

2.0 CHAPTER 2: ALTERNATIVES

2.1 Introduction

This section describes three action and a No Action alternative for management of the Kennecott Mines National Historic Landmark (NHL). Each action alternative presents a different means of working towards identified goals through varying combinations of management for historic structure stabilization and preservation, vegetation, transportation/access, and NPS Utilities and Infrastructure. Also discussed in this Chapter are management actions common to all alternatives and actions that have been considered but dismissed from further analysis.

The NPS developed the alternatives for managing the NHL based on the legal, regulatory, and policy direction presented in Chapter 1, combined with the public comments received during public scoping and on the proposed action package. These comments highlighted the important issues and helped narrow the scope of alternative development.

An alternative is not automatically rendered unreasonable if it requires the amending of a park plan or policy; causes a potential conflict with local, state, or federal law; or lies outside the scope of what Congress has approved or funded or outside the legal jurisdiction of the NPS. Sometimes an alternative may be presented so that the analysis can demonstrate that taking such action (or inaction) would result in non-compliance with legal, regulatory, and policy direction.

The following topics are discussed for each alternative:

Zone by Zone proposals (zones are based on the 2001 Cultural Landscape Report and described on page 8 of this EA).

- Archeological Resources
- Vegetation
- Circulation/Access
- Proposed historic structure stabilization/preservation
- Interpretation

Transportation/Access

- Trails

NPS Utilities and Infrastructure

- Water gathering and storage
- Water treatment
- Potable water distribution lines
- Fire suppression
- Sanitary sewer system
- Power generation and distribution
- West side development
- Airport Office

Other

- Jumbo transfer station

- Jumbo mine aerial tramway
- Mudhole Smith cabin
- Jumbo Mine/Root Glacier outhouse
- Cemetery

2.2 Actions Common to All Action Alternatives

2.2.1 Partnerships

The NPS recognizes that a viable and diverse community of individuals and families existed in the area prior to the creation of the NHL, indeed prior to the entire region being designated a national park. NPS will work in partnership with this local community to manage the NHL in such a way as to maintain the character of the local communities of Kennecott and McCarthy. NPS and the Kennecott/McCarthy community define the partnership as an active cooperation trying to achieve **mutual** goals and objectives. The partnership is mutually beneficial.

NPS also recognizes that, as the largest single entity in the NHL, park management activities have the potential to have a greater impact on local residents than the activities of those residents are likely to have on the NHL. NPS will not infringe on the property rights of individuals to conduct any legal activity they choose on their private land within the NHL.

2.2.2 Local Hire

WRST was established by ANILCA. Within that act is a provision in title 13 section 1308(a) whereby Congress directed the Secretary of Interior to establish a program under which “any individual who by reason of having lived or worked in or near a conservation system unit, has special knowledge or expertise concerning the natural or cultural resources of such unit and management thereof (as determined by the Secretary), shall be considered for selection for any position within such unit” without regard to nationwide, standard open hiring procedure.

WRST has a proven track record of utilizing this local hire authority throughout the park and particularly in the McCarthy/Kennecott area. Local hires are invaluable for the local knowledge they bring to NPS programs as well as providing efficiency in housing for remote locations. The National Park Service will continue to look for opportunities to hire locally, while remaining compliant with Federal personnel requirements.

Civic Engagement by Park Employees

WRST recognizes that many of its employees in the NHL are also local residents. Local residents value sound park employment opportunities in the community, and both the park and local community recognize that allegiances to both the local community and NPS can coexist, and that it is mutually beneficial to cultivate those joint allegiances. WRST has developed the following direction in its employee handbook:

Employees at Wrangell-St. Elias National Park and Preserve sometimes find themselves participating in public processes involving park decisions, both as park employee and member of the community. This is sometimes a fine balance. The NPS encourages public participation by NPS employees: “One very important group that is not usually thought of as being part of the “public” is NPS employees. We must recognize the valuable service that our employees provide by informing the public about the NPS mission, issues, and challenges. Because of their expertise and knowledge, we must give employees an

opportunity for meaningful involvement during the decision-making process.” (Director’s Order 75A: Civic Engagement and Public Involvement).

The park encourages public participation by park employees and provides the following guidelines to prevent confusion or misunderstanding:

- Park employees who attend a public meeting during work hours and are NOT representing the park at the meeting need to: 1) get permission from their direct supervisor; and 2) take leave time for the time spent attending the meeting.
- During public meetings, park employees should preface their comments by informing the group whether their comments are being made as an employee representing the NPS or as a public participant.

Those employees representing NPS at any public meeting need to clear their participation with their supervisor.

2.2.3 Communications

In recognition of the irreplaceable value of local knowledge to the development and implementation of NPS policy, and acknowledging that local residents, non-profit organizations, and businesses provide visitor services and contribute to the rich hospitality experienced by park visitors, NPS will establish frequent, on-going communication with the local Kennecott/McCarthy community. The communication protocol will consist of the following elements:

- The Superintendent and/or park planner will be responsible for setting annual spring and fall meetings. These will occur prior to Memorial Day and Labor Day and will be held at the Tony Zak Community building. The spring meeting will be an announcement of all proposed actions for the area that season. The fall meeting will be a review of the season’s actions and expectations for the following year. The fall meeting will emphasize what project planning/compliance might occur during the course of the winter and how or when public involvement might occur. Spring and fall meetings will be intended to be brief and primarily informative, encouraging maximum participation.
- The spring/fall meetings will be supplemented with a series of additional in-depth meetings held in Kennecott/McCarthy during summer months to discuss particular issues of concern. These meetings will be held as needed and advertised at least two weeks in advance. As time and budget allow, these meetings will be structured as working groups in order to share information and open up a productive, conversational dialogue to define issues and brainstorm solutions; as opposed to a “public meeting”.
- Once every five years, WRST will initiate a review of the Kennecott Operations Plan, seeking full community input in advance of adopting any revisions to the current plan. These reviews will focus on any discrepancies between the plan and its implementation.
- A WRST leadership team member will attend each MAC meeting. The WRST leadership team generally consists of the park superintendent and the division chiefs.
- Provide a web-based educational component regarding projects at Kennecott. This will include a generalized overview of how projects are entered into the budget system, and where and when project design, contracting, and NEPA and NHPA compliance occurs. Identify points in the process where there are opportunities for public involvement. These materials will be posted on the park’s website and on the Friends of Kennicott website.

- Continuation of the annual Superintendent’s letter.

The park will inform the community with advanced notice of all issues requiring their input and the schedule and location of all meetings, through announcements at the mail shack and in the local paper, and through the community e-mail database. A list of participants will also be recorded and kept as part of the meeting record. The park will look into creating an email listserve that community members can join or leave at their own wishes.

2.2.4 Covenants and the Architectural Control Committee

The Architectural Control Committee (ACC) was created in 1976, prior to NPS purchases in Kennecott, by the Great Kennecott Land Company to oversee neighborhood covenants in the Millsite Subdivision that are intended to keep the historic atmosphere of Kennecott intact. The Millsite Subdivision’s covenants are described in the Kennicott Subdivision Declaration of Restrictions, dated September 15, 1976. These covenants describe building restrictions, conditions of subdivision easements, composition of the Architectural Control Committee, process for revision of the covenants, and covenant enforcement. Since NPS acquisition of lots in the Millsite Subdivision in 1998, the park’s Superintendent has served as the ACC chair. The covenants are attached to this plan/EA as Appendix C.

The Architectural Control Committee and NPS worked with interested lot-owners during the summer of 2010 to revise the covenants. This effort was dropped due to the highly polarized comments received from lot-owners regarding the proposed changes, which included proposed changes to the composition of the ACC (to provide for more non-NPS representation) and changes to the voting procedure. Consequently, the ACC will continue to operate under the existing covenants for another ten-year period (until 2020). The NPS, as a lot-owner in the Millsite Subdivision, has been and will continue to be a willing participant in future efforts to revise the covenants.

While the ACC may serve to notify lot-owners of non-compliance with covenants, it is not the ACC’s responsibility to enforce the covenants. According to the Declaration of Restrictions, “If any lot owner or their successors shall violate or attempt to violate any of the covenants herein during the period for which they are enforced, it shall be lawful for any person owning any real property subject thereto to prosecute any proceedings at law or in equity against the person or persons violating or attempting to violate any such covenants, and prevent him or them from so doing or to recover damages for such violation.” NPS has the same rights and responsibilities as other Millsite Subdivision property owners regarding covenant implementation and enforcement. The NPS is willing to work with Millsite landowners and other stakeholders on ways to improve management of covenants that maintain their effectiveness, provide for reasonable flexibility, and reduce the need for legal action as a management tool.

2.2.5 Visitor and Resource Protection

Emergency Medical Service (EMS)

The NPS would continue to develop area-wide EMS response in partnership with local individuals, organizations and EMS providers inside and outside the community. The NPS supports the development of an EMS function within the Kennecott-McCarthy Volunteer Fire Department (KMVFD) that would have primary EMS-response duty on private land in the Kennecott-McCarthy area. The NPS would remain the primary EMS provider on NPS-managed lands, but may provide EMS service on non-NPS-managed land, under specific circumstances. The authority for providing EMS assistance to neighboring communities and outside agencies is specifically provided for in 16USC1b(1), “Rendering of emergency rescue, firefighting, and cooperative assistance to nearby law enforcement and fire prevention agencies and for related purposes outside of the National Park System”.

The NPS will seek a cooperative agreement with the KMVFD that would address agency cooperation related to EMS and firefighting response. The NPS will continue to coordinate emergency response training and encourage participation by all interested parties. All EMS functions performed by the NPS would be in accordance with NPS Director's Order #51 (EMS), the WRST Emergency Medical Services Plan and under the direction of the Park EMS Medical Advisor. The NPS supports the Park's EMS Medical Advisor's providing advice and oversight on EMS to the KMVFD and area guide services.

Search and Rescue (SAR)

The NPS would continue to provide SAR response within the NHL and greater park area. Major EMS and SAR incidents can quickly overwhelm local NPS staff resources. Due to this, the NPS supports an on-call EMS/SAR team of non-NPS responders. During an emergency incident, EMS/SAR team members would be hired and paid for the duration of that incident using the AD/Emergency Hire System. During on-call time, EMS/SAR team members are considered volunteers and are not paid. The NPS would continue to provide SAR training to staff and area volunteers. NPS would operate within the Incident Command System. The NPS would work to improve radio communication with other agencies, such as the KMVFD and AK State Troopers.

Fire Response

Protection of structures from wildland fire would be accomplished through the proposed clearing and thinning of vegetation around structures, as well as suppression response from NPS staff and the KMVFD. The NPS would work closely with KMVFD and State of AK Division of Forestry to develop appropriate fire response strategies. The NPS would continue to work with land owners adjacent to NPS-managed lands on fire fuels reduction. A regional NPS Fire Fuels Management EA is currently in process and the park will adhere to decisions made in that document. The NPS supports the development and implementation of Alaska Department of Natural Resources (AKDNR) Community Wildland Fire Protection Plan. The NPS prohibits fires on NPS lands within the millsite, 36CFR13.1904. Fire extinguishers are maintained in all NPS properties. NPS staff is limited in structural firefighting capability and qualifications and are not certified to enter a burning building.

According to the National Fire Protection Association (NFPA), the single largest cause of fire in historic buildings is arson. Regular patrols of the NHL would be conducted by NPS personnel to guard against this threat. A winter caretaker would be considered to provide overall site security.

Bear-Human Conflict Management

The NPS would continue to address this issue through education of NPS staff, visitors and area residents on appropriate behavior around bears and through enforcement of the Park's food storage regulation. Placement of additional bear-resistant garbage cans will be considered if need increases. When necessary, the NPS would actively manage bear behavior if the animal poses a threat to human safety. The NPS would impose emergency closures when necessary to protect human safety. Trails through soapberry patches will be monitored for bear activity.

Law Enforcement

The NPS would continue to provide a prevention-based law enforcement program in the NHL. Emphasis would be placed on education and enforcement of regulations that protect visitor safety and the area's natural and cultural resources. A memorandum of understanding would be maintained with the AK State Troopers, allowing for mutual assistance between the agencies when necessary.

2.2.6 Acquisitions

NPS acquisition of properties within the NHL has been and will continue to be contingent on willing sellers. If approached by a willing seller, NPS prioritizes potential acquisitions within the NHL based on the following criteria:

- Protection and management of the historic landscape.
- Ability of the property to support NPS operations.

NPS will continue to follow Departmental policies and American Society of Testing and Materials International (ASTM) standards regarding the screening of properties for environmental liabilities posed by acquisitions.

2.2.7 Transportation/Access

Kennecott Arrival/Orientation

The park held a public meeting in summer 2012 to discuss the arrival and orientation of visitors to Kennecott. Issues that were addressed included:

- What to do with the “shuttle turnaround” area (the Turnaround currently has an area for shuttle buses to drop off visitors and make a turn without having to backup into the road or across pedestrian pathways, a sculptural metal sign that announces the landmark, and one kiosk/shelter with two benches and four exhibit panels). NPS proposes to add additional benches and vegetation screening. Interpretive exhibits will be updated. A bicycle rack will be provided.

The following items were discussed and decided:

- Shuttle van drop off and pick up needs to best accommodate those businesses that are providing that service. In light of this, shuttle van pick ups and drop offs will continue at the current location (between the Blackburn school and St. Elias Alpine Guides office) with occasional overflow pick-ups and drop-offs at the shuttle turnaround.
- To provide the best visitor orientation, the shuttle turnaround will be linked via a raised boardwalk to the Blackburn school. The existing deck behind the Blackburn school will be expanded and roofed to provide a covered seating area. A bulletin board will be installed in this area. The existing outhouse will be expanded to provide men’s and women’s vault toilets. Additionally, there will be some identifying feature (sign, arrowhead on the door) visible to those getting off shuttle vans that identify the Blackburn building as an NPS facility.
- NPS will avoid parking in the space north of the Blackburn building.

Motor Vehicle Use Within the NHL

Use of the rights-of way in the NHL is governed by the Kennicott Subdivision plat filed with the State of Alaska by the Great Kennecott Land Company in 1976. Local landowners accepted the conditions of the plat when they purchased their land, prior to the acquisition of the remaining parcels by WRST in 1998. The NPS is a neighbor of landowners within the subdivision and recognizes that it is bound by the same conditions.

The Kennecott subdivision plat filed with the State of Alaska specifies that “the rights-of-way as shown or noted are private, reserved for the use of the present owners of lots in this subdivision and their guests, but not the public in general.” The NPS supports park visitors coming to the NHL in a non-motorized fashion and utilizing local shuttle services to access the site because of the complexity of motorized access to the millsite subdivision, and the effects of motorized use on visitor experience.



Photo 6: Shuttle turnaround

A community workshop was held in Kennecott in the summer of 2012 to discuss access to the millsite subdivision and to discuss parking. The workshop addressed these issues over a 3-night period and was well attended by local business owners, millsite subdivision lot owners, and those supporting motorized access. NPS facilitated the meeting and the group developed the following vision statement for access to the millsite subdivision:

- Access to the millsite subdivision is predominantly through shuttle services and other non-motorized means. Vehicle access and parking will be managed to minimize impacts to visitors and residents, minimize congestion and maximize safety.

The NPS is committed to working with the community towards achieving this vision. The following action items, which focus on education, were identified by the workgroup:

- All educational materials will be developed in consultation or partnership with community members.
- Signage should be minimized and aimed at effective conveyance of information. Land status maps that clearly show intermixed land pattern would be used. Signs can include “bullet statement” messages. Kiosks with signs meeting these standards have been installed at the footbridge and the airport. Signs placed on NPS lands will conform with the Sign Guidance identified in the Cultural Landscape Report.
- Brochures: to be developed in partnership with community. Should include information on the following: Why this place is different. This is a community; respect that there are people walking on the roads, it is a shared trail. Describe physical characteristics that lead o safety concerns. Encourage the use of shuttle services and alternatives.

- Brochures to be distributed at Sportsman shows, to motorized groups and other outreach opportunities, including Fairbanks (to reach dipnetters). Also distributed around westside/McCarthy/Kennecott and by businesses.
- Websites: Can display information similar to brochures. Visitors use websites for trip planning. Other websites possibilities: Friends of Kennicott, local businesses.

The community expects NPS to set an example regarding motorized access. In recognition of this, NPS is committed to maintaining a usable employee shuttle service and encouraging employees to use it. Visiting NPS staff need to be conscious of minimizing motorized trips between McCarthy and Kennecott.

Subsistence ORV use: The use of Off-Road Vehicles by federally qualified subsistence users in the area is authorized by 36 CFR 13.460, which allows the use of “surface transportation traditionally employed”. The 1986 Wrangell St. Elias National Park and Preserve General Management Plan made the determination that ORVs were a traditional means of access for subsistence purposes in the park. This Kennecott management plan does not propose any restrictions on this activity.



Photo 7: Footbridge, Kennicott River

Parking

Kennecott residents and the park agree that Kennecott has very limited parking space. In consultation with the local community, the park has identified the following action items:

- Provide limited (10-space) designated parking in the dairy barn area. Users to include: handicapped; local use for non-shuttle times; special events; visitors; and lot owners with no property access. Additionally, NPS has established and will continue to maintain a parking area for employees and contractors near the Dairy Barn. NPS will run a shuttle for employees that live on the West Side or McCarthy but work in Kennecott, so as to minimize park vehicle traffic.
- Consider options for a pedestrian trail from the designated public parking in the Dairy barn area to the shuttle bus turnaround or Blackburn school area.
- When access to private property is restricted due to winter conditions, Kennecott landowners will be free to park on the main rights-of-way within Kennecott.
- WRST will work with the local community to support an efficient public shuttle system and adequate hours of operation, to reduce the need for parking within the NHL.
- The park will develop a public education campaign through the park's website, signs, and brochures at information kiosks in Kennecott/McCarthy and along the McCarthy Road, informing the public of the local shuttle system and the lack of public parking in the NHL.
- No parking at the shuttle turnaround (after a parking spot is designated).
- No parking on NPS owned portions of easements in the millsite subdivision.
- Utilize restored features (boardwalks, railroad rails) to discourage parking.
- A 10 mph speed limit will be posted through the Kennecott subdivision, posted at the NHL boundary.

Roads

Alaska State ROW, McCarthy to Kennecott: NPS would encourage ADOT&PF to design the rail corridor road as a one-lane gravel road that maintains its historic character with a 25-mph speed limit designed to accommodate safe vehicle passing.

Subdivision easements within the NHL: A cooperative agreement will be sought with NHL lot owners and businesses to address NHL road maintenance.

Wagon Road: Segments of the Wagon Road that occur on NPS lands will be managed primarily as a pedestrian trail, with allowance for motorized use for those accessing private property along the trail and for federally qualified subsistence users engaged in subsistence activities.

Toe of the Kennecott Glacier Road: This road traverses private land, university sub-division lands, and finally NPS lands (see map). The NPS portion of this road will be designated a park road, open to motorized use. Motorized travel on NPS lands off the designated road will only be allowed for federally qualified subsistence users engaged in subsistence activities.

Walk-In Campground

A 2002 Environmental Assessment and Finding of No Significant Impact proposed and evaluated effects of a walk-in campground. NPS is still committed to the concept, which would designate 42 acres of land east of Kennicott River for primitive tent camping. The site under consideration is one mile northeast of McCarthy and 0.35 mile from McCarthy Airport. Public input will be solicited prior to final determination of the detailed site location in order to minimize impacts on valued resources (water supplies, popular recreational sites, etc.).

Campground facility development and amenities would include vault toilets, bear-resistant trash receptacles, bear-resistant food storage boxes, and centralized food storage area. Camper food storage, food preparation, and food consumption would be restricted to the centralized area and prohibited at individual campsites. Access to the campground would be provided by local shuttle vehicles and non-motorized methods. Routes of access would be either the trail described above, or from McCarthy airport using public rights-of-way (Kennecott-McCarthy Road and/or the Wagon Road) crossing a platted subdivision on nonfederal land. NPS rangers would patrol the campground to ensure compliance with food storage, non-motorized access, and other regulations.

However, before a campground is approved in the proposed location, potential human-bear conflicts will be given full consideration. In particular, this area harbors an abundance of soapberry (*Sheperdia Canadensis*) bushes on which bears feed heavily in July and August, and the bears depend on this food resource to prepare for their winter hibernation. If careful consideration leads to a conclusion that human presence would negatively impact the bears, the campground will either be relocated or closed to campers during the period when bears are feeding in the area.

2.2.8 NPS Utilities and Infrastructure

Solid Waste Management:

NPS supports working with the community to deal with solid waste issues, by promoting pack in/pack out concepts for visitors and landowners alike, and by supporting a recycling program. Bear proof garbage containers have been installed in Kennecott and the kiosk on the west side. Bear proof recycling containers will be installed at the Company Store and at the old school in Kennecott. NPS supports the development of a privately owned solid waste transfer facility and would consider utilizing such a facility if economically viable.

West Side Development

With NPS acquisition of a five-acre lot adjacent to the McCarthy airport, further development at west side will not be considered. Cabanas that are currently located in the Dairy Barn area at Kennecott may be relocated to west side. This will not require any further development of the area.

2.3 Alternative Descriptions

2.3.1 Alternative 1—No Action

Overview

The primary management philosophy in the *No Action Alternative* would be limited to maintaining the structures and landscape features as they exist today, with no additional treatment. This alternative is displayed in Figure 3.

Zone by Zone proposals

Vegetation, all Zones: Vegetation clearing around historic structures for fire and windfall protection would not occur; no selective thinning to improve viewsheds would occur; and no invasive plant monitoring and/or removal would occur.

Archeological Resources, all Zones: Wherever feasible, all categories of archeological resources identified in the 2000 Cultural Landscape Report will be retained on the landscape. If removal is

necessary for public safety or to facilitate building stabilization, archeological resources will be re-located as close to the original documented location as possible.

Circulation/Access, all Zones: No maintenance of historic circulation/access routes as proposed in the Action alternatives would occur.

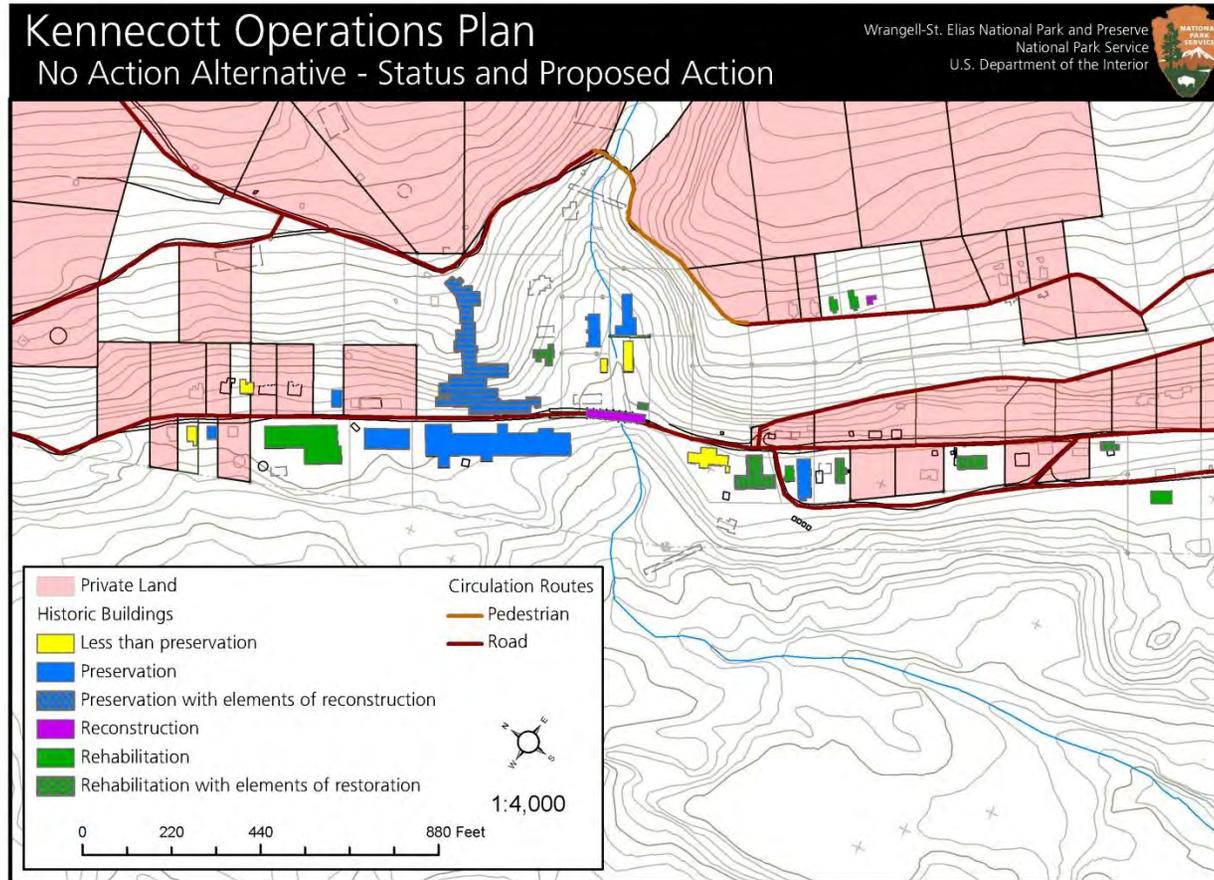
Proposed historic structure stabilization/preservation:

1. **Administrative Zone**
 - General Manager's Office: cyclic maintenance

Photo 8: Kennecott from the toe of the Kennecott Glacier



Figure 3: Alternative 1, No Action



- Hospital: no additional work; manage as ruins
- Assay Office: salvageable parts would be left in place
- Railroad Depot: cyclic maintenance
- Sawmill and Carpenter's Shop: Allowed to deteriorate in place.
- Company Store: No additional work to provide office or exhibit space. Cyclic maintenance and maintain as primary visitor contact point.
- Railroad trestle: cyclic maintenance
- 2. **Industrial Core Zone**
 - Tram terminus, concentration mill, and leaching plant: no further work would be done. Structures would be managed as ruins.
 - Machine Shop: cyclic maintenance; no further work would be done.
 - Power Plant: cyclic maintenance; but no painting and no window repair
 - Transformer House: cyclic maintenance
- 3. **Commercial Zone**
 - Refrigerator Plant: cyclic maintenance
 - West Bunkhouse: complete exterior preservation work; no interior work; no adaptive re-use would occur as partnership or otherwise
 - New Schoolhouse: no additional interior work; cyclic maintenance.
 - Recreation Hall: cyclic maintenance; continue lease agreement.
 - Old Schoolhouse: cyclic maintenance; continue use as NPS offices
 - Dairy Barn: cyclic maintenance
- 4. **Residential A Zone**
 - East Bunkhouse: no further stabilization work; manage as a ruin
 - National Creek Bunkhouse: no further stabilization work; manage as a ruin
 - South and North Silk Stocking cottages: cyclic maintenance
- 5. **Residential B Zone**
 - Kennecott Cottage 39C, Lot 88: cyclic maintenance
 - Kennecott Cottage 13C, Lot 80: no work proposed; manage as a ruin
 - Kennecott Cottage 39B, Lot 87: no further work; manage as a ruin

Interpretation, all Zones: Informal interpretation would continue during the summer months (May – September). The Company Store would continue to serve as the primary visitor contact point. Evening and special programs conducted by NPS personnel would continue in various locations. NPS would continue mill tours through a concessions contract as long as conditions in the mill building are safe for visitors.

Transportation/Access

Kennecott Arrival/Orientation: No further work would be done at the Shuttle bus turnaround or the McCarthy Road Information Station.

Motor Vehicle Use Within the NHL: NPS would take no action towards educating motorized visitors regarding motorized use on subdivision easements within the NHL.

Parking: NPS would not work with the community to develop a parking policy for the NHL; would not designate any parking areas within the NHL; and would not develop any parking.

Trails: NPS would conduct periodic maintenance in order to maintain existing trails. No additional trails in the area would be designed or constructed.

Walk-in Campground: NPS would not construct a walk-in campground.

NPS Utilities and Infrastructure

Water System: No water system would be designed or constructed to provide potable water or fire suppression capabilities. Water collection and treatment for NPS housing and employees would continue as is. Water is currently taken out of National Creek and treated to provide potable water and toilet facilities at the Silk Stocking cottages, New Schoolhouse, and the Dairy Barn.

Sanitary Sewer system: No additional sewer lines or septic systems would be constructed.

Power generation and distribution: Given the reduced power needs, NPS would continue operations utilizing diesel and propane generators. No hydroelectric or solar power generation would be considered.

West Side development: No further west side development would occur.

Airport Office: Installation of a co-gen unit to supplement existing power generation and provide heating capabilities occurred in 2011. The area would serve as the telecommunications hub for Kennecott and west side NPS facilities. This office would serve as an incident command post and provide an aviation support function.

Other

Jumbo transfer station: No further work would occur.

Jumbo mine aerial tramway: No work proposed.

Mudhole Smith cabin: No further work would occur.

Jumbo Mine/Root glacier outhouse: A vault toilet would not be installed at this location.

Cemetery: No action.

2.3.2 Alternative 2: Preferred Alternative

2.3.2.1 Overview

Under this alternative, historic structure stabilization and preservation would be based on past planning documents, including the Cultural Landscape Report and the Interim Operations Plan. Historic structures would be managed to reflect a diversity of treatments. Some structures would be managed as ruins and allowed to deteriorate in place, some would be stabilized and preserved, and some would be rehabilitated to accommodate adaptive re-use. Under this alternative, preservation treatments include painting and/or window replacement to provide weatherization in order to protect the public's investment and ensure that buildings are standing for generations to come. Wherever possible, archeological resources would be retained on the landscape. Vegetation clearing would be done around buildings for fire protection and would be done in selected areas to improve viewsheds. Some historical circulation routes will be improved and maintained as described below.

On transportation/access issues, NPS would work with the community to manage the NHL as a non-motorized visitor destination. NPS would work with the community on managing parking within the NHL. Under this alternative, NPS would develop 3.5 mile pedestrian trail along the east side of the Kennicott Glacier and would develop a walk-in campground. For NPS Utilities and Infrastructure, a water system providing potable water and limited fire suppression capabilities would be developed; a sanitary sewer system would be developed; and power generation and distribution would be provided through propane, diesel generator, and consideration of alternative sources.

Detailed NPS proposals for each of the buildings and structures within the NHL are presented below.

2.3.2.2 Zone by Zone Proposals

Archeological Resources, all Zones: Wherever feasible, all categories of archeological resources identified in the 2000 Cultural Landscape Report will be retained on the landscape. If removal is necessary for public safety or to facilitate building stabilization, archeological resources will be re-located as close to the original documented location as possible.

Administrative Core Zone

Vegetation: The following vegetation clearing would be done around all historic structures on NPS lands in this zone, for fire and windfall protection; and for access to the buildings:

- Clear all spruce within 30' of all structures.
- Limb spruce trees up to 10' above the nearest surface fuel within 100' of all structures.
- Clear all woody vegetation within 5' of all structures.
- Selectively clear or plant other vegetation to maintain quality viewsheds.

Invasive plant species will be managed consistent with the 2010 NPS Alaska Region Invasive Plant Management Plan and EA. This document and Finding of No Significant Impact (FONSI) describe the following elements of invasive plant management:

1. Continue physical control methods where effective.
2. Allow limited use of herbicides to control infestations not responding to physical control methods; and
3. Implement mitigating measures with best management practices and monitoring of overall program effectiveness and environmental effects.

Revegetation: Where needed native vegetation may be planted to screen modern NPS facilities using native seeds/cuttings from local populations. In some selective cases historically accurate non-invasive non-native plants may be planted to enhance the cultural landscape.

Circulation/Access: The following are proposed for this zone:

- Improvement and maintenance of a pedestrian trail from the General Manager's Office, up the creek to the footbridge, connecting to the top of the mill building (see Figure 4). This trail would connect with the Old Wagon road and Silk Stocking Loop described in the Residential A zone.
- Where historically appropriate, reconstruct hose houses that will be used to store limited wildland fire suppression supplies (such as backpack pumps or extinguishers).

General Manager's Office

What has been done: Between 2004 – 2009, reconstruction of site to reverse previous flood damage and installed ramp that meets Americans with Disabilities Act (ADA) standards, constructed cribbing retaining walls, mitigated lead contaminated materials, dismantling and reconstruction of east, north and west additions, replaced deteriorated logs at foundation, new foundation, restored log structure, installed new electrical wiring and lighting, interior restoration, restored and replaced wood windows and doors, widen doors for ADA access, painted exterior and interior, reinstalled cabinet works. Six historic photos were added to rooms on ground level in 2009.

Proposed Actions (structural): Cyclic maintenance. For most preserved or rehabilitated historic structures, cyclic maintenance means repairs to roofing, windows (re-caulking), and re-painting on a 5 – 10 year cycle.

Small scale features: Reconstruction of boardwalk and stairs from GMO to Hancock addition.

Interpretation: Opened to the public in 2009. Enhance the sense of discovery by developing a hands-on resource space for corporate history. Plan components include durable, functional period workplace furnishings, mostly large tables and office chairs, and tabletop magnifying glasses, reinstallation of refinished drafting table and storage drawers that were taken out of the building during restoration and currently stored in the Machine Shop, and interpretive panels that introduce corporate leadership, including financial investors, and their on-site jobs. Part of self-guided walking tour and guided tour with concessioner.

Vegetation: Re-vegetate area with native seeds/cuttings from local populations.



Photo 9: General

Managers Office

Hospital

What has been done: Severe flood damage in 2006. Foundation stabilized, removal of ruins from east end. Windows and doorways screened to control access into unstable and unsafe environment.

Proposed Actions (structural): Implement interior false-work to keep walls, floors and roof from collapsing. Maintain a roof. No interior access proposed. No painting proposed.

Interpretation: Manage and interpret as a ruin. No interior access proposed. Part of a self-guided walking tour. Modify existing accessible windows so that visitors can see inside.

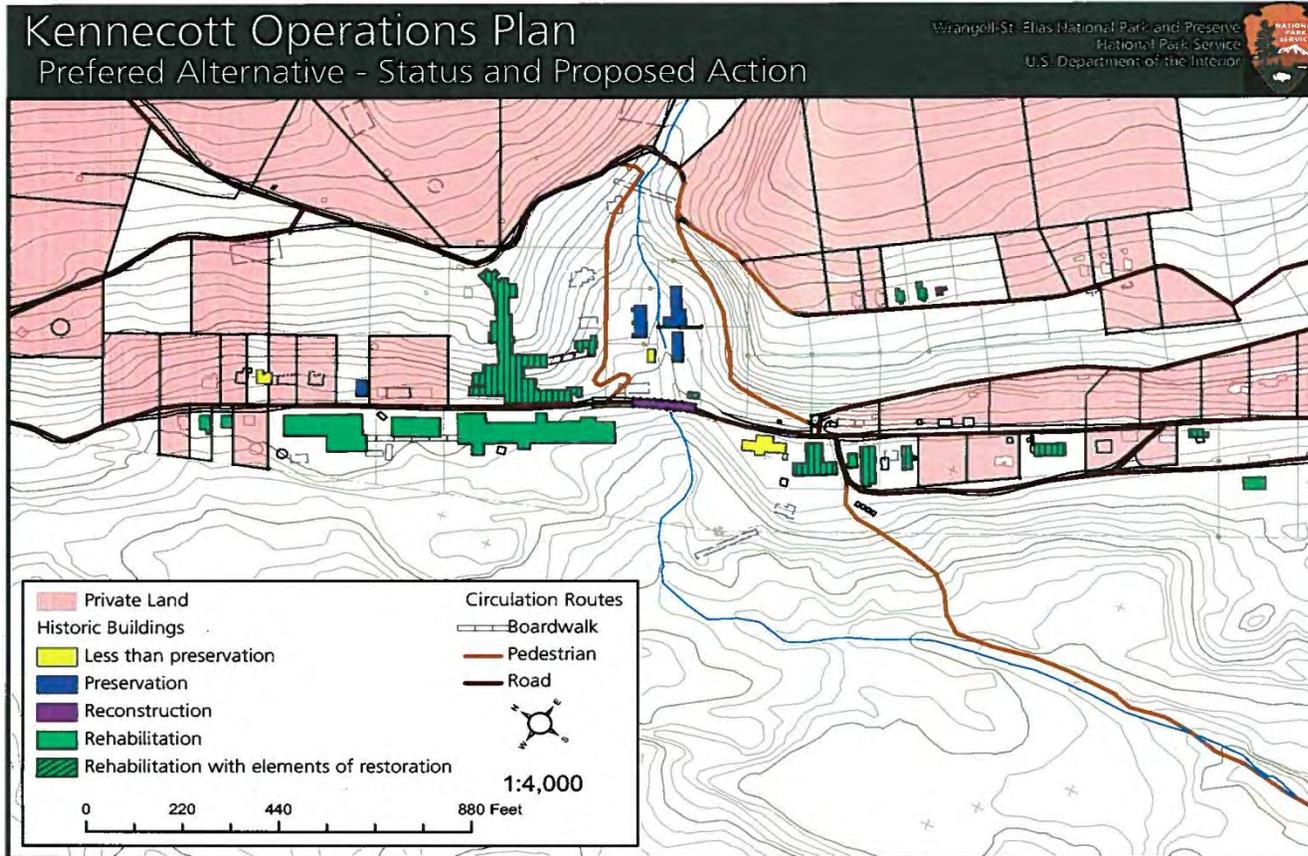
Assay Office

What has been done: Severe flood damage in 2006 resulted in a loss of structural integrity. Removed and relocated salvageable building parts to another site in 2010.

Photo 10: Hospital



Figure 4: Preferred Alternative



Proposed Actions (structural): Will move salvageable remains of the building back to its original location.

Interpretation: Manage and interpret as a ruin. Part of a self-guided walking tour.

Vegetation: Remains of the building will be kept clear of tall woody vegetation for viewshed and fire protection.

Railroad Depot

What has been done: 2002: Included lead paint mitigation, lifted and leveled, new foundation, siding repairs, construct interior ticket counter, stove, restored interior finishes, painted exterior siding, and new roofing. Installed exterior panel on the Flood of 2006.

Proposed Actions (structural): Cyclic maintenance. Restore electrical systems.

Interpretation: Opened to the public from 2004 - 2007 as a visitor center. Replicate original Wells Fargo and Railroad Depot signs. Produce at least one panel for the interior. Part of a self-guided walking tour and guided tour with concessioner.

Sawmill and Carpenters Shop

What has been done: No action. Structure collapsed in the 1970's.

Proposed Actions (structural): Allow ruin to deteriorate in place.

Interpretation: Manage and interpret as a ruin. Part of a self-guided walking tour.

Vegetation: Keep the site and the margins around it free of vegetation in order to interpret as ruin and to protect from fire/rot. Selective thinning to improve and/or maintain views.

Company Store

What has been done: 2008 work included lifting and leveling of building, subfloor excavation for access, new foundation, floor structure, retaining wall at east elevation, removed siding, installed structural shear diaphragm and wall structure, reinstall siding, restored and replaced windows and doors, new electrical wiring, new furnace, clean and mitigate lead paint in store area, reconstructed egress rampways, repainted, constructed curatorial storage area and ranger cache. Opened as visitor contact station in 2008, with exhibits installed in 2010.

Proposed Actions (structural): Work to include: Level 1--construct public restrooms, complete field lab area, interior finishes, lights, elevator/lift to Level 2 and 3, install utilities and additional furnaces. Level 3--construct staff office area, interior finishes, lights and communications. Maintain as visitor contact point and administrative office space.

Vegetation: Thin some trees to open up viewshed in front of deck area.

Interpretation: Opened to the public in 2009. Maintain as primary exhibit space with visitor access. To minimize interpretive intrusions in the town, the General Store will provide a central interpretive focus and a place to fully develop the landmark's primary stories. Given the need for durability and low maintenance, the full range of exhibit techniques can be used including hands-on and interactive media. Replicate original Post Office and General Store sign and open the post office for general public access. Consider developing the outside area of the front and back of store as a gathering place for visitors.

Small scale features: Maintain Hoist House #52. Clear random building material from interior, strong interpretive value. Re-establish cribwall/utilidor from Company Store to the end of the Carpenter's shop.



Photo 11: Company Store

Railroad Trestle

What has been done: Reconstructed in 2009 to preserve railroad feature and provide owner access to property north of National Creek. Work included dismantling of flood damaged trestle, contracted for concrete footings, and constructed replica of historic trestle.

Proposed Actions (structural): Minor finish work such as closing up utilidor. Cyclic maintenance.

Interpretation: Part of a self-guided walking trail.

Vegetation: Selectively clear for viewshed of glacier and tailings retaining wall.

National Creek Re-Channelization

What has been done: Re-channelization using rip-rap done in 2010. Planted alder and willow cuttings for stabilization and aesthetics in 2011. A stone flood wall was constructed by the upper foot bridge and rip-rap has been placed at the East Bunkhouse.

Proposed Actions (structural): Based on the geotechnical evaluation of National Creek, we know that the rock glacier at the head of the valley continuously contributes a large sediment load to the stream. Engineering for stream rechannelization identified the need for the periodic removal of sediment. Removal will require periodic excavation from the stream bed to retain its current configuration. Excavation will require the use of heavy equipment such as backhoes and dump trucks. Planted materials in the actual streambed will be periodically impacted.



Photo 12: National Creek

Industrial Core Zone

Vegetation: The following vegetation clearing would be done around all historic structures on NPS lands in this zone, for fire and windfall protection; and for access to the buildings:

- Clear all spruce trees within 30' of all structures.
- Limb spruce trees up to 10' above the nearest surface fuel within 100' of all structures.
- Clear all woody vegetation within 5' of all structures.

Selective thinning for viewshed would also be undertaken in order to enhance views. Specific areas of consideration in this zone would be on NPS lands along the Portal trail above the mill building and along the trail linking the GMO to the top of the mill building (See Figure 3). Revegetation of disturbed areas (such as proposed water lines) would be conducted utilizing native herbaceous vegetation seed collected from the surrounding area. Such plantings would also be considered in order to screen certain views. In some selective cases historically accurate non-invasive non-native plants may be planted to enhance the cultural landscape. Area will continue to be monitored for invasive plants and populations of such will be controlled and removed.

Circulation/Access: The following are proposed for this zone:

- Construct accessible trails and boardwalks behind the power plant, machine shop, and leaching plant (See Figure 4).
- In cooperation and consultation with private lot owners, consider restoration of boardwalks and/or railroad within this zone as a tool to control parking.

Tram Terminus

What has been done: Friends of Kennecott re-roofed the western most area in the 1990s; NPS has maintained brushing; maintained roof; supported foundation repairs; walkway and railing; secured the site with doors.

Proposed Actions (structural): Work to include structural repairs to the upper mill including the tram deck, structural reinforcement to ore bin, floor repairs, and reconstruction of upper tram deck and roof. Dependent on funding, construction of a protective roof structure over the upper tram deck and roof may be considered rather than reconstruction.

Interpretation: Open to the public as part of a concession tour.

Vegetation: Maintain scenic views through continued brushing.

Concentration Mill

What has been done: Study, design, and engineering for the internal stabilization of the building. Maintained roofing, added hand rails for stairs, and hardened walking surfaces along tour route.

Proposed Actions (structural): Work to include structural repairs including foundation repairs and column and truss repairs Levels 1 through 7. Mock-up for project to test internal stabilization methods was performed in 2011, with other work scheduled for 2012 and 2013. Repairs to the mill to repair the foundations and reestablish deteriorated timber crib retaining walls will require site disturbance during the period of construction. Once completed, the landscape will be restored.

Additional work dependent on funding will include structural repairs to the mill structure at Levels 8 and above. This work will include foundation and column and truss repairs, new roof construction, and stabilization of the ore bins.

The intent of the proposed work is to stabilize the structure for a guided visitor opportunity. Long term (more than 10 year) plans would include siding repairs and replacement and painting. Window repairs and replacement may be required to protect the interior of the building and to provide draft control as part of future fire suppression within the mill.

Recent work has been done to identify and delineate the deposition of detonation cord and blasting caps on the north side of the mill building. The inventory revealed the presence of large amounts of debris (estimated between 1500 and 1800 cubic yards) on the north side of the mill building potentially containing undetonated blasting caps. This area will continue to be posted as closed as long as the site is hazardous. Some of the mill building stabilization efforts identified above will require working in this area. Site specific mitigation of the hazard, through removal of the debris material, will occur prior to work being conducted in these specific areas. Removed material will be taken to a safe area, screened for blasting caps, and burned. Long term, much of the debris potentially containing blasting caps may remain on site. The area will be clearly posted and, if necessary, physical barriers will be put up at access points.

Archeological resources: Replace ore chute. Minimize disturbance to other interior and exterior archeological resources during stabilization.



Photo 13: Inside the Concentration Mill

Interpretation: Interpretation of the stabilized mill building through partnership/concession-led tours that meet NPS standards for interpretation. In the Sacking Garage, bring the sacking process to life by displaying an original flat car loaded with burlap bags filled with ore, show the sacking and stacking process with working pulleys to raise and lower the chute, and reinstall the original tracking scale and winch used to pull cars back and forth.

Small scale features: Track inclines on north and south sides of mill building will be brushed or otherwise cleared and managed as ruins; reconstruction of roof enclosure will occur on the utilidor along south edge of mill building. Internal stabilization of scale house and lab sheds.

Leaching Plant

What has been done: Measures were taken to prevent collapse or further deterioration of the building, including temporary roofing and foundation repairs on the north and south sacking sheds.

Proposed Actions (structural): Ongoing work to include repairs to halt collapse onto railroad corridor, site stabilization, foundation replacement, repairs to floor and wall structure, lead paint mitigation (including painting), rehabilitation of doors and windows to control access. Scheduled work includes structural repairs to the walls of the leaching plant including column realignment and footings, shear wall repairs, truss repairs, and asbestos abatement. Allow south addition to collapse and manage as a ruin. Implement interior false-work/rigging to keep ruin structure from collapsing onto the railroad corridor or into the north addition. No interior access proposed in the south addition.

Interpretation: Continued tour opportunity with mill building. North sacking shed identified for future milling exhibit to accommodate physically challenged visitors that cannot access the Mill. Exhibits could include installation of original equipment such as shaker tables and crushers that demonstrate the different milling processes.

Small scale features: Stabilization/reconstruction of bracing and the original track incline for the leaching plant deck, north of leaching plant. Reestablish the deck at the north elevation with an integrated accessibility ramp into sacking shed.

Machine Shop

What has been done: 2002 work included new foundation, retaining wall construction, partial roof reconstruction, re-roofing, siding repair, painting, and some window restoration.

Proposed Actions (structural): Scheduled work to include reestablishment of collapsing service decks on north and south sides, door and window repairs, siding repair, and reconstruction of a porch roof over the east entrance.

Interpretation: This is the largest open interior space in Kennecott, and could be used to display original machinery such as the overhead hoist, forge, drive shaft, and belts, as well as return original machines and tools that were purchased in 1938 and shipped to Dunkle Mines. Produce at least one panel for the interior. After proposed structural repairs, building will be open to the public. Part of a self-guided walking tour.

Power Plant

What has been done: 2007 work included repair/replacement of entire building foundation, column repairs, partial roof replacement, re-roofing, smoke stack capping and structural stabilization, exterior wall repairs, ADA rampway system, access control, alleyway boardwalks. Repainted doors to mitigate lead paint hazard. Exhibit panel installed in upper mezzanine in 2006.

Proposed Actions (structural): Mediate oil and asbestos in the area. Boiler and stack preservation treatment. Window repair/lead abatement including painting.

Interpretation: Roadside viewing platforms opened to the public in 2006. Maintain the one interpretive exhibit panel on upper mezzanine. Inside tour could be led by a concessioner on an ADA rampway. Exterior and upper decks can be part of a self-guided walking tour.

Small scale features: The following are proposed:

- Stabilization of structure members (those affected by fire of the south deck of the power plant).
- Reconstruct small section of boardwalk with stairs west of power plant.



Photo 14: Power Plant

Transformer House

What has been done: 2006 to 2011 work included asbestos abatement and site clearing, re-roofing, site grading to resolve drainage into the building, new foundation, repairs to floor structure, repairs to exterior siding.

Proposed Actions (structural): Repair or replace missing windows and doors and paint. Landscape to improve drainage away from building.

Interpretation: Not open to the public. Part of a self-guided walking tour. Modify existing windows so that visitors can see inside.

Commercial Zone

Vegetation: The following vegetation clearing would be done around all historic structures on NPS lands in this zone, for fire and windfall protection and to maintain public access:

- Clear all spruce trees within 30' of all structures.
- Limb spruce trees up to 10' above the nearest surface fuel within 100' of all structures.
- Clear all woody vegetation within 5' of all structures.

Vegetation screening will be considered in this zone, particularly to screen the Dairy Barn area from the shuttle turn-around viewshed. Views of the glacier will be maintained. Disturbed area revegetation would be considered as needed utilizing native herbaceous vegetation seed or historically accurate plantings collected from the surrounding area. In some selective cases historically accurate non-invasive non-native plants may be planted to enhance the cultural landscape. Area will continue to be monitored for invasive plants and populations of such will be controlled and removed.

Refrigerator Plant

What has been done: 2008 work included reconstruction of south, west walls and floor framing, roof repairs and reroofing, window and door repairs, lead mitigation and painting, new electrical wiring and lights and new steps and porch.

Proposed Actions (structural): Cyclic maintenance. Re-construct cribbing walls.

Interpretation: Opened to the public in 2008. Part of a self-guided walking tour. Produce at least one panel for the interior.

Small scale features: Restore historic ramp to the railroad corridor. Restore boardwalk.

West Bunkhouse

What has been done: 2003 work included a new shingle roof and interior lead paint mitigation. New foundation was started in 2011 and completed in 2012.

Proposed Actions (structural): 2013 work to include exterior rehabilitation consisting of floor and wall repairs, construction of exterior shear diaphragm, siding repair and painting, repairs to doors and windows. Retain interior options for potential partnerships and/or interpretation. Depending on the nature of future partnerships and the adaptive re-use of this building, it may be necessary to make significant changes to the building to protect occupants from fire, to meet operational needs of the users, and to install electrical, heating and plumbing services. The prospective partner would be responsible for all interior improvements in accordance with *The Secretary of Interiors Standards for Treatment of Historic Properties*.

Partnership: NPS will consider partnering with a non-profit for long-term adaptive re-use and management of this building. Criteria for potential partners include:

- Financially capable of funding interior rehabilitation to accommodate proposed adaptive re-use.
- A partner who places value on protection of historic, cultural, and natural resources.
- A partner who has an existing or historic connection with the community and/or Kennecott.
- Adaptive re-uses of the building must also allow some public access for interpretive purposes.

Of the three bunkhouses remaining in the mill town, the National Creek and East Bunkhouses are in poor condition and will be managed into the future with little or no interior access to the public.

Only the West Bunkhouse retains a high level of integrity reflective of its historic past, both with respect to its exterior appearance and to its interior design, functionality, and spatial layout. Because of the high historic and interpretive value of the structure, NPS has classified the interior rooms of the building relative to potential adaptive re-use. The purpose is to give potential partners an indication of where adaptive re-use might be considered. NPS rated each interior portion of the building as primary or secondary space. Primary space indicates rooms or areas that have maintained the integrity of their character-defining elements and retain high interpretive value. In general, adaptive re-use of these areas is acceptable provided the proposed use is compatible with the historic use of the room and as long as the design and materials needed for restoration are reflective of the original structure. Areas identified as primary space have a high interpretive value and NPS (or its partner) will have access for interpretation purposes. The following rooms and/or areas of the West Bunkhouse were identified as primary spaces:

Ground floor: Locker room; wash-up/sink area; office; west staff bunk room; staff area corridor; back porch.

First floor: Entryway; west side dining hall; and Kitchen/Pantry area.

Second floor: Lounge area; bunkrooms 1, 2, and 3 on the east end; and the hallway/corridor.

Third floor: Head of the stairway and the hallway/corridor.

Interpretation: Open to the public after interior modification, in cooperation and consultation with prospective partner. After adaptive re-uses to support partnership have been determined, develop an interpretive panel for the interior that links the building, via text and images, to the historic use of the structure. Include interpretation of the Japanese cooks. Part of a self-guided walking tour and guided tour with concessioner.



Photo 15: West Bunkhouse

New Schoolhouse

What has been done: 2003-2009 work included lifting and leveling of building, new foundation, floor structure, foundation skirting, lead paint mitigation, remove and restore historic siding, install shear diaphragm, restore doors and windows, reestablished two working restrooms, restored interior finishes, new electrical system and lighting, new septic and leach field system. Used as site maintenance offices and crew training room. ADA ramp completed in 2011.

Proposed Actions (structural): Restore classrooms after maintenance activity is removed from building. Install chalk boards, refinish floors.

Interpretation: Possible future classroom for visiting school groups and/or interpretive exhibit space. Part of self-guided walking tour. Acknowledge the location of the handball court/hockey rink in future interpretive material.

Small scale features: Re-establish cribwall/utilidor between New School and West Bunkhouse.

Recreation Hall

What has been done: 2001 - 2003 work included new foundation, dismantled and reconstructed east and west wall structure, lead paint mitigation, removed and reinstalled interior walls and ceiling and exterior siding, installation of structural shear diaphragm, repairs to trusses and roof sheathing, lead paint mitigation, exterior and interior painting, interior finishing, restoration of windows and doors, construction of ADA ramp, furnace, new electrical wiring, projector installation, furnace and ducting installation. In use as a theater and shared community hall.

Proposed Actions (structural): Cyclic maintenance. Install sprinkler system. ADA compliant hardening of walkways to outhouses.

Partnerships: Currently working on lease agreement with Wrangell Mountain Center to manage the building for community events, interpretive programs, and classroom purposes.

Interpretation: Opened to the public in 2003. Part of a self-guided walking tour. Two interpretive panels were installed in 2004.

Small scale features: Hose house was rehabilitated and will be utilized to provide storage for fire suppression supplies (backpack pumps or extinguishers).

Old Schoolhouse

What has been done: Work has included dismantling and reconstruction of the west and east walls, lead paint mitigation, removed and reinstalled historic siding, installed shear diaphragm, restored windows and doors, reroofing, new electrical and lighting, interior and exterior painting, and floor repairs. In use as park offices.

Proposed Actions (structural): Cyclic maintenance. Utilize boardwalk behind building to connect this building with the shuttle turnaround, thus providing a continuous visitor orientation space. Porch behind building would be extended and roofed. Benches installed to provide covered visitor space. Existing outhouse “expanded” to provide men’s and women’s vault toilets.

Interpretation: Convert the Blackburn School into a staffed, contact station offering backcountry information, orientation, and safety messages. Possible space dedicated to concessioner who offers guided tours through Kennecott NHL. Install interpretive panels that introduce each of the landmark’s

themes and that interpret the Blackburn School building history. Update the Scope of Sales and develop displays for Alaska Geographic sales. Part of a self-guided walking tour. Possible future use as winter caretaker office.

Dairy Barn

What has been done: 2009 - 2011 work included new foundation and roof, construction of a shear diaphragm, lead paint mitigation including painting, door and window repairs, insulation, interior finishes, new electrical system, lights, plumbing. Connections to existing septic system/leach field. Communication system installation.

Proposed Actions (structural): Cyclic maintenance. Future use as shop/break room and this area will be utilized for employee parking. Enclosure for generator, construct material shed and security shed.

Residential A Zone

Vegetation: The following vegetation clearing would be done around all historic structures on NPS lands in this zone, for fire and windfall protection and for access to the buildings:

- Clear all spruce trees within 30' of all structures.
- Clear all woody vegetation within 5' of all structures.
- Limbing of spruce trees up to 50' from the buildings. Consideration will be given to the effects on thinning/limbing on adjacent landowners and maintaining privacy/vegetation screening.

Elsewhere in this zone, selective thinning would occur in order to open views of the Kennicott Glacier and/or mill building. Specific locations include:

- Selectively clear mill building view sites on the Silk Stocking trail approaching the National Creek bridge.
- Selectively clear specific view positions along the historic wagon road on south side of National Creek to frame views of historic structures and glacier and mountains beyond. See description under Circulation and Access.

Encourage and/or allow vegetable and flower gardens present in 1938, including vegetable beds and flower boxes, based on historical documentation and precedent. Consider re-establishment of foundation plantings, and grass between cottages as reflective of the period. Invasive and high water demanding species will be avoided. Area will continue to be monitored for invasive plants and populations of such will be controlled and removed. Disturbed area revegetation would be considered as needed utilizing native herbaceous vegetation seed collected from the surrounding area.

Circulation/Access: The old wagon road from the Company Store through the landslide at the south slope of National Creek would be cleared and maintained for pedestrian use only. The landslide would be by-passed or a trail constructed through it (see Figure 4).



Photo 16: East Bunkhouse and National Creek Bunkhouse

East Bunkhouse:

What has been done: 2010 work included excavation of flood materials from the interior of the structure, lead waste removal, foundation replacement, and repairs to exterior structural walls, shear diaphragm, floor structure, and access control. The new foundation was designed to resist future flooding and to be part of the flood control strategy for National Creek. Work also included removal of bathhouse wing from the west end of the building.

Proposed Actions (structural): Re-siding and painting, with salvaged materials and new, “shadow” reconstruction of lower-level windows and doors (openings are framed but do not contain actual doors or windows). Replace roof and stabilize. Re-grading around building. This building is critical to maintain in place for National Creek stability.

Interpretation: Manage and interpret as a bunkhouse. Controlled access proposed. Part of a self-guided walking tour.

National Creek Bunkhouse:

What has been done: Windows and doors screened to prevent access.

Proposed Actions (structural): Work to include interior reinforcement to help stabilize the structure, re-roofing to extend the life of the ruin structure. Manage as a ruin as part of the Kennecott streetscape.

Interpretation: Manage and interpret as a ruin. No interior access proposed. Part of a self-guided walking tour. Modify existing windows on the lower level so that visitors can see inside.

South Silk Stocking Cottage:

What has been done: 2008 work included new foundation, roofing, window and door rehabilitation, exterior and interior lead mitigation, painting, refinished floors, new electrical wiring, propane lighting, plumbing, septic/leach field. In use as employee housing. Missing garage structure reconstructed to

provide summer storage, for both cottages, to keep staff bicycles etc. out of the landscape and provide space for power generator and backup battery bank.

Proposed Actions (structural): Cyclic maintenance.

Interpretation: Part of a self-guided walking tour, incorporating educational materials regarding respect for private property.

North Silk Stocking Cottage:

What has been done: 2008 work included new foundation, roofing, window and door rehabilitation, exterior and interior lead mitigation, painting, refinished floors, new electrical wiring, propane lighting, plumbing, septic/leach field. In use as employee housing.

Proposed Actions (structural): Cyclic maintenance. Remove sauna above cottage.

Interpretation: Part of a self-guided walking tour, incorporating educational materials regarding respect for private property.

Residential B Zone

Vegetation: The following vegetation clearing would be done around most historic structures on NPS lands in this zone, for fire and windfall protection and for building access:

- Clear all spruce trees within 30' of all structures.
- Clear all woody vegetation within 5' of all structures.
- Limbing of spruce trees up to 50' from the buildings. Consideration will be given to the effects on thinning/limbing on adjacent landowners and maintaining privacy/vegetation screening.

In cooperation with private landowners, clear woody vegetation along the rail corridor north of the Mill building to end-of-rail to reestablish conditions reflective of historic period and improve glacier views.

Encourage and/or allow vegetable and flower gardens present in 1938, vegetable beds, flower boxes. Invasive and high water demanding species will be avoided. Area will continue to be monitored for invasive plants and populations of such will be removed. Disturbed area revegetation would be considered as needed utilizing native herbaceous vegetation seed collected from the surrounding area.

Circulation/Access: Maintain historic access routes for pedestrian and local vehicle use.

Kennecott Cottage 39C, Lot 88

What has been done: Previous owners did interior work. Interpretive panel installed. New roof installed.

Proposed Actions (structural): Work to include lead paint mitigation, re-establish trim and cabinetry details, repairs to interior paneling, floors and ceiling, new electrical wiring and lights, interior and exterior painting, doors and window repairs. Reconstruct outhouse and boardwalk in the back.

Interpretation: Opened to the public in 2006. One interpretive panel installed in 2007. Manage as an historic period residence and as part of a self-guided walking tour.

Vegetation: Re-establishment of historical vegetation - this may be a lawn and garden.

Kennecott Cottage 13C, Lot 80

What has been done: This cottage on the east side of the railroad bed, was acquired by NPS in 2005. Nothing has been done.

Proposed Actions (structural): Manage as ruin.

Interpretation: Manage and interpret as a ruin. No interior access proposed. Part of a self-guided walking tour.

Vegetation: Selective thinning that allows views of boardwalk, cottage, and railroad bed without allowing for entry to this unsafe area.

Kennecott Cottage 39B, Lot 87

What has been done: Acquired by NPS in 2011. Collapsed under snow load, winter 2012.

Proposed Actions (structural): Consolidate collapsed material and manage as ruin.

Interpretation: Part of a self-guided walking tour.

Vegetation: Clearing for fire protection as identified above.

2.3.2.3 Transportation/Access

Trails and Glacier Access

Kennecott is not just a historic site; one of the most common and important activities undertaken by visitors to Kennecott is use of the hiking trails that provide access to surrounding frontcountry and backcountry, including the heavily visited Root and Kennicott Glaciers. Two of the most popular hiking trails in the park are included, in their entirety, within the boundaries of the Kennecott NHL: trails to the Root Glacier and to the Bonanza/Jumbo Mines. Management of these and other trails and associated visitor activities is therefore central to the Kennecott Operations Plan. This section addresses trails which provide access to the surrounding frontcountry and backcountry from the Kennecott townsite, including the following: 1) the Root Glacier Trail with connections to the glacier itself and the Erie Mine area; 2) the Bonanza Trail with connections to Bonanza and Jumbo Mines; 3) the “Wagon Road” towards McCarthy, and 4) a proposed trail alongside the Kennicott Glacier towards the Kennicott River footbridge with connection to a proposed walk-in campground. Short pedestrian trails and boardwalks within the Kennecott townsite are discussed elsewhere in this document (see proposals listed under “Circulation and Access” for the Industrial, Administrative Core, and Residential A zones), but we note here that these shorter trails work in concert with frontcountry/backcountry trails to promote and preserve a pedestrian-oriented experience within and around the NHL.



Photo 17: Root Glacier trail

All frontcountry/backcountry access trails will be managed and maintained as pedestrian-oriented trails with accommodation, where appropriate, for permitted uses of motorized vehicles by local residents and their guests and for subsistence activities. To preserve the wilderness character of the area surrounding the NHL, regulatory and interpretive signs will be kept to a minimum along the corridors of these trails, but a strong emphasis will be placed on provision of educational and interpretive information at trailheads and within the NHL itself. This information will be delivered by an appropriate combination of posted signs and maps, available pamphlets and self-guided tours, and direct contact by NPS rangers and other interpretive partners, and will collectively emphasize the following: 1) safe and low impact travel techniques in the front and backcountry, including bear safety; 2) interpretation of natural/cultural/glacial history of the surrounding area, and 3) appropriate locations and practices for hiking, camping, picnicking, food storage, use of toilets, etc., with an emphasis on protecting natural resources and private property. Patrolling of trails will be provided at a level sufficient to enforce visitor observance of these practices.

NPS will construct a 3.5 mile pedestrian trail to the NHL from the footbridge over the east (dry) fork of Kennicott River. The route will generally follow the east side of the Kennicott Glacier, staying well away from private property, from the viewshed of the railroad corridor, and from popular swimming areas at the toe of the glacier. Route planning will incorporate community input and will take into account the evolving viewshed as the Glacier continues to thin and retreat. At the north end, the foot trail would connect with the old Wagon Road in the vicinity of the West Bunkhouse or Company Store. Near the south end, a trail segment that links with the proposed walk-in campground would also be included. The

trail would be constructed and maintained exclusively for non-motorized use, with a tread approximately 2 feet in width constructed of unconsolidated outwash and existing moraine material, and with minimal alterations of grade as necessary only to ensure safety and that water will move off the trail.

2.3.2.4 NPS Utilities and Infrastructure

Mill Site Water System: The design for the water system is still underway and the Kennecott Operations Plan/EA will not serve as the NEPA compliance document for the water system. Instead, once specific design details are known, the project will be presented and analyzed in a separate EA. The EA would consider the impacts of the proposed system on water quality and quantity, vegetation, wildlife, area access, scenic quality, and the integrity of the cultural landscape. The comments submitted by the MAC subcommittee and individuals regarding the water system will be retained and addressed in that site-specific EA.

Components of a water system may include a water source (either a well or water intake from Bonanza Creek); a water storage tank; waterline between intake and the storage tank; water treatment; water distribution lines for potable water and/or limited fire suppression.

Sanitary Sewer System

Collection, treatment and disposal of sewage (wastewater) generated by visitors and staff in NHL buildings and on the west side of the Kennicott River would be achieved primarily by septic systems (septic tanks and leach fields).

The NHL buildings that could potentially be equipped with sewer service are the Dairy Barn, Old School, New School, West Bunkhouse, and Company Store.

The existing ADEC approved septic system and leach field has been expanded to service the Dairy Barn property acquired in 2005. The Store, West Bunkhouse, New School, Old School and Dairy Barn would be serviced by this system field.

Excavations would be made along the west side of the site behind the Store and under the historic wagon road. About 1050 lineal feet of buried sewer line from the Store to the Dairy Barn would be provided. Sewage lift station(s) may be required. The lift station would be installed in a buried manhole in the line between the Store and Dairy Barn. A total of 6-8 manholes would be constructed.

Power Generation and Distribution

A power generation and distribution plan will be developed based on projected power requirements for the next 10 to 20 years. The plan and subsequent design will take into account expansion of the system and use of alternate energy sources of power generation including hydro and solar power at Kennecott NHL. This information would include projected costs and the total hours of generator time that would be reduced/saved with alternative systems installed.

The generator located south of the Dairy Barn will continue to provide power for NPS operations at Kennecott as other alternatives are considered. NPS will construct an enclosure around the generator connex in order to mitigate noise production and visual impact.

Airport Operations Facility/office and lots

Installation of a co-gen unit to supplement existing power generation and provide heating capabilities occurred in 2011. Long term intent is for this area to serve as the telecommunications hub for Kennecott and west side NPS facilities and serve as a winter office. This office also will serve as an incident command post and provides an aviation support function.

The NPS acquired a 5 acre lot adjacent to the McCarthy airport in 2012. This lot was acquired with the intent of future development to provide support for NPS operations in the McCarthy/Kennecott area. While no specific site plan has been prepared, the lot may be developed to include the following:

- Water
- Year-round housing unit (at back of lot)
- Seasonal housing
- Staging area for materials and supplies
- Communications hub
- Secure storage area

A specific site plan and development of the area will be handled in a separate compliance document and will be done in communication with the community.

2.3.2.5 Other

Jumbo Transfer Station

What has been done: 2008 work included volunteer effort for emergency foundation and roof repairs, improvements to stop animal access into the building.

Proposed Actions (structural): Future work to include reroofing, wall and floor repairs, structural repairs.

Jumbo Mine Aerial Tramway

What has been done: 2003 documentation.

Proposed Actions (structural): Stabilization of the NPS-owned lower portion of the tramway system. Stabilization to include replacement of deteriorated structural members on tram towers, capping of column members with metal to prevent further deterioration, and bracing and reaffixing missing connections.

Vegetation: Brush removal would occur around NPS owned towers. The portion of the tramway visible from the tram terminus will be brushed to that the tramway system is evident. This action is dependent on possible NPS acquisition of Lot 65 above the tram terminus.

Mudhole Smith cabin

What has been done: Vegetation clearing for fire protection.

Proposed Actions (structural): Replace sill logs, remove non-historic interior flooring, cap the chimney hole to prevent rain and snow from getting in, and maintain the roof and door window openings.

Interpretation: Interpretive site with exhibit regarding aviation history in the area.

Jumbo Mine/Root Glacier outhouse

A vault toilet would be installed near the junction of the Root Glacier trail and the Jumbo Mine trail. The intent is to take pressure off the more remote (and unserviceable) Jumbo Creek outhouse.

The existing Jumbo Creek outhouse will be re-built and re-located. The interior of the new outhouse will be constructed of materials that are easier to clean.

Cemetery

NPS would consider developing a map of the cemetery that would be part of a self-guided tour. Proposed activities at the cemetery include fence maintenance/reconstruction; brushing of native vegetation in order to define cemetery plots; and maintenance of grave markers. To date no invasive plants have been documented in the cemetery but it will continue to be monitored for them and if found, they will be removed. Non-invasive, non-native plants do grow in the cemetery and will not be removed as they may be a part of historic plantings. A cultural landscape report has been prepared for the cemetery which includes recommended treatments. These proposed actions are consistent with the cultural landscape report recommendations. The final cultural landscape report for the cemetery will be made available for public review and will be appended to this document.



Photo 18: Kennecott cemetery

2.3.3 Alternative 3: Management Concepts Alternative

2.3.3.1 Overview

Under this alternative, historic structure stabilization and preservation would reflect the Management Concepts presented in the Interim Operations Plan and in section 1.3.2 of this EA. Most historic structures would be managed within the “preservation” class of *The Secretary of Interior’s Standards for the Treatment of Historic Properties*. Treatments would emphasize interior stabilization and (where necessary) re-roofing, but would not include re-painting or window replacement. Wherever possible, archeological resources would be retained on the landscape. Vegetation clearing would be done only to maintain historical circulation routes. The NHL would continue to be monitored for invasive plants and populations of such would be manually removed, with no use of herbicides. No small scale features would be reconstructed.

On transportation/access issues, NPS would work with the community to manage the NHL as a non-motorized visitor destination. NPS would not propose to develop additional parking but would work with the community on managing parking within the NHL. Under this alternative, NPS would develop 3.5 mile pedestrian trail along the east side of the Kennicott Glacier and would develop a walk-in campground. NPS would work with the community to consider the development of additional non-motorized trails in the area. For NPS Utilities and Infrastructure, no water system would be developed and power generation and distribution would be provided through propane, diesel generator, and consideration of alternative sources, primarily solar.

Detailed NPS proposals for each of the buildings and structures within the NHL are presented below. Before park/community discussions focusing on how to treat individual structures are conducted, a meeting was held in June 2012 to focus on the general question of how managing with a “light touch”, as articulated in the Management Concepts section of this document, is to be interpreted in light of the *The Secretary of Interior’s Standards for the Treatment of Historic Properties*. Once this translation has been agreed upon by both NPS and the local community, it will be consistently applied in all decisions about how to treat individual structures into the future. Once established, any changes to that understanding will be made only with full discussion and buy-in from NPS, the State Historic Preservation Officer, and the local community.

2.3.3.2 Zone by Zone Proposals

Archeological Resources, all Zones: Wherever feasible, all categories of archeological resources identified in the 2000 Cultural Landscape Report will be retained on the landscape. If removal is necessary for public safety or to facilitate building stabilization, archeological resources will be re-located as close to the original documented location as possible.

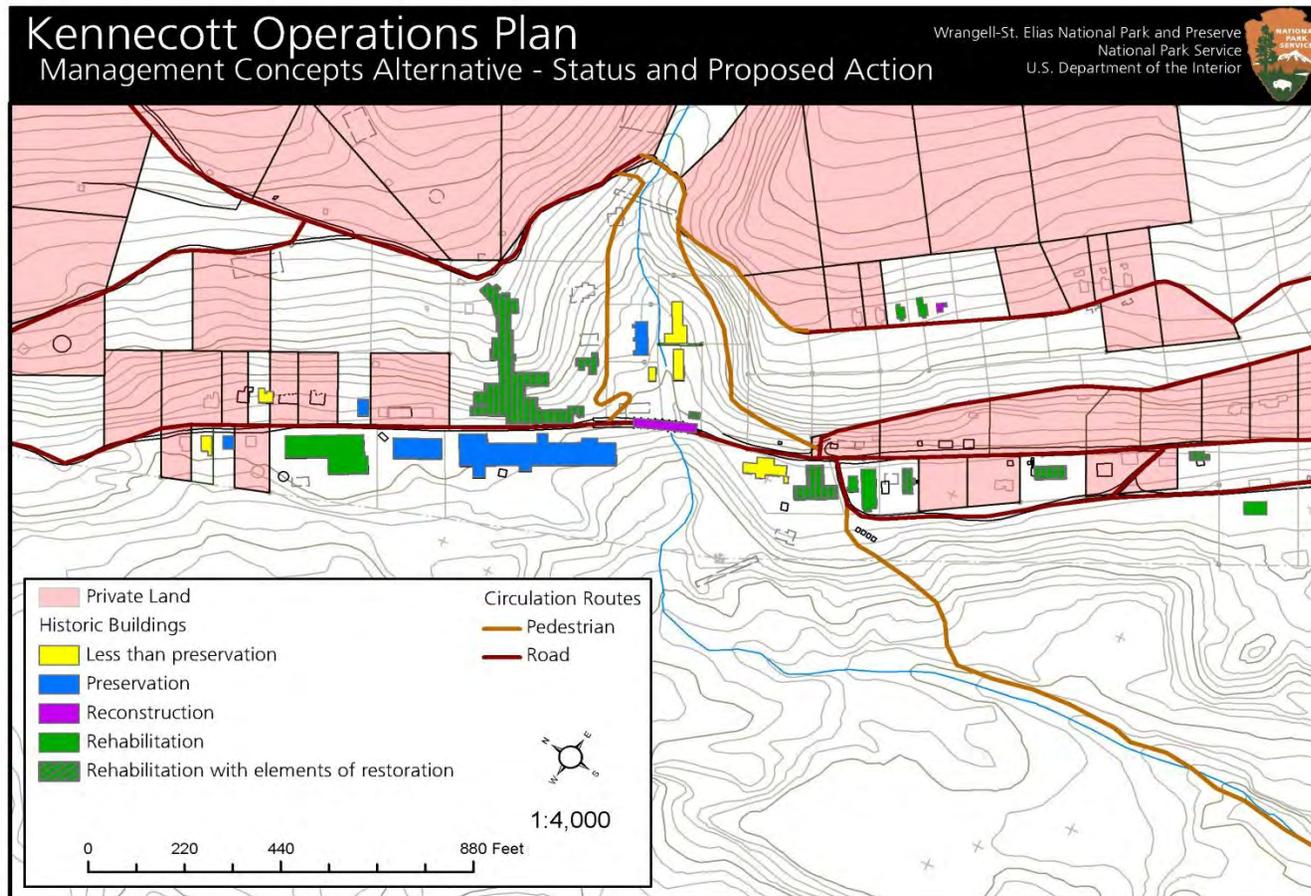
Administrative Core Zone

Circulation/Access: The following are proposed for this zone:

- Improvement and maintenance of a pedestrian trail from the General Manager’s Office, up the creek to the footbridge, connecting to the top of the mill building (see Figure 5). This trail would connect with the Old Wagon road and Silk Stocking Loop described in the Residential A zone.

General Manager’s Office: Same as Alternative 2 for Proposed Actions (structural) and Interpretation. No proposed re-vegetation.

Figure 5: Alternative 3 Management Concepts



Hospital: Same as Alternative 2.

Assay Office: Same as Alternative 2 for Proposed Actions (structural) and Interpretation but no proposed vegetation clearing.

Railroad Depot: Same as Alternative 2.

Sawmill and Carpenters Shop: Same as Alternative 2 for Proposed Actions (structural) and Interpretation, but no vegetation clearing proposed.

Company Store

Proposed Actions (structural): Phase II work to include: Level 1--complete field lab area, interior finishes, lights, install utilities and additional furnaces. Level 3--construct staff office area, interior finishes, lights and communications. Maintain as primary visitor contact point and administrative office space. No water system would be developed under this alternative; consequently no water would be provided to this building. Visitors/employees would continue to utilize vault toilets and the second floor could not be converted to employee office space (without a sprinkler system).

Interpretation: Opened to the public in 2008. Maintain as primary exhibit space. To minimize interpretive intrusions in the town, the General Store will provide a central interpretive focus and a place to fully develop the landmark's primary stories. Given the need for durability and low maintenance, the full range of exhibit techniques can be used including hands-on and interactive media. Consider developing the outside area of the front and back of store as a gathering place for visitors.

Railroad Trestle: Same as Alternative 2 for Proposed Actions (structural) and Interpretation but no proposed vegetation clearing.

National Creek Re-Channelization: Same as for Alternative 2.



Photo 19:

Railroad Trestle

Industrial Core Zone

Tram Terminus

Proposed Actions (structural): Structural repairs to the upper mill including the tram deck, structural reinforcement to ore bin, and floor repairs. Upper tram deck and roof would not be reconstructed. No window replacement or painting.

Interpretation: Open to the public as part of a mill town tour.

Concentration Mill

Proposed Actions (structural): Work to include structural repairs including foundation repairs and column and truss repairs Levels 1 through 7. Repairs to the mill to repair the foundations and reestablish deteriorated timber crib retaining walls will require site disturbance during the period of construction. Once completed, the landscape will be restored.

Additional work would include structural repairs to the mill structure at Levels 8 and above. This work would include foundation and column and truss repairs and stabilization of the ore bins.

The intent of the proposed work is to stabilize the structure for a guided visitor opportunity.

Interpretation: Interpretation of the stabilized mill building through partnership/concession-led tours that meet NPS standards for interpretation. In the Sacking Garage, bring the sacking process to life by displaying an original flat car loaded with burlap bags filled with ore, show the sacking and stacking process with working pulleys to raise and lower the chute, and reinstall the original tracking scale and winch used to pull cars back and forth.

Leaching Plant

Proposed Actions (structural): Ongoing work to include repairs to halt collapse onto railroad corridor, site stabilization, lifting and leveling sacking sheds, foundation replacement, and repairs to floor and wall structure. Work would include structural repairs to the west, north and south walls of the leaching plant including column realignment and footings, shear wall repairs, truss repairs, and asbestos abatement. Allow south addition to collapse and manage as a ruin. Implement interior false-work/rigging to keep ruin structure from collapsing onto the railroad corridor or into the north addition. No interior access proposed.

Interpretation: Continued tour opportunity with mill building.

Machine Shop

Proposed Actions (structural): Collapsing service decks would not be re-established; no door and window repairs; and porch roof over east entrance would not be reconstructed.

Interpretation: Part of a self-guided walking tour.

Power Plant

Proposed Actions (structural): Mediate oil and asbestos in the area. Boiler and stack preservation treatment.

Interpretation: Viewing deck opened to the public in 2006. Maintain the one interpretive exhibit panel on upper mezzanine. Inside tour could be led by a concessioner on an ADA rampway. Part of a self-guided walking tour.

Transformer House

Proposed Actions (structural): Cyclic maintenance.

Interpretation: Not open to the public. Part of a self-guided walking tour. Modify existing windows so that visitors can see inside.



Photo 20: Ore chute going in to Leaching Plant

Commercial Zone

Refrigerator Plant: Same as Alternative 2 for Proposed Actions (structural) and Interpretation. No restoration of small scale features proposed.

West Bunkhouse: Same as Alternative 2 for Proposed Actions (structural) except that interior options for potential partnerships will be limited without the water system to provide potable water and/or fire suppression capabilities. Same as Alternative 2 for Partnerships and Interpretation.

New Schoolhouse

Proposed Actions (structural): Cyclic maintenance. Maintain toilet facilities.

Interpretation: Possible future classroom for visiting school groups and/or interpretive exhibit space. Part of self-guided walking tour. Acknowledge the location of the handball court in future interpretive material.

Recreation Hall: Same as Alternative 2 for Proposed Actions (structural), Partnerships, and Interpretation. No restoration of small scale features proposed.

Old Schoolhouse: Same as Alternative 2.

Dairy Barn: Same as alternative 2.

Residential A Zone

Circulation/Access: The old wagon road from the Company Store through the landslide at the south slope of National Creek would be cleared and maintained for pedestrian use only. The landslide would be by-passed or a trail constructed through it (see Figure 5).

East Bunkhouse:

Proposed Actions (structural): Re-siding with salvaged materials. Repair roof and stabilize. This building is critical to maintain in place for National Creek stability.

Interpretation: Manage and interpret as a ruin. No interior access proposed. Part of a self-guided walking tour.

National Creek Bunkhouse: Same as Alternative 2.

South and North Silk Stocking Cottages: Same as Alternative 2 for Proposed Actions (structural). Because it is a residential area, NPS would not direct the public to this area, as part of a self-guided walking tour or otherwise.

Residential B Zone

Circulation/Access: Maintain historic access routes for pedestrian and local vehicle use.

Kennecott Cottage 39C, Lot 88

Proposed Actions (structural): Work to include re-roofing. No interior work, no exterior painting or door and window repairs.

Interpretation: Interior closed to the public in 2006. One interpretive panel maintained on exterior of building. Part of a self-guided walking tour.

Kennecott Cottage 13C, Lot 80: Same as Alternative 2 for Proposed Actions (structural) and Interpretation. No selective thinning proposed.

Kennecott Cottage 39B, Lot 87

Proposed Actions (structural): None. Manage as ruin.

Interpretation: Part of a self-guided walking tour.

2.3.3.3 Transportation/Access

Trails and Glacier Access: Same as Alternative 2. In addition, NPS would work with the community to consider construction of other non-motorized trail opportunities in the area. The benefits of developing non-motorized trails in the area include:

- Providing enhanced visitor experience.
- Reducing motorized/non-motorized user conflicts, particularly on existing subdivision easements.

2.3.3.4 NPS Utilities and Infrastructure

Mill Site Water System: A water system to provide potable water and water for fire suppression would not be developed. NPS would rely on its existing water system to provide water for employee use to the Silk Stocking cottages, the new School, and the Dairy Barn.

Sanitary Sewer System

Collection, treatment and disposal of sewage (wastewater) generated by visitors and staff in NHL buildings and on the west side of the Kennicott River would be achieved primarily by septic systems (septic tanks and leach fields).

The buildings that would be equipped with sewer service are the Dairy Barn, New School, and Silk Stocking cottages.

The existing ADEC approved septic system and leach field has been expanded to service Dairy Barn property acquired in 2005. The New School and Dairy Barn would be serviced by this system field.

Power Generation and Distribution:

A power generation and distribution plan will be developed based on projected power requirements for the next 10 to 20 years. The plan and subsequent design will take into account expansion of the system and use of alternate energy sources of power generation including solar power at Kennecott NHL. This information would include projected costs and the total hours of generator time that would be reduced/saved with alternative systems installed.

The generator located south of the Dairy Barn will continue to provide power for NPS operations at Kennecott as other alternatives are considered. NPS will construct an enclosure around the generator connex in order to mitigate noise production and visual impact.

Airport Office: Same as Alternative 2, but no permanent housing constructed.

2.3.3.5 Other

Jumbo Transfer Station: No preservation/stabilization work proposed.

Jumbo Mine aerial tramway: No stabilization of tram towers or vegetation clearing.

Mudhole Smith cabin: Manage as is; no preservation/stabilization work proposed; no interpretive site would be developed.

Jumbo Mine/Root Glacier outhouse: A vault toilet would be installed near the junction of the Root Glacier trail and the Jumbo Mine trail. The intent is to take pressure off the more remote (and unserviceable) Jumbo Creek outhouse.

Cemetery: No action.



Photo 21: Tram tower

2.3.4 Alternative 4: Restoration Alternative

2.3.4.1 Overview

Under this alternative, historic structures within the Administrative Core zone would be restored or reconstructed to replicate 1938 conditions. In other zones, all structures would be stabilized and preserved and some would be rehabilitated to accommodate adaptive re-use. Preservation treatments would include painting and/or window replacement to provide weatherization in order to protect the public's investment and ensure that buildings are standing for generations to come. Wherever possible, archeological resources would be retained on the landscape. However, any material associated with Consolidated Wrangell activities would be removed from the site. Vegetation clearing would be done around buildings for fire protection and would be done extensively within the Administrative Core, Commercial, and Industrial Core zones to replicate 1938 conditions and to improve viewsheds. Historic circulation routes will be maintained and enhanced. Some small-scale features would be restored.

On transportation/access issues, NPS would work with the community to manage the NHL as a non-motorized visitor destination. NPS would not propose to develop additional parking in the NHL, but would work with the community on managing parking within the NHL. Under this alternative, NPS would develop 3.5 mile pedestrian trail along the east side of the Kennicott glacier and would develop a walk-in campground. For NPS Utilities and Infrastructure, a water system providing potable water and fire suppression capabilities would be developed; a sanitary sewer system would be developed; and power generation and distribution would be provided through propane, diesel generator, and development of a hydroelectric system.

2.3.4.2 Zone by Zone Proposals

Administrative Core Zone

Vegetation: In order to replicate 1938 conditions and provide fire protection, extensive thinning would occur on NPS lands within this zone. Thinning would consist of removal of all alder, poplar, willow, and white spruce. Thinned vegetation would be chipped with chips hauled off site. Larger materials such as white spruce would be cut into usable lengths, stacked, and left for local use as firewood. Area will continue to be monitored for invasive plants and populations of such will be controlled and removed.

Circulation/Access: The following are proposed for this zone:

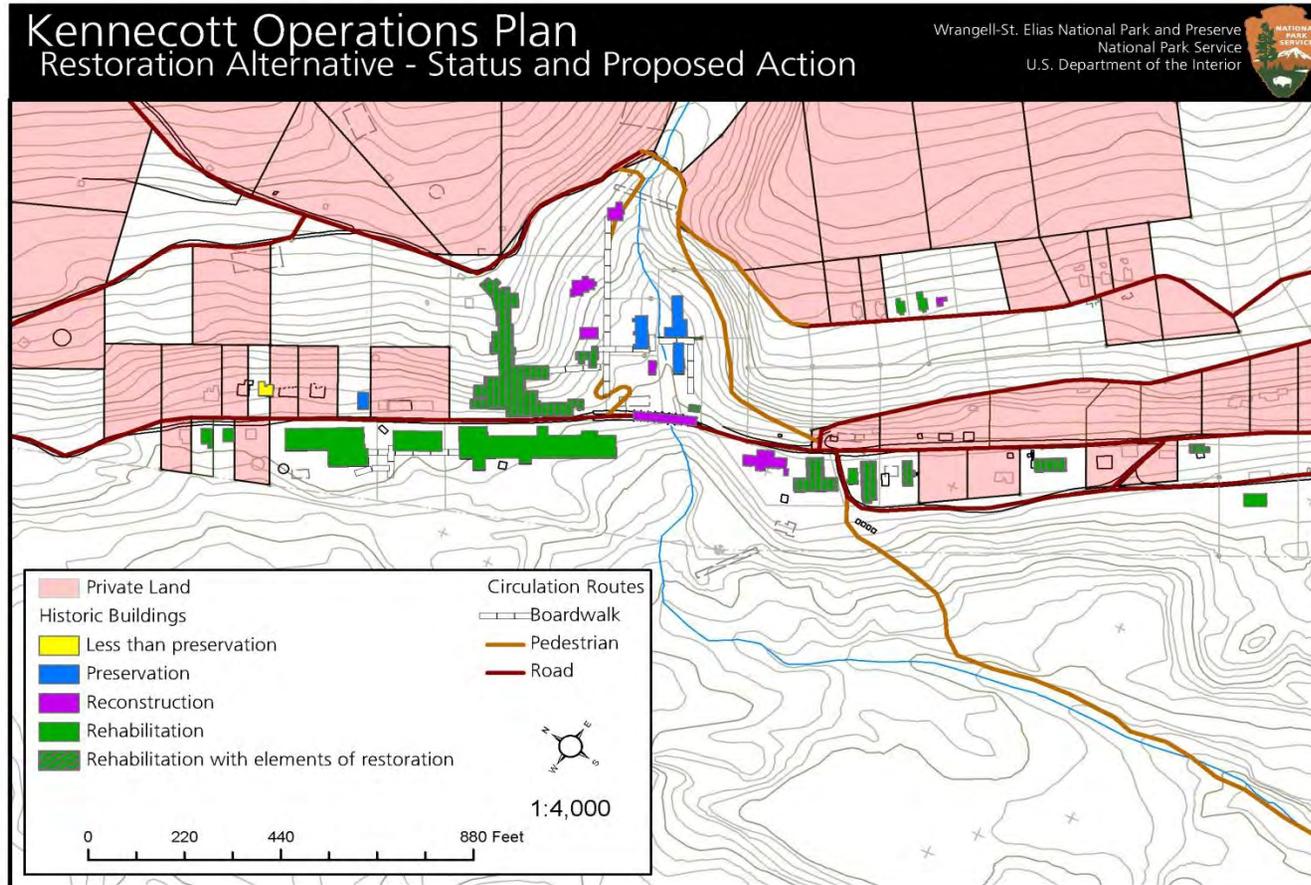
- Improvement and maintenance of a pedestrian trail from the General Manager's Office, up the creek to the footbridge, connecting to the top of the mill building (see Figure 6). Part of this trail would be reconstructed boardwalk. This trail would connect with the Old Wagon road and Silk Stocking Loop described in the Residential A zone.
- Reconstruction of boardwalk between reconstructed and restored structures, based on historical photos.
- Where historically appropriate, reconstruct hose houses in association with the proposed fire suppression system. See NPS Utilities and Infrastructure section.

General Manager's Office: Same as Alternative 2.

Hospital: Same as Alternative 2.

Assay Office

Figure 6: Alternative 4 Restoration



What has been done: Severe flood damage in 2006 resulted in a loss of structural integrity. Removed and relocated salvageable building parts to another site in 2010.

Proposed Actions (structural): Reconstruct building utilizing salvageable remains where possible. No interior access.

Interpretation: Exterior plaque identifying building. Part of a self-guided walking tour.

Railroad Depot: Same as Alternative 2.

Sawmill and Carpenters Shop

Proposed Actions (structural): Reconstruct utilizing historic photos. No interior access.

Interpretation: Exterior plaque identifying building. Part of a self-guided walking tour.

Company Store: Same as Alternative 2.

Railroad Trestle: Same as Alternative 2.

Staff House, Superintendent's Residence, and the Stephen Birch House

Proposed Actions (structural): These historic structures, now completely gone, would be reconstructed based on historic photographs and knowledge of the historic architecture (see Figure 6 for location). Interior finish work would be replicated to the extent possible, similar to the interior finish done on the General Manager's Office.

Interpretation: Reconstructed for interior and exterior access. Opportunity for part of a concession or NPS-led interpretive tour. Interior interpretive panels explain significance of each building as a part of the administration of the site.

National Creek Re-Channelization: Same as Alternative 2.

Industrial Core Zone

Vegetation: In order to replicate 1938 conditions and provide fire protection, extensive thinning would occur on NPS lands within this zone. Thinning would consist of removal of all alder, poplar, willow, and white spruce. Thinned vegetation would be chipped with chips hauled off site. Larger materials such as white spruce would be cut into usable lengths, stacked, and left for local use as firewood. Area will continue to be monitored for invasive plants and populations of such will be controlled and removed.

Circulation/Access: The following are proposed for this zone:

- Construct accessible trails and boardwalks behind the power plant, machine shop, and leaching plant (See Figure 6).
- Where historically appropriate, reconstruct hose houses in association with the proposed fire suppression system. See NPS Utilities and Infrastructure section.

Tram Terminus: Same as Alternative 2.

Concentration Mill: Same as Alternative 2.

Leaching Plant: Same as Alternative 2.

Machine Shop: Same as Alternative 2.

Power Plant: Same as Alternative 2.

Transformer House: Same as Alternative 2.

Commercial Zone

Vegetation: The following vegetation clearing would be done around all historic structures on NPS lands in this zone, for fire and windfall protection and to maintain public access:

- Clear all spruce within 30' of all structures.
- Clear all woody vegetation within 5' of all structures.
- Limb spruce trees up to 10' above the nearest surface fuel within 100' of all structures.

The area will continue to be monitored for invasive plants and populations of such will be controlled and removed.

Refrigerator Plant: Same as Alternative 2.

West Bunkhouse: Same as Alternative 2.

New Schoolhouse: Same as Alternative 2.

Recreation Hall: Same as Alternative 2.

Old Schoolhouse: Same as Alternative 2.

Dairy Barn:

Proposed Actions (structural): Communication system installation. Cyclic maintenance. Future use as shop/break room and this area will be utilized for employee parking.

Residential A Zone

All actions for this Zone same as Alternative 2.

Residential B Zone

All actions same as proposed in Alternative 2.

2.3.4.3 Transportation/Access

All Transportation/Access actions same as proposed under Alternative 2.

2.3.4.4 NPS Utilities and Infrastructure

Mill Site Water System: Same as proposed for Alternative 2.

Sanitary Sewer System: Same as proposed for Alternative 2.

Power Generation and Distribution

A power generation and distribution plan will be developed based on projected power requirements for the next 10 to 20 years. The plan and subsequent design will take into account expansion of the system and use of alternate energy sources of power generation including hydroelectric at Kennecott NHL. This information would include projected costs and the total hours of generator time that would be reduced/saved with alternative systems installed.

The generator located south of the Dairy Barn will continue to provide power for NPS operations at Kennecott as other alternatives are considered. NPS will construct an enclosure around the generator connex in order to mitigate noise production and visual impact. NPS would develop a hydroelectric power system utilizing water out of Bonanza Creek, a Pelton wheel housed in the Power Plant, power generation equipment, and batteries. Any consideration of hydroelectric power will consider the effects on water quality and quantity and on local landowners.

Airport Office: Same as Alternative 2.

2.3.4.5 Other

All actions same as described under Alternative 2.

2.4 Environmentally Preferable Alternative

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the DOI policies contained in the Department Manual (516 DM 4.10) and the Council on Environmental Quality's Forty Questions, defines the environmentally preferable alternative as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101(b)) (516 DM 4.10). The Council on Environmental Quality's Forty Questions further clarifies the identification of the environmentally preferable alternative, stating, "simply put, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources." Alternative 2, the Preferred Alternative, is the environmentally preferable alternative because it provides the most attainable preservation of historic structures and provides for long-term protection of the cultural resource within this National Historic Landmark.

2.5 Preferred Alternative

Alternative 2 is the NPS preferred alternative because it best meets the purpose and need described in Chapter 1 of this EA. Alternative 2 provides a balance between managing the NHL for a sense of abandonment vs. full restoration to replicate 1938 conditions. It provides a balance of historic structure treatments while ensuring that significant historic structures are stabilized and maintained to be enjoyed for generations to come. It proposes development of a water system which is needed to provide quality visitor services, administrative support, and some level of fire detection/suppression. And it describes a communication protocol for continuing to work and partner with the McCarthy/Kennecott community.

2.6 Summary and Comparison of Alternatives

Table 2-1 provides a summary comparison of the basic proposed action components of each alternative. Table 2-2 provides a summary of the direct and indirect environmental effects of each alternative, based on the impact topics identified in Chapter 1.

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Table 2-1 Summary of Alternatives

	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3 (Management Concepts)	Alternative 4 (Restoration)
Vegetation	Vegetation clearing around historic structures for fire protection would not occur; no selective thinning to improve viewsheds; and no invasive plant monitoring and/or removal would occur.	Vegetation clearing would be done around buildings for fire protection and would be done in selected areas to improve viewsheds (including lower portion of Jumbo aerial tramway). Invasive species monitoring and control would occur. Some revegetation would occur utilizing local seed sources.	Vegetation clearing would be done only to maintain historic circulation routes. The NHL would continue to be monitored for invasive plants and populations of such would be manually removed, with no use of herbicides.	Vegetation clearing would be done around buildings for fire protection and would be done extensively within the Administrative Core, Commercial, and Industrial Core zones to replicate 1938 conditions and to improve viewsheds. Invasive species monitoring and control would occur.
Historic structures	Stabilization would cease. Resulting historic structure treatment classes: less than preservation: 5; preservation: 8; reconstruction: 1; and rehabilitation: 10	Under this alternative, treatments include painting and/or window replacement to provide weatherization in order to protect the public’s investment and ensure that buildings are standing for generations to come. Resulting historic structure treatment classes: less than preservation: 3; preservation: 4; reconstruction: 2; rehabilitation: 16	Treatments would emphasize interior stabilization and (where necessary) re-roofing, but would not include re-painting or window replacement. Resulting historic structure treatment classes: less than preservation: 6; preservation: 5; reconstruction: 2; rehabilitation: 13	Under this alternative, historic structures within the Administrative Core zone would be restored or reconstructed to replicate 1938 conditions. This includes the full reconstruction of the staff house, Superintendent’s residence, and the Stephen Birch house. Resulting historic structure treatment classes: less than preservation: 1; preservation: 4; reconstruction: 6; rehabilitation: 17
Circulation patterns	Circulation patterns would not be maintained or restored.	Historic circulation routes would be maintained or improved. Some boardwalks and hose houses would be restored.	Historic circulation routes would be maintained or improved.	Historic circulation routes will be maintained and enhanced, including extensive boardwalk reconstruction in the Administrative zone.
Small scale features	Small scale features would not be maintained or restored.	Maintains or restores some small scale features (hoist houses, utilidors, boardwalk, service decks).	Small scale features would not be maintained or restored.	Maintains or restores small scale features (hoist houses, utilidors, boardwalk, service decks).
Interpretation	Informal interpretation would continue during the summer months (May – September). The Company Store would continue to serve as the primary visitor contact point.	Consistent with 2011 Interpretive Concept Plan.	Implementation of 2011 Interpretive Concept Plan limited by lack of new water system.	Consistent with 2011 Interpretive Concept Plan.
Kennecott arrival/orientation	No changes to current shuttle turnaround.	Shuttle turnaround linked to Blackburn school and used as visitor orientation area.	Use of Blackburn school as visitor orientation area may be limited by lack of new water system.	Same as alternative 2.

Motor vehicle use	No action.	NPS would work with the community to manage the NHL as a non-motorized visitor destination through education.	Same as alternative 2.	Same as alternative 2.
Parking	No action.	Designate limited (10-space) parking in Dairy Barn area. Enforce no parking on NPS-owned portions of subdivision easements. No parking in shuttle turnaround.	Same as alternative 2.	Same as alternative 2.
Trails	No new trail construction.	Construct 3.5 mile Kennicott Glacier pedestrian trail.	Construct 3.5 mile Kennicott Glacier pedestrian trail and consideration of an additional 5 miles of pedestrian trails.	Same as alternative 2.
Walk-in Campground	Would not be constructed.	Campground would be constructed.	Campground would be constructed.	Campground would be constructed.
Water System	No new water system.	Water system would be developed providing potable water and limited fire suppression (sprinkler) systems.	No new water system.	Water system would be developed providing potable water and limited fire suppression. Also would develop hydroelectric system utilizing Bonanza and/or National Creeks.
Airport Office	No development at new lot.	New lot would be developed to provide permanent housing, seasonal housing, and secured storage.	New lot would be developed to provide seasonal housing and secured storage.	Same as alternative 2.

Table 2-2 Summary of Direct and Indirect Impacts from Alternatives

	Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3 (Management Concepts)	Alternative 4 (Restoration)
Water Resources	Direct and indirect effects on water resources would be minor because of the temporary duration and low intensity of the impacts.	Direct and indirect effects on water resources would be minor because of the temporary duration and low intensity of the impacts.	Direct and indirect effects on water resources would be minor because of the temporary duration and low intensity of the impacts.	Direct and indirect effects on water resources would be moderate because of the long-term nature and medium intensity of some of the impacts.
Vegetation	Direct and indirect effects on vegetation would be moderate because of the long-term nature and medium intensity of some of the impacts (mostly lack of invasive species control).	Results in 5 acres of vegetation clearing or thinning. Direct and indirect effects on vegetation would be moderate because they are generally long-term, low to medium intensity, and affect a common park resource.	Results in 3 acres of vegetation clearing or thinning. Direct and indirect effects on vegetation would be minor because they are generally long-term, low intensity, and affect a common park resource.	Results in 13.25 acres of vegetation clearing or thinning. Direct and indirect effects on vegetation would be moderate because the large-scale clearing represents a long-term, high intensity impact that affects a common park resource.

Cultural Resources	This alternative has less potential than the others to result in removal of archeological features as a result of historic structure stabilization and/or introduction of non-historic elements (such as water tanks or water lines) into the cultural landscape. The impact to the entire cultural landscape as it exists today would be negligible .	Because of the introduction of non-historic elements, some actions proposed in this alternative would result in an adverse effect to the cultural landscape. Additionally, some archeological resources would be displaced from the landscape as a result of historic structure stabilization. These would be long term, medium intensity impacts to an important park resource and would result in moderate impacts to cultural resources.	Actions associated with this alternative would result in long term, low intensity impacts to an important park resource and would result in minor impacts to cultural resources.	Because of the introduction of non-historic elements, some actions proposed in this alternative would result in an adverse effect to the cultural landscape. Additionally, archeological resources would be displaced from the landscape as a result of water line installations and historic structure stabilization and restoration. These would be long term, medium intensity impacts to an important park resource and would result in moderate impacts to cultural resources.
Wildlife	Direct and indirect effects on wildlife would be moderate because of potential habitat changes and loss of diversity due to uncontrolled invasive plant species.	Direct and indirect effects on wildlife would be moderate because of impacts on bear habitat and habituation associated with the campground and Kennicott glacier trail.	Same as alternative 2.	Direct and indirect effects on wildlife would be moderate because of impacts on bear habitat and habituation associated with the campground and Kennicott glacier trail and habitat loss associated with large-scale vegetation clearing.
Visual Resources	The No Action alternative proposes fewer actions than any other alternative that could adversely impact visual resources. Direct and indirect impacts to visual resources would be negligible .	Within the milltown, the direct and indirect effects resulting from water system development, vegetation clearing, historic structure stabilization, and painting of historic structures would result in a moderate impact to visual resources.	Within the milltown, the direct and indirect effects resulting from loss of historic views and some painting of historic structures would result in a minor impact to visual resources.	Within the milltown, the direct and indirect effects resulting from water system development, large-scale vegetation clearing, historic structure stabilization and restoration, and painting of historic structures would result in a major impact to visual resources.
Visitor Use and Experience	Lack of action under this alternative would result in long-term, medium intensity negative impacts, resulting in overall moderate impacts to visitor use and experience.	Overall, implementation of this alternative would result in an improvement to visitor use and experience.	This alternative proposes some actions that would result in a positive effect on visitor experience. Because of limitations imposed by not developing a water system, this alternative would have less of a positive effect than Alternative 2.	Same as alternative 2.
Transportation and Access	Direct and indirect effects of this alternative would have a negligible effect on visitor and local resident	Direct and Indirect effects of Alternative 2 on visitor and local access would be minor .	Same as alternative 2.	Same as alternative 2.

	access.			
Soundscape	This alternative, because of the cessation of stabilization efforts, would have the least direct and indirect impact on the natural soundscape and would result in a minor impact to soundscape within the Kennecott mill town.	For visitors and local residents within the Kennecott mill town, these impacts would be long-term (5 years) and high intensity, resulting in a moderate impact to soundscapes within the milltown. Outside the milltown, backcountry visitors would experience negligible impacts to the natural soundscape.	To local residents and visitors to the Kennecott milltown, the impacts described above would be long-term (5 year) and high intensity, resulting in a moderate impact to soundscape within the Kennecott milltown. For backcountry visitors, impacts to the natural soundscape would be negligible.	Local residents and Kennecott milltown visitors would experience long term (10 year), high intensity impacts that would result in a moderate impact to soundscape within the milltown. Backcountry visitors would experience negligible impacts to the natural soundscape.
Socioeconomics	The loss of seasonal jobs due to cessation of historic structure stabilization work in the area would result in a moderate negative effect on area socioeconomics.	Long term loss of seasonal employment opportunities in the area would have a minor negative effect on area socioeconomics. Expected increase in visitor use would benefit local businesses.	Same as alternative 2.	Historic structure stabilization and restoration proposed under this alternative would have a minor beneficial effect to area socioeconomics.

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