyea and Chilkoot Trail NHL. There is evidence that three African American soldiers were buried in the “military reservation” north of the historic townsite in “Camp Dyea” (Graumann 1977), but this is unsubstantiated and does not describe whether a cemetery existed in the camp. A fourth cemetery was added in 1978, now known as the Relocated Cemetery, when a portion of the graves from the Dyea Town Cemetery were moved.

The original Native Cemetery was located just north of the Dyea Core Historic Townsite in what was known as the Native Village. While there are no known maps that show the exact location of the Native Cemetery, there is historic information that locates the Native Village to the north of the Camp Dyea Military Reservation, but south of the Matthews Cabin. This would put the Native Village location slightly northeast of the Slide Cemetery location and approximately ¼ mile north of the Town Cemetery.

Slide Cemetery contains the remains of the April 1898 Chilkoot Trail avalanche victims as well as at least one other unknown person. It is located northwest of the historic townsite, near the edge of the river valley.

The Dyea Town Cemetery was a burying ground for both Euro Americans and Natives for over twenty years beginning in 1898 and ending in 1921. While there were other cemeteries in Dyea, only the Town Cemetery received burials for more than a few months. The establishment of the Town Cemetery occurred on October 30, 1897, when a citizens' committee decreed that the block between Sixth and Seventh avenues and between Broadway and West streets would be designated for use. No evidence for the use of the area for burials before it was designated as a cemetery has been located. Historic records show the size of the original cemetery block was 220 feet from the east to west and 300 feet from north to south, a standard city block. Burials, however, appear to have been concentrated at the southern half of the block. It appears in at least one historical photograph that Broadway Avenue may have divided the cemetery. In 1918, Harriett Pullen reserved 0.75 acres for the cemetery and its approach, but allotted only 100 feet (east-west) by 66 feet (north-south) for the cemetery itself. At that time, the Taiya River was over two blocks to the east, and open land lay north of the cemetery (Norris and Taylor 1986).

The exact number of people buried in the Town Cemetery is open to considerable conjecture. A formal cemetery register was either never made or has been lost. Some sources give varied estimates as to the number of graves the cemetery held ranging from "20-odd" to 75 people (Norris and Taylor 1986). According to death records compiled by Cooper (2007), and newspaper accounts at the time, a total of 15 people are reported to be buried in Dyea. An additional 17 people may have been buried in Dyea, but this is unclear in the historic record. There is no distinction made regarding whether the burials occurred in the Town or Native cemetery in the death records.

In 1973, Bill Matthews, a Native Alaskan and former resident of Dyea and unofficial caretaker of the Dyea Town Cemetery, requested that the State of Alaska take measures to stop the erosion occurring at the Dyea cemetery since the graves of members of his immediate family and others were in danger of being eroded out by the river. During the early 1970s the park was in the process of being established, with formal designation occurring in 1976. Although the land is within the boundaries of KLGO, the state retains ownership of the land. Mr. Matthews' request resulted in the US Army Corps of Engineers conducting an engineering study for the Alaska Department of Natural Resources (DNR) in 1975 and a recommendation to stabilize the bank. The projected costs for bank stabilization and the potential for construction damage to fish resources caused the State to defer any action.

By April, 1978, a cooperative agreement between the State Historic Preservation Officer and the National Park Service was developed. Consultation under Section 106 of the National Historic Preservation Act resulted in a concurrence determination of "No Adverse Effect" and allowed the relocation of the burials to a safer location. Before the cooperative agreement could be implemented, two families, both Tlingit, objected to the disturbance of the graves. The families claimed lineal descendancy (grandchildren) of (Chief) Klanot/Lunáat' and other, unidentified, ancestors that they believed to be buried in the Dyea Town Cemetery. It should be noted that (Chief) Klanot/ Lunáat' was killed in 1888, long before the establishment of the Town Cemetery. It is possible that the Native Cemetery was established as a result of the "Packer War" of 1888.

Because the family could not distinguish their specific relative's (unmarked) graves from the other unmarked graves it was decided that only marked graves would be relocated as part of this project. In May 1978 a total of nine graves that had identification information were recorded. Of these, only seven had locatable remains that were moved to the newly established "Relocated Cemetery" approximately 50 – 100 feet east of the Slide Cemetery and approximately ¼ mile to the northwest of their original location. The graves of Wilbert Garfield and the Matthews child did not have remains, but their markers were moved. M.F. Henderson's grave was not moved because it was located beneath three substantially sized tree trunks. In addition, one marble monument related to the Mason graves was moved to the new site.

Features that were identified as graves during the 1978 project, but were not marked as to occupant, include a large "concrete grave" (Davis 1978) that, given its characteristics, have led to the speculation that it belonged to a person of import, potentially one of the Tlingit Chiefs reportedly buried in Dyea. Thirteen other features that are identified as potential graves are indicated on the original feature map from 1978. Additional research (Thibault 2009) based on historic photographs from 1898 and 1952 shows that another twelve graves existed in the area.

In 1999, ground penetrating radar (GPR) conducted at the Dyea Town Cemetery indicated the possible presence of at least three unmarked graves (Brauner 2005). One of these graves includes a footboard which apparently was missed during the original inventory in 1978. The location of two of these graves is confirmed by the historic photo evidence, the third is identified in the original feature map, created in 1978 as part of the original relocation effort, as a potential grave. The photo evidence further shows that one of the locations contained two marked graves in 1898. In addition, historic photographs from 1952 show the actual location of Wilbert Garfield's grave slightly northwest from what is depicted on the 1978 feature map, which would perhaps explain the lack of a body in the grave excavated in 1978.

In 2012, Bureau of Indian Affairs (BIA) archaeologists conducted a survey of the grave area to ground truth recent research findings. They found that the estimated location of the river in 2012 was approximately 4 meters to the north. This resulted in the suggestion that four of the graves that were thought to have been washed away are in fact still in existence.

Further, a recently acquired historic photograph (in 2013) shows the clear location of at least one, possibly two, previously unknown graves.

In summary, there is historic evidence for a total of 37-38 graves in Dyea. Of these, seven graves and ten markers were moved (counting the marble monument). Based on the current location of the Taiya River, a total of 12 confirmed graves have washed away since the 1978 move of the marked graves, including the "cement grave" and the Wilbert Garfield grave. There are 4 presumed graves for which there is no historic evidence, but were identified as potential graves during the 1978 survey that also would have washed away. The remaining graves, four of which have GPR confirmation, one confirmed based on historic photo documentation, and the rest unconfirmed but based on the archaeological survey of 1978, are numbered at sixteen. Four of these are at the river's edge.

In 2005, interest in relocating the remaining graves was renewed when one of the remaining graves, with a previously undetected footboard, was observed to be right on the edge of the riverbank. The local, federally recognized tribe brought their concerns to the park, and further discussions have led to the inclusion of a grave relocation strategy in this plan.

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